



COURSE ANNOUNCEMENT BULLETIN

2024-25



BROWN

The Course Announcement is intended to provide only general information about Brown University; including courses offered, and it is not in any manner contractually binding.

The information contained herein is subject to revision and change at any time.

Brown University provides equal opportunity and prohibits discrimination, harassment and retaliation based upon a person's race, color, religion, sex, age, national or ethnic origin, disability, veteran status, sexual orientation, gender identity, gender expression or any other characteristic protected under applicable law and caste which is protected under this policy, in the administration of its policies, programs and activities. The University recognizes and rewards individuals on the basis of qualifications and performance.

The University maintains an affirmative action program in employment for minorities, women, persons with disabilities and veterans, and requires its employees to take good faith efforts to comply with the program. The University encourages those with whom it conducts business to meet the commitments of this important program.

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Academic Calendar

Summer 2024

March 25, 2024	Mon.	Registration opens for Summer 2024 for Online - MPH students at 9:00 a.m. EDT.
April 1 - April 11, 2024	Mon. - Thurs.	Registration for Summer courses for continuing Brown undergraduates opens at 9:00 a.m. EDT on Monday April 1 and continues through Thursday April 11 at 5:00 p.m. EDT
April 16 - April 23, 2024	Tues. - Tues.	Registration period for fall courses for Brown undergraduates. Summer registration closed during this period.
April 24 - June 20, 2024	Wed. - Thurs.	Registration period for Summer courses for Brown undergraduates re-opens at 9:00 a.m. EDT and remains open until Thursday June 20 at 5:00 p.m. EDT
June 16, 2024	Sun.	Residence halls open.
June 17, 2024	Mon.	Summer Session classes begin.
June 19, 2024	Wed.	Juneteenth Holiday. No University exercises.
June 20, 2024	Thurs.	Last day to change courses (5:00 p.m. EDT deadline). (All students MUST be in their registered courses by Thursday, June 20.)
June 24, 2024	Mon.	Last day to change grade options (5:00 p.m. EDT deadline)
July 4, 2024	Thurs.	Independence Day holiday. No University exercises.
July 26, 2024	Fri.	Classes end.
July 27 - Jul 30, 2024	Sat. - Tues.	Reading period.
July 30, 2024	Tues.	Last day to drop a course (5:00 p.m. EDT deadline). Last day to initiate a Course Performance Report via ASK.
Jul 31 - Aug 2, 2024	Wed. - Fri.	Final examination period.
August 2, 2024	Fri.	Summer Session ends.
August 3, 2024	Sat.	Residence halls close.
Fall 2024		
July 10, 2024	Wed.	Registration opens for Semester I 2024-25 for Online - MPH students at 9:00 a.m. EDT.
Aug. 1, 2024	Thurs.	Last day for payment of charges.
Aug. 27, 2024	Tues.	Beginning of Graduate School All-Student Orientation.
Aug. 29, 2024	Thurs.	Beginning of College Orientation.
Aug. 30 - Sept 2, 2024	Fri. - Mon.	Registration of new undergraduate and all graduate students (except Online - MPH) for the fall semester begins at 4:00 pm EDT Friday and ends at 11:59 p.m. EDT Monday Sept 2. (Maximum of 4 credit hours allowed for undergraduates).
Sept. 3, 2024	Tues.	Registration re-opens at 9:00 a.m. EDT on Sept 3 for all students for the fall semester. (Up to a maximum of 5 credit hours allowed).
Sept. 3, 2024	Tues.	Opening Convocation at 4:00 p.m. EDT
Sept. 4, 2024	Wed.	Classes of the first semester begin.

Sept. 4, 2024	Wed.	First day of RISD Fall Session.
Sept. 11, 2024	Wed.	Last day to register for a Fall RISD course without a fee or change a grade option for a Fall RISD course - (5:00 p.m. EDT deadline).
Sept. 17, 2024	Tues.	Last day to add a course without a fee. (5:00 p.m. EDT deadline) Banner Web will be taken down for approximately one hour. Once relaunched, all course adds require Instructor override and will be charged a late fee of \$15 per course.
Oct. 1, 2024	Tues.	Deadline for undergraduates on personal leave (including employment and military leave) or on Full-time Study Away status to request return to studies at Brown for Spring.
Oct. 1, 2024	Tues.	Last day to add a course (includes late fee), change from audit to credit, or change a grade option declaration (5:00 p.m. EDT deadline).
Oct. 14, 2024	Mon.	Indigenous Peoples' Day. No University exercises.
Oct. 18, 2024	Fri.	Last day to change from credit to audit in a course (5:00 p.m. EDT deadline).
Oct. 19, 2024	Sat.	Mid-semester
Oct. 22, 2024	Tues.	Date by which sophomores entering their 5th semester must file their concentration declaration forms via ASK to avoid having a No Concentration hold placed against their Banner registration (5:00 p.m. EDT deadline).
Oct. 28, 2024	Mon.	Advising period for spring pre-registration begins. Students in their first through third semesters will need to procure their advising PIN from their advisor in order to register.
Nov. 5, 2024	Tues.	United States Election Day. No University exercises.
Nov. 12, 2024	Tues.	Registration opens for Semester II, 2024-25 for undergraduate students semester level 07 and above and all continuing graduate students (except Online - MPH) at noon EST. Registration remains open until Tuesday, November 19, 5:00 p.m. EST. (Maximum of 4 credit hours allowed for undergraduates).
Nov. 13, 2024	Wed.	Registration opens for Semester II, 2024-25 for undergraduate students semester levels 05-06 at noon EST. (Students are unable to register for 5th semester unless approved concentration is filed). Registration remains open until Tuesday, November 19, 5:00 p.m. EST. (Maximum of 4 credit hours allowed for undergraduates).
Nov. 14, 2024	Thurs.	Students on serious warning who wish to drop a course after this date must meet with an academic dean for advising and to obtain a drop code.

Nov. 14, 2024	Thurs.	Registration opens for Semester II, 2024-25 for undergraduate students semester levels 03-04 at noon EST. Registration remains open until Tuesday, November 19, 5:00 p.m. EST. (Maximum of 4 credit hours allowed for undergraduates).	Dec. 13, 2024	Fri.	Last day for approved 7th (or penultimate) semester undergraduates in eligible concentrations to submit writing completed in the concentration in ASK to complete part II of the writing requirement. Concentration advisors must approve submitted writing in ASK by the last day of the semester.
Nov. 15, 2024	Fri.	Deadline for submission of proposals for College Curriculum Council-approved undergraduate group study projects (GISPs), independent study projects, and internships for credit) for Semester II.	Dec. 13 - 21, 2024	Fri. - Sat.	Final Examination Period (inclusive of Sunday)
Nov. 15, 2024	Fri.	Registration opens for Semester II, 2024-25 for undergraduate students semester levels 01-02 at noon EST. Registration remains open until Tuesday, November 19, 5:00 p.m. EST. (Maximum of 4 credit hours allowed for undergraduates).	Winter 2025		
Nov. 16 - 19, 2024	Sat. - Tues.	Registration for Semester II, 2024-25 continues until Tuesday, November 19, 5:00 p.m. EST.	Dec. 18, 2024	Wed.	Last day to register for a Wintersession course (5:00 p.m. EST deadline).
Nov. 27 - Dec. 01, 2024	Wed. - Sun.	Thanksgiving recess beginning Wednesday at noon EST.	Dec. 18, 2024	Wed.	Wintersession tuition due.
Nov. 27, 2024	Wed.	Registration opens for Semester II 2024-25 for Online - MPH students at 9:00 a.m. EST.	Dec. 23, 2024	Mon.	Wintersession courses begin.
Dec. 1, 2024	Sun.	Deadline for undergraduates to request a personal leave (including employment and military leave) or to request Full-time Study Away status for Spring. Any Full-time Study Away approved by the Study Away Review Committee for which the Registrar does not receive enrollment verification will not be honored.	Jan. 7, 2025	Tues.	Last day to change a grade option declaration.
Dec. 2, 2024	Mon.	Classes resume.	Jan. 14, 2025	Tues.	Last day to drop a course or request an incomplete from an instructor. Last day to initiate a Course Performance Report via ASK.
Dec. 2, 2024	Mon.	Last day of Fall RISD classes.	Jan. 20, 2025	Mon.	Martin Luther King, Jr. holiday. No University exercises.
Dec. 7, 2024	Sat.	Midyear Completion Celebration at 4:00 p.m. in Salomon De Ciccio Family Auditorium. Reception to follow in Sayles Hall.	Jan. 21, 2025	Tues.	Final examinations. Wintersession ends.
Dec. 8, 2024	Sun.	Beginning of Reading Period (optional and at the discretion of the instructor.)	Spring 2025		
Dec. 12, 2024	Thurs.	Classes end for courses not observing the Reading Period. Last day to drop a course (5:00 p.m. EST deadline) or to request an incomplete from an instructor.	Jan. 1, 2025	Wed.	Last day for payment of charges.
Dec. 12, 2024	Thurs.	Last day to initiate a Course Performance Report via ASK.	Jan. 3, 2025	Fri.	First day of RISD Winter Session.
Dec. 12, 2024	Thurs.	UG CONCENTRATIONS: Last day for students to declare second or third concentrations in ASK for students in their penultimate semester (typically the 7th semester) who are declaring a second/third concentration (5:00 p.m. EST deadline).	Jan. 10, 2025	Fri.	Last day to register for a Winter RISD course without a fee or change a grade option for a Winter RISD course (5:00 p.m. EST deadline).
Dec. 12, 2024	Thurs.	UG CERTIFICATES: Last day for students in their ante-penultimate (typically 6th) semester to declare an undergraduate certificate in ASK.	Jan. 20, 2025	Mon.	Martin Luther King, Jr. holiday. No University exercises.
			Jan. 22, 2025	Wed.	Classes of the second semester begin.
			Feb. 4, 2025	Tues.	Last day to add a course without a fee. (5:00 p.m. EST deadline) Banner web will be taken down for approximately one hour. Once relaunched, all course adds require Instructor override and will be charged a late fee of \$15 per course.
			Feb. 6, 2025	Thurs.	Last day of Winter RISD classes.
			Feb. 13, 2025	Thurs.	First day of RISD Spring Session.
			Feb. 15 - 18, 2025	Sat. - Tues.	Long weekend. No University exercises.
			Feb. 19, 2025	Wed.	Classes resume. Last day to add a course (includes late fee), change from audit to credit, or change a grade option declaration (5:00 p.m. EST deadline).
			Feb. 20, 2025	Thurs.	Last day to register for a Spring RISD course without a fee or change a grade option for a Spring RISD course (5:00 p.m. EST deadline).
			March 7, 2025	Fri.	Last day to change from credit to audit in a course (5:00 EST p.m. deadline).
			March 8, 2025	Sat.	Mid-semester.
			Mar. 22 - 30, 2025	Sat. - Sun.	Spring Recess.

April 1, 2025	Tues.	Deadline for undergraduates on personal leave (including employment and military leave) or on Full-time Study Away status to request return to studies at Brown for Fall.
March 31, 2025	Mon.	Classes resume.
April 25, 2025	Fri.	Reading Period begins and will end on May 6 (optional and at the discretion of the instructor).
May 1, 2025	Thurs.	Deadline for undergraduates to request a personal leave (including employment and military leave) or to request Full-time Study Away status for Fall. Any Full-time Study Away approved by the Study Away Review Committee for which the Registrar does not receive enrollment verification will not be honored.
May 6, 2025	Tues.	Last day to initiate a Course Performance Report via ASK.
May 6, 2025	Tues.	Classes end for courses not observing the Reading Period. Last day to drop a course (5:00 p.m. EDT deadline) or to request an incomplete from an instructor.
May 6, 2025	Tues.	Reading Period ends.
May 6, 2025	Tues.	UG CONCENTRATIONS: Last day for students to declare second or third concentrations in ASK for students in their penultimate semester (typically the 7th semester) who are declaring a second/third concentration (5:00 p.m. EDT deadline).
May 6, 2025	Tues.	UG CERTIFICATES: Last day for students in their ante-penultimate (typically 6th) semester to declare an undergraduate certificate in ASK.
May 7 - May 16, 2025	Wed. - Fri.	Final Examination Period. (No exams on Sunday May 11).
May 7, 2025	Wed.	Last day for approved 7th (or penultimate) semester undergraduates in eligible concentrations to submit writing completed in the concentration in ASK to complete part II of the writing requirement. Concentration advisors must approve submitted writing in ASK by the last day of the semester.
May 14, 2025	Wed.	Last day of Spring RISD classes.
May 25, 2025	Sun.	Commencement.

General Regulations

General Academic Requirements

Undergraduate degrees:

Information regarding general academic degree requirements are listed under 'The College' section of the University Bulletin as well as on the respective websites of the Office of the Registrar (<https://registrar.brown.edu/students/degree-guidelines/college/>) and the Dean of the College (<https://college.brown.edu/design-your-education/complete-your-degree/>).

Advanced degrees:

Information regarding Advanced degree requirements for specific academic programs are listed on the Graduate School (<https://www.brown.edu/academics/graduate/>) website. Information regarding general and overall guidelines for advanced degrees are also listed on the Office of the Registrar (<https://registrar.brown.edu/students/degree-guidelines/graduate-school/>) website.

Enrollment and course registration

Instructions about enrollment will be sent via Today@Brown prior to the opening of each semester to all students. To complete enrollment, all requirements of the pertinent administrative offices of the University must be met, including registration for courses, payment of accounts, and arrangements for housing as appropriate. Fees will be charged for failure to meet established deadlines. All students must complete enrollment in order to be eligible to remain at the University.

Students are urged to note carefully the instructions provided at registration in order to assure eligibility for enrollment, proper registration in courses, and to avoid unnecessary payment of Change of Course fees. All registration materials and/or processes are considered official university documents. Any falsification of signatures or other tampering with such forms/processes constitutes a violation of the Academic Code.

All registration-related deadlines for each semester are listed in the 'Academic Calendar' section of the Bulletin and also on the Office of the Registrar website as well as answers to common registration-related questions.

For the full text on the Academic Regulations and Instructions for Registration, see the Registrar's Office web site at:

<https://registrar.brown.edu/students/course-enrollment/registration-guidelines/> (<https://registrar.brown.edu/students/course-enrollment/registration-guidelines/>)

For tutorials on registration, see:

<https://ithelp.brown.edu/kb/courses-brown-for-students/> (<https://ithelp.brown.edu/kb/courses-brown-for-students/>)

To access the most up-to-date course information *including credit bearing summer session offerings* (*The course information in the PDF versions of the University Bulletin and Course Announcement Bulletin is only updated just prior to registration events), see:

'Courses@Brown (<https://cab.brown.edu/>)' (<https://cab.brown.edu/>)

Concurrent or Dual Enrollment

In accordance with Brown University guidelines, Concurrent or Dual enrollment in credit bearing courses and/or degree programs at another postsecondary institution while enrolled as a Brown University degree candidate is prohibited except in cases of established cross registration agreements and/or approved joint degree programs such as the Rhode Island School of Design (in both The College and Graduate School); Wheaton College (The College); Harvard Faculty of Arts and Sciences (Graduate School only); and IE Business School (Graduate School only).

Course Credit

The semester course is the unit of credit. This is defined as a course taken for the duration of one semester and, for purposes of evaluation, may be considered the approximate equivalent of four semester hours.

Brown follows the Federal standard that defines a credit hour as an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutional established equivalence that reasonably approximates not less than: (1) One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for each semester, or the equivalent amount of work over a different amount of time (i.e. Summer/Winter Sessions); or (2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours. Additionally, transfer credit must equate to the four semester hour standard except for three credit courses taken at the Rhode Island School of Design.

Course Numbering

Courses numbered 0001-0999 are strictly for Undergraduate credit (Graduate students may enroll in such courses with the permission of the instructor and the Graduate School.)

Courses numbered between 1000-1999 are for both Undergraduate and Graduate credit depending on the level of the student's degree program.

Courses numbered between 2000-2999 are for Graduate credit (Undergraduate students may enroll in such courses and may be applied towards their Undergraduate degree requirements by permission of the instructor.)

Courses numbered above 3000 are strictly for credit in the Alpert Medical School. Certain MD level courses may be taken for credit for Undergraduate students enrolled in the PLME program, but such courses do not count towards quantity, concentration, or Latin honors requirements for the Baccalaureate degree.

Maximum Course Load and Auditing

No student enrolled in The College or the Graduate School may enroll for more than five Brown credits in a semester. A degree candidate paying full tuition (4 or more enrollment units per semester) and is enrolled in less than five academic credits may be permitted to audit (*see below section on auditing*) additional course(s). At no time may a student be registered for more than 5 credits/courses including audits.

Enrollment Without Academic Credit

Auditing. An auditor is a student who is registered in a course without earning academic credit upon successful completion under the following conditions: (1) the student must be properly registered for it; (2) the student must pay the usual course fee except as indicated in the next paragraph; (3) the student is entitled to all instruction in the course, including conferences, the criticism of papers, tests, and examinations.

Any student registered on a full-time basis may be permitted to audit additional courses in any semester without charge. The total number of course registrations, including audits, may not exceed five credits. Non-degree or student paying less than four enrollment units of tuition may choose to audit if they so choose, but the student does so with the understanding that they will pay the equivalent rate as if registered for academic credit.

With the concurrence of the instructor, the fact that a course has been audited shall be entered on the permanent record of any student electing this privilege. The status of a course in which a student has registered may not be changed from audit to credit after the fourth week of classes or from credit to audit after midsemester.

Vagabonding. A "vagabond" is a student who, with the permission of the instructor involved, visits a given course occasionally or regularly without payment of fee. It is understood that such a student shall be entitled to participate in classes and activities, including discussions, conferences, and papers, *only* at the pleasure of the instructor.

Attendance, Grading, Examinations

Attendance

It is in the interest of every student to attend all sessions of the classes in which registered, and each student has an obligation to contribute to the academic performance of all by full participation in the work of each class; however, within such limits as are necessary for the general welfare, a student benefits also from exercising discretion and assuming responsibility for his or her educational progress.

Accordingly, unless the instructor imposes attendance requirements, students are not limited with respect to the number of absences from a course. When, in the instructor's opinion, a student is abusing the privilege of voluntary attendance, the appropriate dean's office should be notified so that appropriate action may be taken.

A student is always fully responsible for any course work missed because of absences and will be assigned failing grades in final examinations missed without excuse from the dean's office.

No student organization shall make any appointment for undergraduates which conflicts with college exercises unless permission has been obtained from the dean.

Grading System

At the end of each semester final grades are given in semester courses. In all courses, except those designated by the instructor as *Mandatory Satisfactory/No Credit*, a student may, in consultation with the advisor, elect to be graded on a basis of either *Satisfactory/No Credit* or *A, B, C/No Credit*. A student must for every course taken indicate by the end of the fourth week of the semester which basis for grading is elected.

Any student regularly enrolled in a course, no matter whether for *A, B, C/No Credit* or for *Satisfactory/No Credit*, may request from the instructor a more detailed written evaluation of his or her work. (See Course Performance Report below.) Such supplemental evaluations are intended primarily for the information of the student and do not replace departmental evaluations.

No Credit. This grade is given when courses are not satisfactorily completed. The notation *No Credit*, and the description of the course in which it is given, are not entered on the official academic transcript.

1. Courses may be designated to be graded on a *Mandatory Satisfactory/No Credit* basis for all students enrolled on the initiative of the instructor. The designation of a course by an instructor to be graded *S/NC* only must be announced no later than the first day of classes and entails the responsibility for providing Course Performance Report forms to all students who request them. An asterisk shall accompany the listing on the transcript of any course that has been designated by the instructor to be graded on the basis of *S/NC* only, with an appropriate explanation of the symbol provided.
2. In exceptional circumstances, a course may be left incomplete (except for a regularly scheduled final examination—see paragraph 3 below), with the instructor's consent. In such cases, a grade of *INC* will be assigned provided that the student has filed a request for extension of time to complete the work of the course and the instructor has consented to such a request. Unless an earlier date is specified by the instructor, grades of *INC* must be made up as follows: for Semester I, by midsemester of Semester II; for Semester II or the for-credit 7 week Summer Session, by the first day of Fall semester. Extensions beyond semester in which the course left incomplete was taken may be granted by the instructor who will indicate this in writing to the registrar. A course not completed by the designated time will be assigned a grade of *NC* unless the instructor indicates that sufficient work has been completed to justify course credit by submitting, as appropriate, a grade change from *INC* to *A, B, C*, or *S*. A grade of *NC* assigned in accordance with these procedures may be changed subsequently, but no later than one calendar year after the end of the semester in which the course was taken.
3. If a student is absent from a regularly scheduled final examination for a course, the instructor should submit either an *INC* or an *NC*. If the absence from the examination is excused by the dean, the student will be permitted to take a Special Examination and the original grade

will be made into an *ABS* temporarily. The Special Examination will be administered by the Office of the Registrar in accordance with the provisions in the Faculty Rules for such examinations, unless other arrangements are agreed to by the instructor and the student, and communicated to the registrar. If the absence from the final examination is not excused by the dean, the student will receive no credit for the course.

Year Courses: A year course is one in which both halves must be passed in order to get credit for the entire year. The grade at the end of the first semester is normally a temporary one. Neither semester may be elected independently without special permission. The final grade submitted at the end of the course covers the work of the entire year and is recorded as the final grade for both semesters. It is normally expected that the second half of a year course will be completed in the second semester of the same academic year in which the first half was taken. If the second half of the year course is not completed at the end of that academic year, the grade for the first semester will become a *No Credit*. If the student completes the second part of the year course during a later academic year, he or she may need to notify the Registrar's Office, in order to reactivate the first part of the course.

In registering for the second half of a year course, students must register for credit if the first half was taken for credit. Similarly, if registered for audit in the first half, the second half of the course registration must also be as an audit. Exceptions must be approved by both the academic department and the Committee on Academic Standing.

Repeating Courses: Unless a course is explicitly approved by either the College Curriculum Council or Graduate Council as being able to be repeated for credit, Once course credit has been earned with an initial passing grade *A, B, C*, or *Satisfactory (S)* or through Transfer Credit it cannot be officially registered for again for in an effort to improve one's initial grade.

Grade Requirements for Advanced Degrees: A minimum grade of either *Satisfactory* or *C* in a 1000 or 2000 level course carries credit toward all advanced degrees. Individual departments may, subject to the approval of the Graduate Council, set higher grade requirements.

Advanced degree candidates may be required to register in courses primarily for undergraduates (numbered 1–999); these courses do not carry advanced degree credit. On occasion, however, and with approval of the student's department and the dean, a student may register for such a course with extra work for advanced degree credit. This course then has the same standing as a 1000-level course and an *EX* is noted on the transcript. This provision for extra work does not apply to courses of the level of 1–999 taken for graduate credit by students in MD program.

Course Performance Reports: Any undergraduate student regularly enrolled in a course, no matter whether for *A, B, C/No Credit* or for *Satisfactory/No Credit*, may request from the instructor a more detailed written evaluation of the student's work by way of a Course Performance Report (*Note: This form is available online for currently enrolled undergraduates via Advising SideKick (ASK)*). Course performance reports provide valuable information to students about their success in meeting course learning objectives, especially for courses graded *S/NC*. The instructor may decline to submit such a form if they felt they have inadequate information to do so. The deadline for requesting a Course Performance Report is the day before the final exam period begins in the semester of enrollment in the course (Refer to Academic Calendar for relevant deadlines). Late Course Performance Reports may be requested after the deadline and before a student graduates, but the instructor is not obligated to complete a late report. Students may not request a Course Performance Report after completing their degree requirements (although they may contact an instructor directly for a letter of recommendation or a reference at any time). Copies of Course Performance Reports are made available to: (1) the student, (2) the dean's office, and (3) the student's concentration advisor. While not part of the official record, Course Performance Reports may be sent out from the University at the student's request as part of an official transcript request as long as the student provides such copies to the Office of the Registrar when making the initial transcript request.

Transcripts: Requests for transcripts must be made electronically. For further information please visit the Office of the Registrar's website (<https://cab.brown.edu>).

registrar.brown.edu/students/academic-records/transcript-requests/). Transcripts will be issued only if all financial obligations to the University have been met.

An official transcript consists of a copy of the permanent record listing courses passed and grades received. A statement is added to all transcripts explaining the grading system and indicating that the student may elect to include other material with the official transcript. The student should choose this material in consultation with his or her advisor. The University will mail this material in one envelope along with the official transcript.

Examinations

A final, written examination (at the end of each semester) shall be given in each course numbered under 2000 unless the instructor of a particular course decides to use some other mode of final evaluation. If the written examination is not to be used, the mode of final examination which is to be used shall be made known to the students in the course no later than midterm and, in addition, the department and the registrar shall be informed.

Final Examination Schedule: A pre-defined period at the close of each semester is provided for final examinations for those courses for which such an examination is scheduled. Two examination periods are scheduled for each day. The examination group is determined by, in most cases, the offering time associated with the course (indicated by the figure in parentheses) and also as displayed on Banner Web. The schedule for 2024-2025 is as follows:

Semester I, 2024-2025

Date	9 am Group	2 pm Group
Dec. 13 F	16	18
Dec. 14 Sat	15	12
Dec. 15 Su	17	7
Dec. 16 M	5	3
Dec. 17 T	6	8
Dec. 18 W	9	10
Dec. 19 Th	13	4
Dec. 20 F	14	11
Dec. 21 Sat	1	2

Semester II, 2024-2025

Date	9 am Group	2 pm Group
May 7 W	8	14
May 8 Th	3	16
May 9 F	15	2
May 10 Sat	12	9
May 12 M	4	5
May 13 T	1	18
May 14 W	11	7
May 15 Th	13	10
May 16 F	17	6

Exam Excuses: The Office of the Dean of the College is solely responsible for determining whether a student's absence from a final examination is excused. To ensure equitable treatment of all students, students are excused from exams only for family or medical emergencies. Please note that students' travel plans are never an excuse for missing a final exam. Faculty wishing to grant a student an exam excuse may contact the appropriate academic deans authorized to grant exam excuses. In emergency situations, students who are unable to contact their professors must contact the Office of the Dean of the College, which will determine whether or not an exam excuse is warranted. Course instructors are notified of exam excuses granted by the Dean of the College Office.

Consistent with Brown's policy on nondiscrimination, students who are unable to take a final examination due to religious observance may arrange to take their final at an alternate time. Students who cannot take a final exam on the scheduled date due to a religious observance must inform the instructors of any conflicts within the first four weeks of

the term. In such cases, instructors are expected to offer a final exam on an alternate date within the same semester, noting the policy in the Faculty Rules that final examinations may be given only during the final examinations period. For further information on exams and religious observance please visit <https://www.brown.edu/academics/college/support/faculty/religiousobservance> (<https://www.brown.edu/academics/college/support/faculty/religiousobservance/>).

Make-up exams for approved exam excuses for medical or family emergencies are administered by the Registrar in the second week of the subsequent fall or spring term. The Registrar's Office informs students by email of the date, time, and location of make-up exams.

Placement and Achievement Tests in Foreign Languages. Placement tests in the foreign languages are given during Orientation Program in the fall and during the first week of classes in each semester.

All students, before taking college courses in a foreign language in which they have presented entrance credit, must take either a placement test at Brown University or, preferably, a College Board Language Achievement Test in secondary school. Students with outstanding performance on these tests, or on the Advanced Placement Tests of the College Entrance Examination Board, may be admitted to advanced courses without the usual course prerequisites.

Student Code of Conduct

Academic Code Violations

All cases of academic dishonesty among undergraduates, graduate, or medical students, as defined in the Academic Code at Brown University, shall be referred to the dean of the College, Graduate School, or Medical School, or his or her designated representative. A student accused of such an offense shall be notified in writing as soon as possible of the specific charge or charges against him or her before his or her case is considered. The student shall be given the opportunity of a hearing before the designated representative of the dean of the College, Graduate School, or Medical School, and two members of the faculty, at which all relevant facts may be presented. A student shall have the right to appeal any decision to the dean of the College, Graduate School, or Medical School within five business days after receipt of the official letter outlining the case and the decision reached.

Code of Student Conduct

Brown strives to sustain a learning environment that supports individual exploration. Central to this effort are the four primary Principles of the Brown University Community: individual integrity, respect for others, respect for University resources, and respect for the values of teaching, learning and scholarship. Our community believes that adherence to these principles supports the overall academic mission of the University. Violations of these principles will be handled through the procedures governing the Academic Code and the Code of Student Conduct. These procedures are designed to address behaviors that impede the educational activity of the University or that infringe upon the rights of others.

Student Conduct cases are administered by the Office of Student Conduct & Community Standards.

Specific hearing procedures can be found online at www.brown.edu/randr (<http://www.brown.edu/randr/>).

Curricular Programs

Collaborative Research and Scholarly Experiences

Collaborative Research and Scholarly Experiences (COEX) engage groups of students in addressing a research question or knowledge gap of interest to scholarly communities. Typically, a COEX course would engage students in:

1. Research practices authentic to the discipline (e.g., by asking questions, using the tools of the discipline for gathering and analyzing data, developing and critiquing interpretations and arguments).

2. Discovery, or exploration of ill-structured questions where the outcome is not known to the students nor the instructor, and there is the potential for generating new knowledge or insights.
3. Creating work that has potential impact beyond the classroom (e.g., through reports for an outside organization, authorship or acknowledgement in a potential publication, blogs or podcasts distributed beyond the classroom).
4. Collaboration, such as group work, giving and receiving peer feedback, pooling data, and sharing interpretations.
5. Iteration, or processes of revision, learning from failure, and acknowledging and building on other students' work.

A complete list of each semester's COEX courses may be viewed in Courses@Brown by choosing "Collaborative Research and Scholarly Experiences" in the Curricular Programs field.

Community-Based Learning and Research

Community-Based Learning and Research (CBLR) courses connect academic inquiry with real-world learning experiences, enabling students to integrate and transfer their learning to contexts beyond the classroom. CBLR-designated courses: (i) Involve collaboration with one or more community partners to investigate an important social challenge or problem; (ii) Incorporate in-depth community-based experiences (typically undertaken outside of the classroom) into the learning and/or research objectives of the course; (iii) Provide structured opportunities for reflecting on the relationship between classroom learning and real-world experience, with the goals of deepening the understanding of course content and exploring questions of identity, agency, and social responsibility; and (iv) Create products or outcomes that are shared with the community partner and/or broader public.

A complete list of each semester's CBLR courses may be viewed in Courses@Brown by choosing "Community-Based Learning and Research" in the Curricular Programs field.

First Year Seminars

First-year seminars ensure close contact between first-year students and faculty members while simultaneously offering a rigorous introduction to the concepts and methods of a particular subject area or department. Seminars have few if any prerequisites and are offered in all areas of the curriculum, from anthropology to physics to literary arts. Students receive regular feedback on the work they produce for the seminars, and seminar faculty often serve as informal mentors for their students long after the class has ended.

A complete list of each semester's seminars may be viewed in Courses@Brown by choosing "First-Year Seminar" in the Curricular Programs field. Registration for first-year seminars takes place during the summer prior to students' matriculation to Brown. Depending on availability, first-year students may also add seminars to their course schedules during pre-registration and shopping periods.

Race, Power, and Privilege Courses

In their content and their objectives, Race, Power, and Privilege (RPP) courses examine issues of structural inequality, racial formations and/or disparities, and systems of power within a complex, pluralistic world.

RPP courses may investigate:

1. The ways different forms of power and privilege construct racial and identity formations in the U.S. and/or globally; the cultural, political, and intellectual responses to this racialization;
2. How categories of race and ethnicity are produced intersectionally in relation to other hierarchical structures of difference including gender, sexual orientation, class, religion, ability, citizenship status, and geography;
3. The structures, institutions, practices, and attitudes that enable, maintain, or mitigate domestic and/or global disparities in health, income, education outcomes, media representations, etc.;
4. The ways in which disciplinary structures of knowledge have been embedded in such historical formations as racism and colonialism.

Sophomore Seminars

Sophomore seminars bring together ideas, perspectives, and approaches that are not normally seen side by side in a given course or program. Embracing a range of intellectual perspectives, many of the seminars focus specifically on issues of social justice, identity, and difference. Limited to twenty students each, the seminars help students develop the skills, knowledge, and values they need to progress toward more advanced learning in a discipline or field.

A complete list of each semester's SOPH seminars may be viewed in Courses@Brown by choosing "Sophomore Seminar" in the Curricular Programs field.

Writing-Designated Courses

Brown students are expected to work on writing in their general studies and in the concentration. Students may begin to fulfill this expectation by taking at least one course that carries the WRIT designation. WRIT courses are offered across the curriculum and help students develop the ability to write well in styles appropriate to different academic disciplines.

A complete list of each semester's WRIT courses may be viewed in Courses@Brown by choosing "Writing-Designated Courses" in the Curricular Programs field.

Collaborative Research and Scholarly Experiences

Fall 2024

Biology

BIOL 0190R S01 10246 Phage Hunters, Part I Sarah E. Taylor
BIOL 0220 S01 18643 Discovering Novel Protein Fold William M. Holmes
BIOL 1515 S01 10291 Conservation in Genomics Age Tyler R. Kartzinell

Brown Arts Institute

ARTS 1800 S01 18688 ArtsCorps & The Future of Arts TBD

Engineering

ENGN 1860 S01 17929 Advanced Fluid Mechanics Kenny Breuer

Humanities

HMAN 1977B S01 17518 Foreign Policy Worlds Damien Mahiet

Urban Studies

URBN 1871A S01 17701 Heritage in the Metropolis Lauren E. Yapp

Spring 2025

Biology

BIOL 0190S S01 20217 Phage Hunters, Part II Sarah E. Taylor
BIOL 0285 S01 20228 Inquiry in Biochemistry Andrea Smith
BIOL 0285 S02 20229 Inquiry in Biochemistry Andrea Smith
BIOL 1555 S01 20221 Methods in Informatics and Data Elizabeth S. Chen

Community-Based Learning and Research

Fall 2024

Anthropology

ANTH 1300 S01 17370 Anthropology of Addictions Irene Glasser

Archaeology and Ancient World

ARCH 1900 S01 18535 Archaeology of College Hill Candace Rice

Brown Arts Institute

ARTS 1800 S01 18688 ArtsCorps & The Future of Arts TBD

Education

EDUC 0425 S01 18842 The Power of Translanguaging Tricia Kelly
EDUC 0515 S01 19156 Teaching LGBTQIA History John Palella

EDUC 0520 S01 17192 Adolescent Literature Laura A. Snyder
 EDUC 1190 S01 17196 Family Engagement in Education Yoko Yamamoto

English

ENGL 1160P S01 10302 Writing Climate, Writing Commu Kate J. Schapira
 ENGL 1180Z S01 18853 Healthcare Journalism Nell Lake

Environmental Studies

ENVS 0110 S01 10183 Humans, Nature and the Environ Leslie D Acton
 ENVS 1247 S01 17990 Clearing the Air Scott A. Frickel
 ENVS 1555 S01 17993 Local Food Systems & Urban Ag Dawn King

Ethnic Studies

ETHN 1000 S01 16675 Intro to Amercn/Ethnic Studies Kevin A. Escudero

French Studies

FREN 1410T S02 17684 L'experience des refugies Virginia A. Krause

International and Public Affairs

IAPA 1801F S01 17786 Prison Abolition as Policy John Eason

Public Health

PHP 1821 S01 17690 Incarceration,Disparities,Heal Bradley W. Brockmann

Sociology

SOC 1118 S01 18629 Context Research for Innov. Lisa DiCarlo

Urban Studies

URBN 1871A S01 17701 Heritage in the Metropolis Lauren E Yapp

Spring 2025

Anthropology

ANTH 1301 S01 26098 Anthropology of Homelessness Irene Glasser

Education

EDUC 0515 S01 25596 Teaching LGBTQIA History John Palella
 EDUC 1655 S01 25603 Human Dev & Education in East Yoko Yamamoto

English

ENGL 1050Z S01 26579 Audio/Video Storytelling Nell Lake
 ENGL 1051A S01 26695 The Art of the Interview TBD

Environmental Studies

ENVS 1421 S01 26148 Podcasting For the Common Good Megan Hall

Ethnic Studies

ETHN 0090A S01 26202 The Border/La Frontera Evelyn Hu-Dehart

Sociology

SOC 1120 S01 26062 Market and Social Surveys Carrie E. Spearin

First Year Seminars

Fall 2024

American Studies

AMST 0090A S01 18508 Sex, Work, and Migration Elena Shih

Anthropology

ANTH 0066J S01 17373 You Want to Change the World Daniel Smith

Archaeology and Ancient World

ARCH 0230 S01 18690 Myriad Mediterraneans Peter Van Dommelen

Biology

BIOL 0190F S01 10285 Darwinian Medicine Marc Tatar
 BIOL 0190P S01 10260 Pride/Prej Dev of Sci Theories Stephen L. Helfand
 BIOL 0190R S01 10246 Phage Hunters, Part I Sarah E. Taylor

Chemistry

CHEM 0080B S01 17560 Molecular Structrs in Chem/Bio Paul Gregory Williard

Classics

CLAS 0210B S01 17417 Death in Ancient Greece Pura Nieto Hernandez

Cognitive, Linguistic and Psychological Sciences

CLPS 0050B S01 10078 Two Visual Systems Fulvio Domini

Comparative Literature

COLT 0810L S01 18357 The Pursuit of Happiness Ourida Mostefai
 COLT 0811Z S01 18507 Paradise, Periphery, Prison Vangelis Calotychos

Data Science

DATA 0150 S01 19146 Data Detectives TBD

Earth, Environmental, and Planetary Science

EEPS 0160K S01 18988 Geology of Star Wars Emily Cooperdock
 EEPS 0160M S01 16693 Natural Disasters Colleen A. Dalton
 EEPS 0160R S01 19159 Geollywood: Geosciences in Hol Lina Perez-Angel

East Asian Studies

EAST 0140 S01 17232 Childhood and Culture in Japan Samuel E. Perry

Economics

ECON 0600 S01 18574 Gender in the Economy Kellie Forrester

English

ENGL 1191B S01 17613 Fugitive Letters Austin Jackson

Environmental Studies

ENVS 0070C S01 10184 Transcending Transptn Impacts Kurt Teichert

Ethnic Studies

ETHN 0090C S01 19148 Latinx Art Leticia Alvarado

French Studies

FREN 0720D S02 17923 Contes et identités Lewis C. Seifert

Hispanic Studies

HISP 0750N S01 17657 Muslims, Christians, and Jews Laura R. Bass

Italian Studies

ITAL 0960 S01 18043 Bella Ciao: Resistances in Con TBD

Judaic Studies

JUDS 0050A S01 19157 Believers, Agnostics, Atheists David C. Jacobson
 JUDS 0050P S01 16761 Synagogues, Churches, Mosques Katharina M Galor

Language Studies

LANG 0710 S01 18651 Protest and Dissidence in Iran Michelle Quay
 LANG 0750 S01 16753 Languages Contemporary Africa Victor Temitope Alabi

Literary Arts

LITR 0100A S01 17244 Introduction to Fiction TBD
 LITR 0100B S01 17245 Introduction to Poetry TBD
 LITR 0710 S01 17254 Writers on Writing Seminar Matthew Shenoda

Music

MUSC 0021J S01 17446 Stephen Sondheim and the Ameri Dana A. Gooley
 MUSC 0021M S01 18686 Music, Sport, Games, Play Joshua Tucker

Philosophy

PHIL 0061 S01 18790 Ethcl Themes Amer Short Story Felicia Nimue Ackerman
 PHIL 0200H S01 17172 Contemporary Ethical Issues Anna S. Bjurman Pautz

Political Science

POLS 0821C S01 18838 Political Violence Gabriella Levy
 POLS 0821E S01 17523 Money and Intl Politics Aditi Atul Sahasrabuddhe

POLS 0920K S01 18241 The Black Vote: A Critical Int Ainsley LeSure

Portuguese and Brazilian Studies

POBS 0810 S01 10241 Cross-Cultural Identities Patricia I. Sobral

Public Health

PHP 0060 S01 17706 First-Yr Seminar Global Health Nisha Trivedi

Religious Studies

RELS 0090A S01 17747 Women and Gender in Anc. Rel. Susan Ashbrook Harvey

RELS 0090B S01 18529 Indigenous Ecologies Mark Cladis

RELS 0090F S01 17759 Friendship in the Anc't World Saul Olyan

Russian

RUSS 0320E S01 18028 Crime and Punishment Vladimir Golstein

Sociology

SOC 0300I S01 17901 From Macro to Micro: Experienc Prudence Carter

SOC 0300K S01 17902 Inequalities and Health Susan Short

Theatre Arts and Performance Studies

TAPS 0800N S01 17300 The Semiotics of the Broadway Leon J A Hilton

Turkish

TKSH 0720A S01 16749 Modern Turkey Film&Lit Esra Ozdemir

Spring 2025

Applied Mathematics

APMA 0111 S01 26025 Data Science and Social Justic TBD

Economics

ECON 0160 S01 26511 Intro to Finance - Money, Mark Bradford Martin Gibbs

ECON 0400 S01 25975 Race and Inequality in America Glenn C. Loury

Engineering

ENGN 0120A S01 25461 Crssng Consumr Chasm by Desgn TBD

ENGN 0120B S01 25462 Crossing the Space Chasm TBD

English

ENGL 0151H S01 26648 Literature and the Sea Stuart Burrows

ENGL 0151J S01 25645 Intro to the Age of Dickens Kevin McLaughlin

Ethnic Studies

ETHN 0090A S01 26202 The Border/La Frontera Evelyn Hu-Dehart

History

HIST 0537A S01 26713 Popular Culture/Latin America Jennifer L. Lambe

Judaic Studies

JUDS 0050M S01 25436 Judaism and Christianity Adam J Teller

Literary Arts

LITR 0100A S01 25666 Introduction to Fiction TBD

LITR 0100B S01 25674 Introduction to Poetry TBD

LITR 0710 S01 25659 Writers on Writing Seminar Jacinda Townsend

Philosophy

PHIL 0090A S01 25575 Food and Philosophy Eric Guindon

Political Science

POLS 0820U S01 25343 Drug War Politics Peter R. Andreas

POLS 0821D S01 25873 How to Think in an Age of Pola David B Skarbek

Sociology

SOC 0300R S01 26059 The Sociology of Race Laura Lopez Sanders

SOC 0300X S01 26692 The Value of Nature Christopher M Rea

SOC 0300Y S01 26324 Gender at Work Ananda Martin-Caughey

Race, Power, and Privilege

Fall 2024

Africana Studies

AFRI 0090 S01 10238 An Intro to Africana Studies Francoise N. Hamlin

AFRI 0140 S01 18648 First Lady of the Struggle Noliwe Rooks

AFRI 0670 S01 18644 Global Black Radicalism Brian W E Meeks

AFRI 1060D S01 18770 The Harlem Renaissance Renee Ater

AFRI 1181 S01 18977 Black Women Visual Artists TBD

AFRI 1330 S01 10236 Africana Studies Junior Semina Keisha Blain

American Studies

AMST 0170E S01 16859 Race as Science Fiction Kiana Murphy

AMST 1611S S01 16672 US Popular Culture Richard Baldoz

AMST 1700P S01 16673 Making Music American Kiri M. Miller

Anthropology

ANTH 0066J S01 17373 You Want to Change the World Daniel Smith

ANTH 0300 S01 17363 Culture and Health Katherine A. Mason

ANTH 0800 S01 17362 Intro to Linguistic Anthro Joshua Babcock

Applied Mathematics

APMA 1910 S01 17764 Race & Gender in the Sciences Kristina Marie Mallory

Archaeology and Ancient World

ARCH 0230 S01 18690 Myriad Mediterraneans Peter Van Dommelen

Classics

CLAS 0765 S01 17418 Witches and Vixens Sasha-Mae Eccleston

Comparative Literature

COLT 0711R S01 18845 Indigenous Writing & Resist TBD

Earth, Environmental, and Planetary Science

EEPS 1615 S01 18950 Climate, Human Rights & Policy Amanda Lynch

Economics

ECON 1070 S01 17618 Race, Crime, and Punishment in Glenn C. Loury

ECON 1390 S01 17621 Inequality of Income, Wealth, David N. Weil

ECON 1530 S01 17778 Health, Hunger + the Household Andrew D. Foster

Education

EDUC 0300 S01 17188 Introduction to Education John P. Papay

EDUC 0515 S01 19156 Teaching LGBTQIA History John Palella

EDUC 0560 S01 17193 Cultivating STEM Identities Indira Gil

English

ENGL 0101G S01 18022 Bad, Mad, and Sad: Literatures Dixa Ramirez-D'Oleo

ENGL 0202D S01 17433 Poetic Justice: Literature on Thuy Chi Le

ENGL 0300M S01 10303 Medieval Gender Mariah Min

ENGL 0700E S02 16917 Postcolonial Literature Olakunle George

ENGL 1710K S02 16960 Literature and Poverty Rolland D. Murray

ENGL 1710P S02 17434 Lit and Culture of Black Power Rolland D. Murray

ENGL 1711N S01 10123 PlantationandWoodsinLit Dixa Ramirez-D'Oleo

Environmental Studies

ENVS 1615 S02 18951 Climate, Human Rights & Policy Amanda Lynch

Ethnic Studies

ETHN 0601A S01 16769 Intro to Asian American Hist Shelley Lee

ETHN 1000 S01 16675 Intro to Amercn/Ethnic Studies Kevin A. Escudero

ETHN 1200B S01 17687 Cont Indigenous Education TBD

ETHN 1200D S01 16674 Latinx Literature Ralph E. Rodriguez

Hispanic Studies

HISP 0550 S01 17650 Intermediate Spanish:Heritage Eva M. Gomez Garcia

History

HIST 0202 S01 17960 African Experiences of Empire Nancy J. Jacobs
 HIST 0253 S01 17801 Religion, Politics, Culture Linford D. Fisher
 HIST 1120 S01 17807 At China's Edges Rebecca A. Nedostup
 HIST 1320 S01 17814 Cuba, 1492-Present Jennifer L. Lambe
 HIST 1457 S01 18499 Understanding the Palestinians Beshara B. Doumani
 HIST 1553 S01 17810 Empires in America to 1890 Naoko Shibusawa
 HIST 1830B S01 17815 Sigmund Freud to Donald Trump Michael P. Steinberg
 HIST 1942A S01 18758 Taiwan's Geographies Rebecca A. Nedostup
 HIST 1964L S01 17852 Slavery in Early Modern Wo Adam J Teller
 HIST 1971D S01 17836 From Emancipation to Obama Francoise N. Hamlin
 HIST 1974U S01 18962 Incarceration in the Americas Daniel A. Rodriguez

International and Public Affairs

IAPA 1702G S01 17780 Governing Marginalized Groups Catherine Sirois
 IAPA 1702J S01 17783 (Racial) Pols of Natl Culture Sonia Planson
 IAPA 1801F S01 17786 Prison Abolition as Policy John Eason

Italian Studies

ITAL 1262 S01 17973 WomenGenderFeminism Caroline Castiglione

Judaic Studies

JUDS 0063 S01 16762 Antisemitism: A History Michael L. Satlow
 JUDS 1753 S01 18334 Blacks and Jews Rachel Rojanski

Language Studies

LANG 0150S S01 16744 Swahili I Jeremy Lehnen

Linguistics

LING 1512 S01 18967 Language and Ethnicity Chaya Nove

Modern Culture and Media

MCM 1205G S01 18937 Contemporary Black Popular Mus Alexander G Weheliye

Music

MUSC 0642 S01 17445 World Music Ensemble Martin K. Obeng
 MUSC 1240R S01 17467 Intro to Rap Songwriting Enongo A Lumumba-Kasongo

Nahuatl

NAHU 0100 S01 16754 Beginning Nahuatl Eduardo de la Cruz Cruz
 NAHU 0300 S01 16755 Intermediate Nahuatl Eduardo de la Cruz Cruz

Political Science

POLS 0920L S01 18344 Slavery and Freedom: Selection Melvin L Rogers
 POLS 1455 S01 18243 Crime, Punishment, and Politic David B Skarbek
 POLS 1520 S01 16832 Introduction to Feminist Theor Juliet Hooker
 POLS 1825S S01 18240 Latino Politics in the United Marques Zarate
 POLS 1825W S01 16855 Monuments, Citizenship, and Be Juliet Hooker

Public Health

PHP 1070 S01 18272 Global Burden of Disease Abigail D. Harrison
 PHP 1680I S01 17556 Disability/Health and Communtiy Sarah E. Skeels
 PHP 1920 S01 17533 Social Determinants of Health Diana Grigsby

Religious Studies

RELS 0600E S01 17769 Islamic Modernities Nancy Khalek

Science, Technology, and Society

STS 1700T S01 16939 Race, Gender, and Technology Xan Chacko

Sociology

SOC 0010 S01 17667 Introductory to Sociology Lisa DiCarlo
 SOC 0300I S01 17901 From Macro to Micro: Experienc Prudence Carter
 SOC 1490 S01 17908 Power, Knowledge and Justice Michael D. Kennedy

Urban Studies

URBN 0210 S01 17700 The City: Intro to Urban Study Lauren E Yapp
 URBN 1871A S01 17701 Heritage in the Metropolis Lauren E Yapp

Spring 2025

American Studies

AMST 0610A S01 26373 Black Queer Life Kiana Murphy
 AMST 1700S S01 25935 Native American Identity TBD

Anthropology

ANTH 0100 S01 26086 Intro to Cultural Anthropology Myles Lennon
 ANTH 1310 S01 26088 Anth Perspctv Global Health TBD
 ANTH 1320 S01 26101 Anthro + Internationl Devlpmnt Daniel Smith
 ANTH 1623 S01 26085 Archaeology of Death Patricia E. Rubertone
 ANTH 1940 S01 26625 Ethnographic Research Methods Joshua Babcock

Applied Mathematics

APMA 0111 S01 26025 Data Science and Social Justic TBD

Biology

BIOL 1820 S01 20269 Environmental Health + Disease Jessica S Plavicki

Chemistry

CHEM 1560R S01 26170 Reimagining Role of Chemists Jesse B Morin

Comparative Literature

COLT 0812X S01 26584 Culture Climate & Anthropocene TBD
 COLT 1310J S01 26353 The Arab Renaissance Elias I. Muhanna

Economics

ECON 0400 S01 25975 Race and Inequality in America Glenn C. Loury
 ECON 1310 S01 25956 Labor Economics Kenneth Chay

Education

EDUC 0515 S01 25596 Teaching LGBTQIA History John Palella
 EDUC 0610 S01 25600 Brown v. Board of Education Tracy L. Steffes

Engineering

ENGN 1820 S01 26289 Future of Work Banu Ozkazanc-Pan

English

ENGL 0202G S01 26587 Literatures of Racial Capitali Curtis Browne
 ENGL 0710V S01 25693 Death and Dying in Black Lit Kevin E Quashie
 ENGL 1030H S01 26652 Writing Black Popular Culture Austin Jackson
 ENGL 1711S S01 20003 James Baldwin Aliyyah Abdur-Rahman
 ENGL 1762Q S01 25441 Apartheid and the Literary Ima Olakunle George

Environmental Studies

ENVS 1232 S01 26147 Land Matters Mindi Schneider

Ethnic Studies

ETHN 1200C S01 25391 Introduction to Asian American Kevin A. Escudero
 ETHN 1750A S01 25388 Immigrant Social Movements Kevin A. Escudero
 ETHN 1751F S01 25390 Race in U.S. Cities & Suburbs Shelley Lee

History

HIST 0150J S01 26256 The Ocean in Global History Gabriel Rocha
 HIST 0203 S01 26186 Modern Africa Jennifer E. Johnson
 HIST 0255A S01 26193 Mexican American History Mark A Ocegueda
 HIST 0285A S01 26230 Modern Genocide + Other Crimes Omer Bartov
 HIST 0537A S01 26713 Popular Culture/Latin America Jennifer L. Lambe
 HIST 1032 S01 26139 South Africa: Apartheid/After Nancy J. Jacobs
 HIST 1381 S01 26227 Latin Amer History and Film Daniel A. Rodriguez
 HIST 1554 S01 26182 American Empire Since 1890 Naoko Shibusawa
 HIST 1970G S01 26267 AtlanticSlavery in Digital Age Linford D. Fisher
 HIST 1974P S01 26266 Modernity's Crisis:Jewish Hist Adam J Teller
 HIST 1977I S01 26258 Gen, Race, Med in Americas Daniel A. Rodriguez

International and Public Affairs

IAPA 1402 S01 26599 Contemporary Caribbean Patsy P. Lewis
 IAPA 1702C S01 26705 Inequality and Social Mobility Anya Bassett

Japanese

JAPN 0812 S01 25724 Japanese Language and Society Naemi McPherson

Judaic Studies

JUDS 0651 S01 25438 Race, Sexuality, and the Jews Katharina M Galor
JUDS 1753 S01 25439 Blacks and Jews Rachel Rojanski

Linguistics

LING 0530 S01 26726 Diversity in American Language Chaya Nove

Modern Culture and Media

MCM 1505P S01 26541 Channeling Race: Tv & Race in USA Lynne Joyrich

Music

MUSC 0642 S01 25845 World Music Ensemble Martin K. Obeng

Nahuatl

NAHU 0200 S01 26129 Beginning Nahuatl II Eduardo de la Cruz Cruz

Political Science

POLS 1821V S01 25358 Democracy and Inequality in Am Richard O. Snyder

Religious Studies

RELS 0012 S01 26013 Rel. Lives of Everyday People Kera Street
RELS 0290D S01 26017 Islamic Sexualities Nancy Khalek

Science, Technology, and Society

STS 0702 S01 25410 Invisible Labor Xan Chacko
STS 1700D S01 25412 Gathering Hope Xan Chacko

Sociology

SOC 0010 S01 26053 Introductory to Sociology Michael D. Kennedy
SOC 0300R S01 26059 The Sociology of Race Laura Lopez Sanders
SOC 1116 S01 26061 Criminal Courts and the Law Nicole Gonzalez Van Cleve
SOC 1270 S01 26063 Race, Class, Ethnicity Mdrn Wrld Jose Itzigsohn
SOC 1872O S01 26067 Critical Race Theory TBD
SOC 1873D S01 26597 Inequality of Infant Health Emily Rauscher

Theatre Arts and Performance Studies

TAPS 0800J S01 25874 Middle Eastern Theatre Mohammad Mehdi Kimiagari
TAPS 1280W S01 20032 Native Amer Indigenous Theatre Sarah dAngelo
TAPS 1281G S02 25983 Queer Dance J Dellecave
TAPS 1281O S02 25887 Acting Outside the Box Kym Moore
TAPS 1500P S01 20048 Asian American Theater Making Sophia Skiles
TAPS 1751 S01 26610 Choreodaemonics Sydney A. Skybetter

Urban Studies

URBN 0215 S01 25948 Urban Life in the Global South Lauren E Yapp
URBN 1000 S01 25946 Fieldwrk in the Urban Community Josh Pacewicz

Sophomore Seminars

Fall 2024

Africana Studies

AFRI 0670 S01 18644 Global Black Radicalism Brian W E Meeks

Biology

BIOL 0940A S01 10265 Viral Epidemics Walter J. Atwood
BIOL 0940D S01 10290 Rhode Island Flora: Local Plant Rebecca Y Kartzinzel

History

HIST 0657A S01 17811 Early American Lives Christopher Grasso

Political Science

POLS 0920L S01 18344 Slavery and Freedom: Selection Melvin L Rogers

Spring 2025

Education

EDUC 0610 S01 25600 Brown v. Board of Education Tracy L. Steffes

History

HIST 0658D S01 26268 Walden + Woodstock Kenneth S. Sacks
HIST 0690D S01 26302 U.S. Hist. of Dis, & Env. TBD

Writing-Designated Courses

Fall 2024

Africana Studies

AFRI 0090 S01 10238 An Intro to Africana Studies Francoise N. Hamlin
AFRI 0140 S01 18648 First Lady of the Struggle Noliwe Rooks
AFRI 1330 S01 10236 Africana Studies Junior Semina Keisha Blain

American Studies

AMST 0090A S01 18508 Sex, Work, and Migration Elena Shih
AMST 0170E S01 16859 Race as Science Fiction Kiana Murphy
AMST 0601 S01 18316 Health/Healing in US History Debbie Weinstein
AMST 1700P S01 16673 Making Music American Kiri M. Miller

Anthropology

ANTH 0066J S01 17373 You Want to Change the World Daniel Smith
ANTH 0300 S01 17363 Culture and Health Katherine A. Mason
ANTH 1300 S01 17370 Anthropology of Addictions Irene Glasser
ANTH 1930 S01 17665 Anthropology Thesis Workshop Robert Preucel

Archaeology and Ancient World

ARCH 0420 S01 18692 Archaeologies of Greek Past Zachary Silvia
ARCH 0755 S01 18736 Ancient Engineering Tech. TBD
ARCH 1830 S01 18691 Fake! History of Inauthentic Felipe A. Rojas Silva
ARCH 1900 S01 18535 Archaeology of College Hill Candace Rice

Biology

BIOL 0940A S01 10265 Viral Epidemics Walter J. Atwood
BIOL 1300 S01 10272 Biomolecular Interactions Nicolas Lux Fawzi
BIOL 1515 S01 10291 Conservation in Genomics Age Tyler R Kartzinzel
BIOL 1575 S01 10251 Eval of Health Info Systems Hamish S Fraser

Chemistry

CHEM 0999 S01 17721 Chemistry and Art Li-Qiong Wang
CHEM 1560N S01 17727 Organometallic Chemistry Jerome R Robinson

Classics

CLAS 0210B S01 17417 Death in Ancient Greece Pura Nieto Hernandez
CLAS 1120G S01 17420 The Idea of Self Joseph Michael Pucci
CLAS 1210 S01 17421 Archaic Greek History Graham J. Oliver
CLAS 1320 S01 17422 Roman Hist II: Empire's Impact John P. Bodel

Cognitive, Linguistic and Psychological Sciences

CLPS 0010 S01 10082 Mind, Brain and Behavior Elena Festa
CLPS 1741 S01 18576 Social Neuroscience Oriel FeldmanHall
CLPS 1820 S01 17309 Language and the Brain Sheila E. Blumstein
CLPS 1960 S01 10119 Senior Seminar in BDS TBD

Comparative Literature

COLT 0810L S01 18357 The Pursuit of Happiness Ourida Mostefai

Computer Science

CSCI 1805 S01 18129 Computers, Freedom and Privacy Timothy H. Edgar
CSCI 1805 S02 18131 Computers, Freedom and Privacy Timothy H. Edgar

Contemplative Studies

COST 0067 S01 18789 Divine Drugs Finnian M. Moore-Gerety
COST 0526 S01 18792 This Whole World is OM: Mantra Finnian M. Moore-Gerety
COST 0535 S01 17767 Self Transformation Larson Difiori

Data Science

DATA 1150 S01 18117 Data Science Fellows Linda Clark

Earth, Environmental, and Planetary Science

EEPS 1240 S01 16699 Stratigraphy and Sedimentation TBD

EEPS 1615 S01 18950 Climate, Human Rights & Policy Amanda Lynch

East Asian Studies

EAST 1304 S01 17223 Crafting Early Modern China Kaijun Chen

Economics

ECON 1070 S01 17618 Race, Crime, and Punishment in Glenn C. Loury

ECON 1530 S01 17778 Health, Hunger + the Household Andrew D. Foster

Education

EDUC 1645 S01 17435 Moral Development + Education Jin Li

EDUC 1900 S01 17190 Senior Seminar Diane H Silva Pimentel

Engineering

ENGN 1010 S01 17059 The Entrepreneurial Process Daniel E. Warshay

ENGN 1010 S02 17060 The Entrepreneurial Process Fran Z Slutsky

ENGN 1010 S03 17061 The Entrepreneurial Process Jon E. Cohen

ENGN 1230 S01 17063 Instrumentation Design David A. Borton

ENGN 1800 S01 17078 Social Impact of Emerging Tech Arto V. Nurmikko

ENGN 1931P S01 17082 Energy and the Environment Indrek Kulaots

English

ENGL 0310A S02 10138 Shakespeare Connie Scozzaro

ENGL 1191B S01 17613 Fugitive Letters Austin Jackson

ENGL 1311G S01 17163 Shakespeare and Love James A. Kuzner

Environmental Studies

ENVS 0070C S01 10184 Transcending Transpnt Impacts Kurt Teichert

ENVS 1247 S01 17990 Clearing the Air Scott A. Frickel

ENVS 1615 S02 18951 Climate, Human Rights & Policy Amanda Lynch

ENVS 1825 S01 17994 Commodity Natures Mindi Schneider

ENVS 1911 S01 17995 Narrating the Anthropocene Bathsheba R Demuth

Ethnic Studies

ETHN 0090C S01 19148 Latinx Art Leticia Alvarado

ETHN 1200D S01 16674 Latinx Literature Ralph E. Rodriguez

French Studies

FREN 0600 S01 16713 Writing and Speaking French II Stephanie A Ravillon

FREN 0600 S02 16714 Writing and Speaking French II Stephanie A Ravillon

FREN 0600 S03 16715 Writing and Speaking French II Stephanie A Ravillon

FREN 0720D S02 17923 Contes et identités Lewis C. Seifert

FREN 1020B S01 18787 History of Romance Languages Ourida Mostefai

FREN 1040D S01 16717 Molière et son monde Lewis C. Seifert

FREN 1130G S01 17774 Modernismes poétiques David Wills

FREN 1410T S02 17684 L'expérience des refuges Virginia A. Krause

FREN 1710J S01 18061 Geopolitics and Identity Divid Maan Alsahoui

Gender and Sexuality Studies

GNSS 0120 S01 18147 Intro Gendr/Sexuality Studies Wendy Lee

GNSS 1990 S01 18155 Senior Seminar Helis Sikk

German Studies

GRMN 0500F S02 17243 20th Century German Culture Christian Wilhelm Bahjat Obst

GRMN 0500F S03 19013 20th Century German Culture Christian Wilhelm Bahjat Obst

GRMN 1340M S01 17283 Kafka's Writing Zachary Sng

GRMN 1441N S01 17437 Theater, Prosa, Film Thomas W. Kniesche

Hispanic Studies

HISP 0650 S01 17654 Advanced Spanish: Lit&Film Alejandra Rosenberg Navarro

HISP 0650 S02 17655 Advanced Spanish: Lit&Film David Lal Parsard

HISP 0750N S01 17657 Muslims, Christians, and Jews Laura R. Bass

History of Art and Architecture

HIAA 0023 S01 18460 The Arts of South Asia Holly M Shaffer

HIAA 0850 S01 18514 Modern Architecture Dietrich Neumann

HIAA 1721 S01 18477 Real and Unreal Landscapes Holly M Shaffer

History

HIST 0202 S01 17960 African Experiences of Empire Nancy J. Jacobs

HIST 0253 S01 17801 Religion, Politics, Culture Linford D. Fisher

HIST 0657A S01 17811 Early American Lives Christopher Grasso

HIST 1120 S01 17807 At China's Edges Rebecca A. Nedostup

HIST 1149 S01 17787 Imperial Japan Kerry Smith

HIST 1266C S01 17808 English History, 1529-1660 Tim Harris

HIST 1457 S01 18499 Understanding the Palestinians Beshara B. Doumani

HIST 1553 S01 17810 Empires in America to 1890 Naoko Shibusawa

HIST 1825H S01 17784 Science, Medicine, Technology Harold J. Cook

HIST 1963Q S01 18819 Sex, Power, and God Amy G. Remensnyder

HIST 1964I S01 17838 England w/outMonarchy1649-1660 Tim Harris

HIST 1964L S01 17852 Slavery in Early Modern Wo Adam J Teller

HIST 1965E S01 17841 Politics/Intellect 20thC Eur Holly A Case

HIST 1968A S01 17846 Approaches to the Middle East Beshara B. Doumani

HIST 1971D S01 17836 From Emancipation to Obama Francoise N. Hamlin

HIST 1976N S01 17844 History of Economic Thought Lukas B. Rieppel

HIST 1992 S01 17856 History Honors Workshop Emily A Owens

HIST 1994 S01 18505 History Honors Thesis Part II Emily A Owens

International and Public Affairs

IAPA 1701N S01 17282 Diplomacy, Isn't Lost John B Atwood

IAPA 1701N S02 17804 Diplomacy, Isn't Lost John B Atwood

IAPA 1701V S01 18014 Democratization Dawn Brancati

IAPA 1701X S01 18016 American Education Policy Anthony D. Levitas

IAPA 1702E S01 16781 Smart, Fluid, & Out of Control Na Fu

IAPA 1702F S01 16783 Political (dis)engagement Volha Biziukova

IAPA 1702G S01 17780 Governing Marginalized Groups Catherine Sirois

IAPA 1702H S01 16780 Politics Indust Transformation Yan Xu

IAPA 1702I S01 16779 Governanc Post-socialist China Shanni Zhao

IAPA 1702J S01 17783 (Racial) Pols of Natl Culture Sonia Planson

IAPA 1702K S01 18012 Pol Econ Green Transition Mathias Larsen

IAPA 1702L S01 18015 How Can Activists Change World Laura Acosta

IAPA 1801F S01 17786 Prison Abolition as Policy John Eason

IAPA 1801W S01 18956 Ntl Security, Innov, Congress TBD

IAPA 1801X S01 18957 Surveillance TBD

IAPA 1801Y S01 18959 The Politics of Regulation J. Nicholas Ziegler

IAPA 1802S S01 18637 Human Security, Response Adam Levine

IAPA 1803 S01 16956 Humanitarian Response David Polatty

IAPA 1804 S01 17610 Diplomacy, Crisis, War Tyler Jost

IAPA 1804A S01 16784 Iran and the Islamic Revolutio Stephen A. Kinzer

IAPA 1804D S01 18955 Legal Mthds for Public Policy Ari Gabinet

IAPA 1816A S01 16785 Senior Honors Seminar Anya Bassett

IAPA 1816A S02 16786 Senior Honors Seminar Claudia Elliott

Italian Studies

ITAL 0500 S01 18038 Advanced Italian I Cristina Abbona-Sneider

ITAL 0960 S01 18043 Bella Ciao: Resistances in Con TBD

ITAL 1262 S01 17973 WomenGenderFeminism Caroline Castiglione

Judaic Studies

JUDS 0050A S01 19157 Believers, Agnostics, Atheists David C. Jacobson

JUDS 0050P S01 16761 Synagogues, Churches, Mosques Katharina M Galor

JUDS 0608 S01 16764 Jewish-Christian Partings Jae Hee Han

JUDS 1630 S01 16766 The Talmud Michael L. Satlow

JUDS 1753 S01 18334 Blacks and Jews Rachel Rojanski

Korean

KREA 0500 S01 16977 Advanced Korean Hye-Sook Wang

Language Studies

LANG 0710 S01 18651 Protest and Dissidence in Iran Michelle Quay

LANG 0800 S01 16745 Intercultural Competence Katherine I Kang

Linguistics

LING 1512 S01 18967 Language and Ethnicity Chaya Nove

Literary Arts

LITR 0310O S01 17261 Narrative Nonfiction Francesca Mari
LITR 0710 S01 17254 Writers on Writing Seminar Matthew Shenoda
LITR 1010A S01 17249 Advanced Fiction Lucy B Ives
LITR 1010B S01 17520 Advanced Poetry Eleni A Sikelianos
LITR 1010E S01 17260 Advanced Screenwriting Laura E. Colella
LITR 1010H S01 17257 Advanced Digital & Cross-Disci John H. Cayley
LITR 1151Q S01 17272 Great Adventure Colin C D Channer
LITR 1230Y S01 17519 Structuring/De-Structuring Nvl Karan Mahajan
LITR 1231E S01 17258 Rereading Writing John H. Cayley
LITR 1231J S01 17287 Histories Laird B Hunt

Middle East Studies

MES 1051 S01 18761 Isr-Pal: Public Humanities Katharina M Galor

Modern Culture and Media

MCM 0150 S01 18551 Text/Media/Culture Ariella Azoulay
MCM 0903E S01 18933 Capitalism, Comput + Era of AI Lachlan John Kermode

Music

MUSC 0021J S01 17446 Stephen Sondheim and the Ameri Dana A. Gooley

Philosophy

PHIL 0010 S01 17167 The Place of Persons David P. Christensen
PHIL 0021 S01 18705 Living the Sage Life TBD
PHIL 0061 S01 18790 Ethcl Themes Amer Short Story Felicia Nimue Ackerman
PHIL 0200H S01 17172 Contemporary Ethical Issues Anna S. Bjurman Pautz
PHIL 0560 S01 17170 Political Philosophy David Estlund
PHIL 0990F S01 17176 Perception Adam R. Pautz

Polish

PLSH 1050 S01 18322 Polish Cinema TBD

Political Science

POLS 1820G S01 16836 Politics and Nature Sharon R. Krause
POLS 1820H S01 16837 Contraband Capitalism Peter R. Andreas
POLS 1821I S01 16835 Issues in Democratic Theory Corey L. Brettschneider
POLS 1821M S01 16838 War in Film and Literature Rose McDermott
POLS 1822W S01 16840 Congressional Investigations Jeffrey S Robbins
POLS 1910 S01 16846 Senior Honors Thesis Preparatn Alexander H. Gourevitch

Portuguese and Brazilian Studies

POBS 0105 S01 10230 Accelerated Portuguese Patricia I. Sobral
POBS 0400 S01 10231 Writing + Speaking Portuguese Patricia I. Sobral
POBS 0810 S01 10241 Cross-Cultural Identities Patricia I. Sobral

Public Health

PHP 0060 S01 17706 First-Yr Seminar Global Health Nisha Trivedi
PHP 1070 S01 18272 Global Burden of Disease Abigail D. Harrison
PHP 1910 S01 18130 Public Health Senior Sem Lauren Bohlen
PHP 1910 S02 18132 Public Health Senior Sem Nisha Trivedi

Religious Studies

RELS 0067 S01 18791 Divine Drugs Finnian M. Moore-Gerety
RELS 0090A S01 17747 Women and Gender in Anc. Rel. Susan Ashbrook Harvey
RELS 0090F S01 17759 Friendship in the Anc't World Saul Olyan
RELS 0526 S01 18793 This Whole World is OM: Mantra Finnian M. Moore-Gerety
RELS 0535 S01 17766 Self Transformation Larson Difiori
RELS 0600E S01 17769 Islamic Modernities Nancy Khalek
RELS 1000 S01 17770 Methods in Religious Studies Kera Street
RELS 1445 S01 17830 Sinners and Seers in Japanese Janine T Anderson Sawada
RELS 1995 S01 17831 Senior Capstone Seminar Jason A Protass

Russian

RUSS 0320E S01 18028 Crime and Punishment Vladimir Golstein
RUSS 1550 S01 17997 Beyond The Kremlin: Rus Cul+Pol Fabrizio Fenghi
RUSS 1660 S01 17996 Sexuality and Revolution Fabrizio Fenghi

RUSS 1895 S01 18509 Bakhtin and Formalism Michal Oklot

Science, Technology, and Society

STS 1900 S01 16940 Sr Sem in Science and Society Xan Chacko

Sociology

SOC 0300K S01 17902 Inequalities and Health Susan Short
SOC 1010 S01 17898 Classical Sociological Theory Andrew M. Schrank

South Asian Studies

SAST 0067 S01 18834 Divine Drugs Finnian M. Moore-Gerety
SAST 0526 S02 19020 This Whole World is OM Finnian M. Moore-Gerety

Theatre Arts and Performance Studies

TAPS 0100 S01 10042 Playwriting I TBD
TAPS 0100 S02 10043 Playwriting I Brian Dang
TAPS 0200 S01 10049 Playwriting II Julia Fay Zimmerman

University Courses

UNIV 1110 S01 17110 Problem Solving & Teaching Christina Smith

Urban Studies

URBN 0210 S01 17700 The City: Intro to Urban Study Lauren E Yapp
URBN 1870D S01 17703 Downtown Development Robert E. Azar
URBN 1871A S01 17701 Heritage in the Metropolis Lauren E Yapp

Visual Art

VISA 1800C S01 18594 Honors Seminar Theresa Claire Ganz
VISA 1800G S01 18595 Junior Seminar in Visual Art Becci Davis

Spring 2025

American Studies

AMST 1905N S01 25384 War + Mind in Modern America Debbie Weinstein
AMST 1906U S01 26121 Culture as History Samuel Zipp

Anthropology

ANTH 0100 S01 26086 Intro to Cultural Anthropology Myles Lennon
ANTH 1311 S01 26099 Language and Medicine Katherine A. Mason
ANTH 1930 S01 26103 Anthropology Thesis Workshop Robert Preucel
ANTH 1940 S01 26625 Ethnographic Research Methods Joshua Babcock

Applied Mathematics

APMA 0111 S01 26025 Data Science and Social Justic TBD
APMA 1930P S01 26232 Mathematics and Climate Mara Freilich

Archaeology and Ancient World

ARCH 0775 S01 26490 Foodways + Gastro-Politics Kathleen Forste

Biology

BIOL 0285 S01 20228 Inquiry in Biochemistry Andrea Smith
BIOL 0285 S02 20229 Inquiry in Biochemistry Andrea Smith
BIOL 1150 S01 20249 Stem Cell Engineering Eric M. Darling
BIOL 1610 S01 26123 Experimental Neurobiology TBD
BIOL 1810 S01 20242 21st Century Applications in Michelle Rose Dawson

Chemistry

CHEM 0500 S01 26160 Inorganic Chemistry Matthew James Lueckheide
CHEM 1450 S01 26167 Advanced Organic Chemistry Benjamin R McDonald

Cognitive, Linguistic and Psychological Sciences

CLPS 1480B S01 20055 Cognitive Aging and Dementia Elena Festa

Comparative Literature

COLT 0510K S01 26350 The 1001 Nights Elias I. Muhanna
COLT 0812X S01 26584 Culture Climate & Anthropocene TBD
COLT 1440U S01 26355 The Listener (Literature, Theo Peter Szendy
COLT 1815F S01 26357 Memory, Commemoration, Testimo Susan Bernstein

Earth, Environmental, and Planetary Science

EEPS 0240 S01 26309 Earth:Evoltn of Habitbl Planet Timothy D. Herbert
EEPS 1520 S01 26307 Ocean Circulation and Climate Baylor Fox-Kemper

East Asian Studies

EAST 0305 S01 25632 An Intro to Lit of 20thC China Lingzhen Wang

Economics

ECON 1200 S01 25955 History of Economic Thought Emily C Skarbek
ECON 1355 S01 25959 Environ Issues in Development Andrew D. Foster
ECON 1430 S01 25962 The Economics of Social Policy Emily F. Oster

Education

EDUC 0610 S01 25600 Brown v. Board of Education Tracy L. Steffes

Engineering

ENGN 0120A S01 25461 Crssng Consumr Chasm by Desgn TBD
ENGN 0120B S01 25462 Crossing the Space Chasm TBD
ENGN 0620 S01 25473 Design Brief Daniel Harris
ENGN 1010 S01 25482 The Entrepreneurial Process Daniel E. Warshay
ENGN 1010 S02 25483 The Entrepreneurial Process Hamzah A. Ansari
ENGN 1520 S01 25495 Cardiovascular Engineering Kareen L K Coulombe

English

ENGL 0310A S01 25565 Shakespeare James A. Kuzner
ENGL 1030G S01 20101 Backstory Edward Hardy
ENGL 1030H S01 26652 Writing Black Popular Culture Austin Jackson
ENGL 1190X S02 20265 Nonfiction Now Michael H. Stewart

Environmental Studies

ENVS 1805 S01 26192 Ocean Governance Leslie D Acton
ENVS 1823 S01 26534 Climate Discourse and Power Rachel Wetts
ENVS 1925 S01 26196 Energy Policy and Politics Dawn King
ENVS 1926 S01 26197 Rethinking Chemical Env. Scott A. Frickel

Ethnic Studies

ETHN 0090A S01 26202 The Border/La Frontera Evelyn Hu-Dehart

German Studies

GRMN 0400 S01 25651 Intermediate German II Jonathan B Fine
GRMN 0400 S02 25652 Intermediate German II Jonathan B Fine
GRMN 0600B S01 25653 Was ist Deutsch? Christian Wilhelm Bahjat Obst

History

HIST 0285A S01 26230 Modern Genocide + Other Crimes Omer Bartov
HIST 0286A S01 26238 History of Medicine I Harold J. Cook
HIST 0537A S01 26713 Popular Culture/Latin America Jennifer L. Lambe
HIST 0658D S01 26268 Walden + Woodstock Kenneth S. Sacks
HIST 1032 S01 26139 South Africa: Apartheid/After Nancy J. Jacobs
HIST 1101 S01 26191 Chinese Political Thought Cynthia J. Brokaw
HIST 1155 S01 26181 Japan's Pacific War: 1937-1945 Kerry Smith
HIST 1262M S01 26231 Truth on Trial Caroline Castiglione
HIST 1266D S01 26188 British History, 1660-1800 Tim Harris
HIST 1962F S01 26693 Assembling Chinese History Rebecca A. Nedostup
HIST 1970F S01 26240 Early American Money Seth E. Rockman
HIST 1974P S01 26266 Modernity's Crisis: Jewish Hist Adam J Teller
HIST 1977I S01 26258 Gen, Race, Med in Americas Daniel A. Rodriguez
HIST 1992 S01 26269 History Honors Workshop Emily A Owens
HIST 1994 S01 26312 History Honors Thesis Part II Emily A Owens

International and Public Affairs

IAPA 1402 S01 26599 Contemporary Caribbean Patsy P. Lewis
IAPA 1702C S01 26705 Inequality and Social Mobility Anya Bassett
IAPA 1801D S01 26721 Politics & Journalism Edward Dove
IAPA 1810 S01 26608 Democ and Autocratization Claudia Elliott

Italian Studies

ITAL 0600 S01 26280 Advanced Italian II Cristina Abbona-Sneider

Japanese

JAPN 0812 S01 25724 Japanese Language and Society Naemi McPherson

Judaic Studies

JUDS 0050M S01 25436 Judaism and Christianity Adam J Teller
JUDS 0060 S01 25437 The Bible and Moral Debate Saul Olyan
JUDS 0651 S01 25438 Race, Sexuality, and the Jews Katharina M Galor
JUDS 1753 S01 25439 Blacks and Jews Rachel Rojanski

Language Studies

LANG 0760 S01 25570 Lang/Film/Africa Victor Temitope Alabi
LANG 0800 S01 25567 Intercultural Competence Esra Ozdemir

Linguistics

LING 1870 S01 25882 Linguistic Field Methods Scott H AnderBois

Literary Arts

LITR 0710 S01 25659 Writers on Writing Seminar Jacinda Townsend
LITR 1010A S01 25661 Advanced Fiction Lanre Akinsiku
LITR 1010B S01 25662 Advanced Poetry Peter Gale Nelson
LITR 1151I S01 25676 Remaster + Remix Colin C D Channer
LITR 1151X S01 25696 Interdisciplinary Arts Workshop Sawako Nakayasu

Mathematics

MATH 1000 S01 26198 The Art of Writing Mathematics Jordan A Kostiuik

Modern Culture and Media

MCM 0230 S01 26512 Digital Media Jinying Li
MCM 0260 S01 26525 Cinematic Coding/Narrativity TBD
MCM 1505P S01 26541 Channeling Race: Tv&Race in USA Lynne Joyrich

Neuroscience

NEUR 1040 S01 20081 Introduction to Neurogenetics Karla Kaun
NEUR 1600 S01 20084 Experimental Neurobiology John J. Stein

Persian

PRSN 0720 S01 26140 Modern Iran Michelle Quay

Philosophy

PHIL 0210 S01 25576 Early Modern Philosophy Justin Broackes
PHIL 1012 S01 25587 Climate Ethics Anna S. Bjurman Pautz
PHIL 1440 S01 25588 The Nature of Morality James Dreier
PHIL 1775 S01 25581 Philosophy of Quantum Mechancs Elizabeth Miller

Physics

PHYS 0560 S01 20165 Experiments in Modern Physics TBD
PHYS 1560 S02 20172 Modern Physics Laboratory TBD
PHYS 1600 S01 20183 Computational Physics TBD
PHYS 1600 S02 26329 Computational Physics TBD

Political Science

POLS 0820U S01 25343 Drug War Politics Peter R. Andreas
POLS 1820D S01 25356 Civil Liberties:Moral,Politicl Corey L. Brettschneider
POLS 1820O S01 25365 Adam Smith Melvin L Rogers
POLS 1821V S01 25358 Democracy and Inequality in Am Richard O. Snyder
POLS 1822G S01 25380 The Political Economy of Hard Aditi Atul Sahasrabuddhe
POLS 1822U S01 25360 War and Human Rights Nina Tannenwald
POLS 1824O S01 25364 Democracy Deva Woodly
POLS 1920 S01 25366 Senior Honors Thesis Preparatn Alexander H. Gourevitch

Religious Studies

RELS 0012 S01 26013 Rel. Lives of Everyday People Kera Street
RELS 0045 S01 26015 Buddhism and Death Jason A Protass
RELS 0290D S01 26017 Islamic Sexualities Nancy Khalek
RELS 0290H S01 26018 Defense Against the Dark Arts Jae Hee Han
RELS 1325C S01 26019 The Virgin Mary Susan Ashbrook Harvey

Russian

RUSS 1840 S01 26363 Nabokov Michal Oklot

RUSS 1857 S01 26484 Russian Intellectual History Michal Oklot
RUSS 1860 S01 26223 Chekhov Svetlana Evdokimova

Science, Technology, and Society

STS 0702 S01 25410 Invisible Labor Xan Chacko
STS 1000 S01 25429 Theories and Controversies Lukas B. Rieppel
STS 1700D S01 25412 Gathering Hope Xan Chacko

Sociology

SOC 1020 S01 26055 Methods of Social Research Jose Itzigsohn
SOC 1315 S01 26057 Macro-Organizational Theory John B Diamond
SOC 1873D S01 26597 Inequality of Infant Health Emily Rauscher
SOC 1950 S01 26058 Senior Seminar Carrie E. Spearin

Theatre Arts and Performance Studies

TAPS 0100 S01 20027 Playwriting I TBD
TAPS 0200 S01 20028 Playwriting II TBD
TAPS 1240 S01 20042 Perform Histrogrph/Theatr Hst Leon J A Hilton
TAPS 1250 S01 20043 Late Modern & Contemp Theatre Ivan Ramos
TAPS 1500H S01 20046 Advanced Playwriting Deborah Smith
TAPS 1751 S01 26610 Choreodaemonics Sydney A. Skybetter

University Courses

UNIV 0400 S01 20250 Literature of C.S. Lewis Timothy P. Flanigan
UNIV 0400 S02 20251 Literature of C.S. Lewis Edward Wing
UNIV 0400 S03 20252 Literature of C.S. Lewis Timothy P. Flanigan
UNIV 1003 S01 25440 Jerusalem,Jews,Christns,Muslims Katharina M Galor

Urban Studies

URBN 1000 S01 25946 Fieldwrk in the Urban Communtty Josh Pacewicz
URBN 1870T S01 25949 Transportation: Planning Persp Robert E. Azar
URBN 1871G S01 25947 Urban Asia Lauren E Yapp
URBN 1943 S01 25950 Real Estate Dev Process Jon E. Cohen

Course Descriptions

Africana Studies

AFRI 0090. An Introduction to Africana Studies.

This course introduces students to the vibrant and contested field of Africana Studies by critically exploring and analyzing the links and disjunctures in the cultural, political, and intellectual practices and experiences of people of African descent throughout the African diaspora. Beginning with a critical overview of the history, theoretical orientations, and multiple methodological strategies of the discipline, the course is divided into three thematic units that examine intellectuals, politics, and movements; identity construction and formation; and literary, cultural, and aesthetic theories and practices in the African diaspora.

Fall AFRI0090 S01 10238 TTh 1:00-2:20(06) (F. Hamlin)

AFRI 0140. First Lady of the Struggle: Mary McLeod Bethune and Global Black Freedom.

This course will focus on the life and legacy of Mary McLeod Bethune through an examination of her activism in the areas of education, politics, women's rights issues, civil rights issues, and world affairs. Throughout the course of her 79 years, she rose from humble beginnings in South Carolina, the daughter of formerly enslaved parents, to work with presidents and world leaders. She was born during the period of Reconstruction, and passed away the same year as the ruling of Brown vs. Board of Education was made, which will allow for a study of her participation in laying the foundation for the Modern Civil Rights Movement. Students will also gain experiential learning by visiting historic sites which preserve the legacy of Bethune, including the Mary McLeod Bethune Council House-National Historic Site and the Carter G. Woodson Home-National Historic Site.

Fall AFRI0140 S01 18648 TTh 11:00-12:20 (N. Rooks)

AFRI 0160. Twentieth-Century Africa.

An introduction to recent African history, the course combines chronological and topical approaches. It is organized around the major epochs of colonialism, decolonization and post-colonial independence, but within those periods, we will concentrate on themes such as health, environment, development, the state and artistic expression. Readings draw heavily on primary sources. Three exams and two projects, including group work.

Fall AFRI0160 S01 18696 TTh 9:00-10:20(05) (K. Gallon)

AFRI 0670. Global Black Radicalism.

The decade from the mid-Sixties until the mid-Seventies witnessed the rise of Black Radicalism as a global phenomenon. The emergence of Black Power in the US, Brazil and the Caribbean, the consolidation of liberation struggles in Portuguese Africa and the rise of a Black Consciousness trend in Apartheid South Africa all represent key moments. What led young activists to embrace "Black Power"? What led to the emergence of Marxist movements in Portuguese Africa? What events in the Caribbean gave ascendancy to radical tendencies? And what forces contributed to the decline of these movements? This course seeks to answer these questions.

Fall AFRI0670 S01 18644 Th 4:00-6:30(04) (B. Meeks)

AFRI 1060D. The Harlem Renaissance: Art, Literature, and Classic Women Blues.

In this undergraduate course, we will focus on the Harlem Renaissance, also known as the New Negro Movement, the important African American artistic and socio-cultural moment that dates roughly from 1919-1934. Organized as an interdisciplinary course, we will examine the historical context of the period; the literature including novels by Jean Toomer and Nella Larsen; the art including the painting of Aaron Douglas, the sculpture of Richmond Barthé, and the photography of James Van Der Zee; and classic female blues with a focus on the music and lyrics of Gertrude "Ma" Rainey and Bessie Smith. We will also read a range of writers from the period including Marita O. Bonner, W. E. B. Du Bois, Marcus Garvey, Langston Hughes, Zora Neale Hurston, Alain Locke, Elise Johnson McDougald, and George S. Schuyler.

Fall AFRI1060D S01 18770 T 4:00-6:30(07) (R. Ater)

AFRI 1090. Black Freedom Struggle Since 1945.

Lecture course that examines the extended history of the mass civil rights movement in the U.S. Starting at World War II, we consider the roles of the courts, the federal and state governments, organizations, local communities, individuals and various activist strategies in the ongoing struggle for African American equality, focusing on African American agency, particularly in the South, but also in Boston, Mass. Sources include photographs, documentaries, movies, letters, speeches, autobiographies, and secondary readings. Requirements: Weekly readings, documentary viewings, 4 short papers, 2 exams.

Spr AFRI1090 S01 20188 Arranged (F. Hamlin)

AFRI 1170. African American Women's History.

This course examines the cultural, economic, political and social history of Black women in the United States from slavery to the present. Through a variety of secondary and primary sources, film and other multimedia, the course explores the myriad ways that African American women have experienced and resisted the "double burden" of racism and sexism in United States history. The course will consider the legacy of slavery and how African American women have defined their own identities as individuals, wives, mothers, community leaders, activists and theorists. Paying careful attention to their diverse experiences, the course will examine Black women's participation and leadership in a variety of institutions, organizations and social movements. Major course themes include labor, politics, internationalism, religion and family.

Spr AFRI1170 S01 20187 Arranged (K. Blain)

AFRI 1181. Black Women Visual Artists Global Contemporary Art in the United States.

This class examines Black women visual artists of the African Diaspora who are based in the United States and are part of the global contemporary art scene. We will study how race, gender, sexuality, and ethnicity have forged and continued to shape Black female identity and creative production. The course is organized around three themes: (re)presenting the Black female body; globalization and migration; and performing/visualizing self and community.

Fall AFRI1181 S01 18977 W 3:00-5:30(10) 'To Be Arranged'

AFRI 1330. Africana Studies Junior Seminar.

This junior seminar course is designed to support students' growth as academic writers and will prepare them to better complete their culminating senior thesis projects. While specifically geared towards Africana Studies concentrators, the class is open to any undergraduate student who has successfully completed AFRI 0090: An Introduction to Africana Studies and at least four semesters of coursework overall towards the Bachelor's degree. Course materials will delve deeply into the history, spaces, peoples and cultures of the African Diaspora, exploring a selection of critical writings, performance pieces, fiction and non-fiction works by leading scholars and artists.

Fall AFRI1330 S01 10236 TTh 10:30-11:50(13) (K. Blain)

AFRI 1360. Africana Studies: Knowledge, Texts and Methodology.

This course will explore the issues of Africana Studies as a discipline by engaging in a series of critical readings of the central texts, which laid the protocols of the discipline. The course will also raise issues of knowledge production and methodologies. This course is a senior capstone seminar. Open to all senior Africana Studies concentrators; others by instructor permission only. Enrollment limited to 25.

Spr AFRI1360 S01 20189 Arranged 'To Be Arranged'

AFRI 1970. Independent Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

AFRI 2303. Black Feminism and the Politics of Care.

"caring for myself is not self-indulgence, it is self-preservation, and that is an act of political warfare" (Audre Lorde) This course focuses on Black feminist thought through the lens of care as both theory and lived experience from the late twentieth century to the present. Care in the context of the course is a radical epistemology and praxis that might be defined as, in the words of Aisha K. Finch "to be about the business of living with people, sharing in and amplifying their life force, recognizing their value and worth." Through the critical examination of a number of texts, the course will examine the multifaceted concept and practice of

care in Black people's lives as a contest against state power and a means of survival and joy.

Fall AFRI2303 S01 18697 M 3:00-5:30(03) (K. Gallon)

AFRI 2450. Exchange Scholar Program.

Fall AFRI2450 S01 16525 Arranged 'To Be Arranged'

AFRI 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall AFRI2970 S01 16526 Arranged 'To Be Arranged'

Spr AFRI2970 S01 25196 Arranged 'To Be Arranged'

AFRI 2980. Graduate Level Independent Reading and Research.

A program of intensive reading and research. Section numbers may vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

AFRI 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall AFRI2990 S01 16527 Arranged 'To Be Arranged'

Spr AFRI2990 S01 25197 Arranged 'To Be Arranged'

AFRI XLIST. Courses of Interest to Concentrators in Africana Studies.

American Studies

American Studies

AMST 0090A. 7 Hours and 55 Minutes: Sex, Work, and Migration in Global Contexts.

Diving into global debates, surround gender, sex, migration, and labor, this course considers forms of work that are inflected by race, gender, class, nation, and ability. Our course title, "7 Hours and 55 Minutes," draws its inspiration from an advocacy game developed by the Empower Foundation, Thailand's first sex worker rights organization. The game asks participants to consider Thai sex worker understandings of sex work, within the context of an 8 hour working day. It examines how the global legal and civilian regulation of gendered bodies is met with vital forms of resistance and community organizing. Each week, our seminar will explore one book, article, documentary film, cultural artifact, or the mixed media artistic productions.

Fall AMST0090AS01 18508 M 3:00-5:30(03) (E. Shih)

AMST 0170E. Black to the Future: Race as Science Fiction.

Charting an interdisciplinary path, this course will teach students literary and visual analysis through fiction, film, comics, and graphic novels to explore debates in the 20th and 21st century around how to read blackness. What is the relationship between the history of African Americans and the speculative genre? What tools does it afford African American writers and artists that other genres of fiction do not? How does Black science fiction in both literary and visual form, teach us how to see and read blackness otherwise? Key artists include George Schuyler, W.E.B. DuBois, N.K. Jemison, Janelle Monae, Octavia Butler, among others.

Fall AMST0170ES01 16859 TTh 10:30-11:50(13) (K. Murphy)

AMST 0601. Health and Healing in American History.

Surveys the history of American medicine in its social and political contexts, including changing understandings of disease, treatment practices, and medical institutions. Focuses on how gender and race have informed how patients and healers have made sense out of pain and disease.

Fall AMST0601 S01 18316 MWF 11:00-11:50(16) (D. Weinstein)

AMST 0610A. Black Queer Life.

This course explores how Black writers and artists represent and theorize a diverse array of Black genders and sexualities. We will begin with a series of conversations on the origins of Black queer theory, and then use these conversations to anchor us in our readings of Black queer life in literary and popular culture. Reading across a range of genres, including film, music, poetry, comics, and short fiction, we will collectively consider the ways sex, gender, and sexuality work with other markers of difference and social status such as race, class, ability, and nationality to demarcate

possibilities, freedoms, choices, and opportunities available to Black people. We will learn from theorists, writers, and artists including Audre Lorde, Cathy Cohen, E. Patrick Johnson, Alexis Pauline Gumbs, Danez Smith, Janelle Monae, among many others.

Spr AMST0610AS01 26373 TTh 2:30-3:50(11) (K. Murphy)

AMST 1611S. US Popular Culture.

This course focuses on the relationship between popular culture, media, and society and provides an overview of social structures, content, audiences, and effects. The core mission of this class is to connect popular culture to the larger world in which it is produced and consumed. We examine the institutional and social contexts of cultural production and consumption in the United States. We will cover a variety of cultural forms (e.g. music, film, tv, and social media) and explore culture as an arena of conflict and a vehicle for social change. Other areas of focus include the meaning of aesthetics and style in daily life, cultural gatekeeping, and the role of social media platforms in shaping the production, distribution, and consumption of cultural texts/commodities.

Fall AMST1611SS01 16672 MWF 10:00-10:50(14) (R. Baldoz)

AMST 1700P. Making Music American: Critical Heritage Studies.

This seminar offers a critical and comparative exploration of American music genres that operate as "heritage music" or "ethnic music" in the context of American multiculturalism. We will collectively investigate how musical practice and related discourse can construct, express, perpetuate, and sometimes challenge various cultural identities, community affiliations, and political ideologies. We will particularly attend to public performance contexts, including music festivals, club dancefloors, and live-streaming/archived online performances. Case studies focus on rural Southern "folk" genres, Chicago blues and house, Asian American taiko ensembles, and norteño/tejano dance musics (from huapango to Selena). Readings draw on historical and ethnographic scholarship grounded in critical heritage studies and critical race theory. Limited to junior-year American Studies and Ethnic Studies concentrators.

Fall AMST1700FS01 16673 F 3:00-5:30(11) (K. Miller)

AMST 1700S. Native American Identity: Public Perception and Self-Determination.

This class examines the issues of Native American identity, primarily in the United States. The course will begin by studying historical tribal organization and classification, and the factors that have led to contemporary stereotypes and ideas of what constitutes an "Indian," and the factors that have damaged the strength and identity of Native communities over centuries. We will discuss how misconceptions have impacted media portrayals and the American understanding of when, where, and how Native people live. The final portion of the class will discuss self-identity and self-determination through a variety of areas such as tribal enrollment, academia, and media. This course is an American Studies/Ethnic Studies Junior Seminar and is open to AMST, ETHN, and CNAIS concentrators in their junior year. Other students may register with instructor permission.

Spr AMST1700SS01 25935 T 4:00-6:30(16) 'To Be Arranged'

AMST 1800. Honors Seminar.

This seminar is for second-semester junior American Studies and Ethnic Studies concentrators who are interested in writing an honors thesis in their senior year. The outcome of this course will be a proposal for the honors thesis along with a bibliography and a research plan and schedule. Topics covered will be the research methods associated with different disciplines; how to make the thesis interdisciplinary; integrating public projects and new media into a thesis. Open to juniors concentrating in American Studies and Ethnic Studies. Enrollment limited to 20. S/NC

Spr AMST1800 S01 25389 W 3:00-5:30(10) (E. Shih)

AMST 1901B. Form Matters: Contemporary Short Fiction.

Form Matters is an advanced seminar in reading contemporary short fiction, mainly centered on US writers. The class particularly focuses on socially-attuned and historically-minded neo-formalist analyses of literature. Fiction readings will be supplemented with relevant critical readings from both scholars and practicing writers. Students will be expected to engage in rigorous discussion of the material. Goals of the course include introducing you to a relevant critical vocabulary for discussing form, deepening your familiarity with contemporary US short fiction, and improving your oral and written communication skills.

Fall AMST1901BS01 16679 TTh 2:30-3:50(12) (R. Rodriguez)

AMST 1904K. Power + Water: Material Culture and its Environmental Impact.

Students explore material culture, its impact upon the environment in the US prior to Industrial Revolution and examine the relationship of this earlier production to current issues of pollution and climate change. In the 18-19th centuries, houses, furniture, whale products were staples of American craft and ingenuity. This material culture tells the story of how gathering raw materials and converting them into usable products came at a severe cost to watersheds, forests, species, humans. These examples show that the seemingly insatiable human urge to control/transform resources into items for consumption leads to serious consequences for the earth's climate and inhabitants.

Fall AMST1904KS01 18497 W 3:00-5:30(10) (R. Potvin)

AMST 1905N. War and the Mind in Modern America.

This course examines how the crucible of war has shaped modern conceptions of human nature. Moving from the Civil War to the present, we will consider questions such as changing theories of combat trauma, evolutionary and social scientific explanations for why people fight wars, and the role of memory in individual and collective understandings of violent conflicts. Students will analyze representations of war in film and literature in addition to reading historical and theoretical texts.

Spr AMST1905NS01 25384 M 3:00-5:30(13) (D. Weinstein)

AMST 1906U. Culture as History: Making the 20th Century United States.

This interdisciplinary course explores selected currents in U.S. cultural history from the late nineteenth century to the end of the twentieth century. Thematic explorations trace the historical development of American cultural forms and practices, showing how transformations in communications, media, and consumption shaped Americans' experience of capitalism and market expansion, ideas of self and society, social conflict around questions of race, class, gender, nationalism and empire, as well as immigration, migration, and social movements of both the left and right. Our broad goal will be to understand how culture came to shape how historical change unfolded in this period.

Spr AMST1906LS01 26121 Th 4:00-6:30(17) (S. Zipp)

AMST 1920A. Contemporary Narratives of US Slavery.

The antebellum African American slave narrative inaugurated Black self-representation in print. Characterized by scholars as neo-slave narratives and, later, post-neo slave narratives, contemporary fictions of US slavery deploy the formal features and thematic concerns of the slave narrative to reveal Black freedom dreams of later periods. Examining recent literary, filmic, and televisual representations of US slavery, this course foregrounds racial slavery in the establishment of longstanding socioeconomic and political asymmetries across race, gender, and class in the US. And it analyzes the ways in which imaginative depictions of racial slavery seek to address and ameliorate such asymmetries. Our class will pay particular attention to how contemporary Black writers and filmmakers thematize labor, love, gender, power, pleasure, community, and resistance among the enslaved and their descendants.

Fall AMST1920AS01 19149 TTh 1:00-2:20(06) (A. Abdur-Rahman)

AMST 1970. Independent Reading and Research.

Required of all honors candidates in the senior year. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. S/NC

AMST 2010. Introduction to American Studies.

Introduction to American Studies required of all first-year graduate students in American Studies. Graduate students from other departments may enroll with the permission of the instructor.

Fall AMST2010 S01 16680 F 9:00-11:30 (S. Lee)

AMST 2221B. Immigration and the Borders of US Empire.

Since the founding of the United States, we have debated and struggled over the boundaries of American nationhood, who may claim the rights and protections provided by the state, and where the lines of inclusion/exclusion are drawn. This course will focus on two interrelated themes. The first is the implementation of immigration and nationality controls designed to manage cross-border traffic and restrict membership in the national community. The second is to explore how the projection of US

power beyond its territorial borders (e.g. US empire) has fueled cross-border movement between metropole and colonial/postcolonial zones. We will highlight the ways in which the US's encroachment of borders outside its territorial domain raises important questions about the meaning and legitimacy of national sovereignty and the fashioning of immigrant "illegality."

Fall AMST2221ES01 16756 W 3:00-5:30(10) (R. Baldoz)

AMST 2221D. Tracked: Critical Surveillance Studies.

This graduate seminar investigates historical and contemporary technologies and practices of surveillance, drawing on the established field of Surveillance Studies as well as relevant literature in performance studies, media ethnography, software/platform studies, sociology of labor, and history of science. We will address confluences of moving bodies, disciplining technologies, and state power: for example, motion-sensing systems operating at scales ranging from individual fitness trackers to drone monitoring of refugee movements. Key topics include sousveillance, dataveillance/data bodies, racialized surveillance, algorithmic bias, surveillance art, and surveillance capitalism.

Spr AMST2221CS01 26370 M 3:00-5:30(13) (K. Miller)

AMST 2221G. Archive Theory: Imagining Absence Otherwise (HMAN 2401X).

Interested students must register for HMAN 2401X.

Fall AMST2221CS01 18781 Arranged 'To Be Arranged'

AMST 2450. Exchange Scholar Program.

Fall AMST2450 S01 16528 Arranged 'To Be Arranged'

AMST 2520. American Studies: Professional Issues in American Studies.

This course explores the mechanics of a doctorate degree in American Studies. We will explore the constitution of our field through the elaboration of field exam lists and narratives, query its pedagogical application in the design of undergraduate syllabi, and begin to outline and enact our participation in the profession both within and beyond the academy. At the end of this class, students will have constructed a portfolio that will assist their progress towards a degree and provide the tools with which to chart pathways once a degree is in hand. S/NC

Fall AMST2520 S01 16671 M 3:00-5:30(03) (D. Weinstein)

AMST 2540. Methods in Public Humanities.

This course surveys public humanities work, including cultural heritage preservation and interpretation, museum collecting and exhibition, informal education, and cultural development. It also provides an overview of the contexts of that work in nonprofit organizations, including governance, management, and development.

Spr AMST2540 S01 26369 TTh 2:30-3:50(11) (S. Lubar)

AMST 2660. Projects in Public Humanities.

Devoted to one or more advanced projects in Public Humanities not covered in detail by the regular courses. Projects in public humanities provide practical, hands-on project and group project management experience that is essential for careers in museums, historic preservation, and cultural agencies. Students will work with faculty advisor to project completion. Written permission and topic description required. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. This course is repeatable for credit. Prerequisite: AMCV 2650 or demonstrated ability of equivalent experience. Instructor permission required.

AMST 2920. Independent Reading and Research.

Section numbers vary by instructor. Search Banner by instructor name to find the correct section number and CRN to use when registering for this course. You will need instructor permission to register and the course may be repeated with different instructors. Open to American Studies graduate students only. S/NC

AMST 2921. Independent Reading and Research.

Section numbers vary by instructor. Search Banner by instructor name to find the correct section number and CRN to use when registering for this course. You will need instructor permission to register and the course may be repeated with different instructors. Open to American Studies graduate students only. S/NC

AMST 2922. Independent Reading and Research.

Section numbers vary by instructor. Search Banner by instructor name to find the correct section number and CRN to use when registering for this course. You will need instructor permission to register and the course may be repeated with different instructors. Open to American Studies graduate students only. S/NC

AMST 2923. Independent Reading and Research.

Section numbers vary by instructor. Search Banner by instructor name to find the correct section number and CRN to use when registering for this course. You will need instructor permission to register and the course may be repeated with different instructors. Open to American Studies graduate students only. S/NC

AMST 2950. Independent Reading and Research in Public Humanities.

For MA in Public Humanities Students who wish to do independent reading and research.

AMST 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	AMST2990	S01	16529	Arranged	'To Be Arranged'
Spr	AMST2990	S01	25198	Arranged	'To Be Arranged'

Ethnic Studies**ETHN 0090A. The Border/La Frontera.**

We will examine the historical formation, contemporary reality and popular representation of the U.S.-Mexico border from a bilingual (English-Spanish), multicultural (U.S., Mexican, and Latino), and transnational perspective within the framework of globalization. We will explore the construction of border communities, lives and identities on both sides of the international divide, and pay particular attention to the movement of peoples in both directions. We will read materials, watch films, and conduct class discussions in English and Spanish. Comfort and reasonable proficiency in Spanish is required, but native command is not necessary. Enrollment limited to 19 first year students.

Spr	ETHN0090A	S01	26202	W	3:00-5:30(10)	(E. Hu-Dehart)

ETHN 0090C. Latinx Art.

This in-person, discussion-based seminar serves as an introduction to contemporary US Latinx Art. How do we understand the category "Latinx Art" and its history? How have the expressive iterations of different communities reflected on community dynamics and politics? How do contemporary curatorial projects provide platforms to envision Latinx futures? Departing from the cultural expressions linked to US Latinx civil rights movements of the 1960s and 1970s, this class will dwell on diverse formal and thematic approaches and foci in contemporary US Latinx Art to reflect more broadly on the ideological impact of expressive culture. We will do so by studying the expressive culture of artists in the United States of Latin American descent as well as the interdisciplinary critical scholarship of art history and visual culture scholars. Attendance to relevant local exhibitions and artist talks will be encouraged.

Fall	ETHN0090C	S01	19148	W	3:00-5:30(10)	(L. Alvarado)

ETHN 0601A. Introduction to Asian American History.

This course provides an introduction to the histories of people of Asian descent in the United States from the late 18th century to the present. We will focus on the experiences of people with ancestries in East Asia, Southeast Asia, South Asia, and Central Asia, considering commonalities and differences by nationality, class, gender, religion, place, and other factors. Topics include orientalism in U.S. culture, immigration and exclusion, Asian American civil rights struggles, and the "model minority." We eschew any claim that an "authentic" or "typical" Asian American experience exists, instead working from the idea that Asian Americans and their lives are multifaceted, complex, and dynamic. Course materials will include primary and secondary sources and incorporate interdisciplinary scholarship and approaches while being anchored in history.

Fall	ETHN0601A	S01	16769	TTh	9:00-10:20(05)	(S. Lee)

ETHN 1000. Introduction to American/Ethnic Studies.

Considers the U.S. as a society whose unifying identity is rooted in ethnic and racial diversity. Explores the historical and contemporary experiences of racial and ethnic groups in this country and analyzes different forms

of representation of those experiences, as well as representations of the racial and ethnic stratification in the U.S. imagination.

Fall	ETHN1000	S01	16675	MWF	1:00-1:50(08)	(K. Escudero)

ETHN 1200B. Contemporary Indigenous Education in North America.

In the past, formalized schooling in Indigenous communities was a tool of colonization and cultural genocide, forcing Native peoples to assimilate to western norms, values, and knowledge. However, contemporary Indigenous communities have managed to reclaim and reshape education for Native youth, utilizing innovative methods and technologies, as well as drawing upon generations of traditional and indigenous knowledges to create environments that promote academic achievement alongside culture. In this course we will focus on the ways Native communities are asserting their educational sovereignty, through culturally-relevant/responsive curriculums, language immersion schools, indigenous charter schools, traditional ecological and scientific knowledges, and more.

Fall	ETHN1200B	S01	17687	T	4:00-6:30(07)	'To Be Arranged'

ETHN 1200C. Introduction to Asian American Studies.

This course provides an introduction to major issues and formative historical moments within the field of Asian American Studies. Course readings are highly interdisciplinary drawing from scholarship in history, literature, sociology and political science. This course spans multiple historical moments beginning in the mid-1800s and continuing through the present. Topics covered include Asian immigrant and refugee experiences, the movement for Asian American Studies, the construction of an Asian American pan-ethnic identity, community political mobilization and efforts to combat Islamophobia and anti-Asian violence.

Spr	ETHN1200C	S01	25391	MWF	10:00-10:50(03)	(K. Escudero)

ETHN 1200D. Latinx Literature.

This course will introduce students to a broad array of Latinx literature. While there is a long tradition of Latinx literature in the United States, we will focus primarily on a period from 1985 to the present. Aimed to familiarize students with debates in the field, the readings will also include critical essays. Enrollment limited to 15.

Fall	ETHN1200D	S01	16674	TTh	10:30-11:50(13)	(R. Rodriguez)

ETHN 1750A. Immigrant Social Movements: Bridging Theory and Practice.

What is the impact of legal status on the potential for undocumented individuals' participation in a social movement? Relatedly, how is the heterogeneity of movement participants represented in campaigns and political protest? In this course we will examine the undocumented immigrant movement in the United States today through readings, films and guest lectures from local immigrant rights activists. As part of the course students will be partnered with local community based organizations where they will complete a semester-long internship.

Spr	ETHN1750A	S01	25388	Th	4:00-6:30(17)	(K. Escudero)

ETHN 1751F. Race in U.S. Cities and Suburbs.

This undergraduate seminar explores U.S. urban and suburban histories during the twentieth and early twenty-first centuries, through the concerns of race and ethnicity. We seek to understand how dilemmas over and struggles for belonging and equality in the United States have played out in and over urban and suburban spaces. We will pay particular attention to the histories of segregation, housing discrimination, urban unrest, suburban integration, the rise of "ethnoburbs," and gentrification. Readings represent foundational texts and new directions in scholarship and provide in-depth examinations of particular urban and suburban communities. Topics include the simultaneous erasure and appropriation of Indigenous peoples in the development of Pacific Northwest cities; the Asian American "model minority" and integration of all-white suburbs; minority grassroots activism and resistance against redevelopment; racism and neoliberal urban governance in the 21st century. RPP

Spr	ETHN1751F	S01	25390	TTh	9:00-10:20(05)	(S. Lee)

ETHN 1890T. Writing Latinx Lives: The Memoir.

Writing Latinx Lives examines the boom over the last couple decades in Latinx memoirs. The course is interested in the rigorous analysis of life writing. What gets written? Who is writing it? What social, political, cultural trends are the writers in dialogue with? And so forth. We will read these memoirs along with critical analyses of the genre. I don't want us, that is,

to simply get lost in the stories these memoirs tell, but rather I want us to understand how those stories work and why they matter.

Spr ETHN1890TS01 26372 TTh 1:00-2:20(08) (R. Rodriguez)

ETHN 1900E. Senior Seminar in Ethnic Studies.

No description available.

Spr ETHN1900ES01 25413 M 3:00-5:30(13) (R. Baldoz)

ETHN 1910. Independent Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ETHN 1920. Senior Thesis.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Native American and Indigenous Studies

NAIS XLIST. Courses of Interest to Concentrators in Native American and Indigenous Studies.

Public Humanities

PHUM 2020. Methods in Public Humanities.

This course surveys public humanities work, including cultural heritage preservation and interpretation, museum collecting and exhibition, informal education, and cultural development. It also provides an overview of the contexts of that work in nonprofit organizations, including governance, management, and development.

Fall PHUM2020 S01 19018 Th 4:00-6:30(04) (B. Bogues)

PHUM 2060. Projects in Public Humanities.

Devoted to one or more advanced projects in Public Humanities not covered in detail by the regular courses. Projects in public humanities provide practical, hands-on project and group project management experience that is essential for careers in museums, historic preservation, and cultural agencies. Students will work with faculty advisor to project completion. Written permission and topic description required. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. This course is repeatable for credit. Prerequisite: AMST2650 or PHUM2010 or demonstrated ability of equivalent experience. Instructor permission required.

PHUM 2065. Independent Reading and Research in Public Humanities.

For MA in Public Humanities Students who wish to do independent reading and research.

Anthropology

ANTH 0066J. So You Want to Change the World?.

Examines from an anthropological perspective efforts to address global poverty that are typically labeled as "development." The enterprise of development is considered critically, both with regard to the intentions and purposes that underlie the actions of wealthy countries, donor organizations, and expatriate development workers and with regard to the outcomes for the people who are the intended beneficiaries. Privileging the perspectives of ordinary people in developing countries, but also looking carefully at the institutions involved in development, the course relies heavily on ethnographic case studies that will draw students into the complexity of one of the greatest contemporary global problems: social inequality. Enrollment limited to 19 first year students.

Fall ANTH0066J S01 17373 W 3:00-5:30(10) (D. Smith)

ANTH 0100. Introduction to Cultural Anthropology.

This course provides an introduction to cultural anthropology, surveying its defining questions, methods, and findings. We will examine the history and utility of anthropology's hallmark method, ethnography, the long-term immersion of the researcher in the culture under study. We will compare cultural anthropology's findings and comportment in other cultures to its conclusions and conduct in our own. No prerequisites.

Spr ANTH0100 S01 26086 MW 11:00-11:50 (M. Lennon)

ANTH 0300. Culture and Health.

An introduction to the field of Medical Anthropology. Lecture reading and discussion will examine the social context of health and illness,

looking at the diverse ways in which humans use cultural resources to cope with disease and develop medical systems. The course will provide an introduction to the overall theoretical frameworks that guide anthropological approaches to studying human health related behavior. Medical anthropology offers a unique and revealing perspective on the cultural diversity that characterizes human experiences of sexuality, disease, aging, mental illness, disability, inequality and death.

Fall ANTH0300 S01 17363 MW 11:00-11:50 (K. Mason)

ANTH 0310. Human Evolution.

Examination of theory and evidence on human evolution in the past, present and future. Topics include evolution and adaptation, biocultural adaptation, fossil evidence, behavioral evolution in primates, human genetic variation and contemporary human biological variation.

Spr ANTH0310 S01 26091 TTh 9:00-10:20(05) (A. Scherer)

ANTH 0500. Past Forward: Discovering Anthropological Archaeology.

This course offers a broad journey through the human past, from material culture crafted by our evolutionary ancestors to the remnants of the recent historic past. To facilitate this journey, the class explores the methods, concepts, and theories that anthropologists employ in the study of past peoples, places, and things. Case studies stretch across the globe. As a hands-on endeavor, archaeology focuses on tangible evidence. In this course, small-group discussion, laboratory, and field exercises will complement lectures, leading to an understanding of how anthropologists study the past and how that knowledge affects the present.

Fall ANTH0500 S01 17359 MW 10:00-10:50 'To Be Arranged'

ANTH 0800. Sound and Symbols: Introduction to Linguistic Anthropology.

This introduction to the study of language and culture considers how language not only reflects social reality but also creates it. We'll examine specific cases of broad current relevance, in the process learning how an analytical anthropological approach to language use lays bare its often hidden power. We'll consider how language creates and reinforces social inequality and difference, how language promotes and resists globalization, and how language is used creatively in performance, literature, film, advertising, and mass media. We will also consider how language does important social work in specific contexts, such as classrooms, courtrooms, medical settings, and political campaigns.

Fall ANTH0800 S01 17362 MW 1:00-1:50 (J. Babcock)

ANTH 1126. Ethnographies of Heritage: Community and Landscape of the Mediterranean and Beyond.

Archaeologists study objects and (socio-cultural) anthropologists investigate culture is how stereotype and conventions have long had it. As material culture studies have increasingly blurred these boundaries, the distinction is entirely meaningless when it comes to archaeological heritage. Taking its cue from material culture studies, this course explores how local communities experience the material remains from the past and (re)incorporate them into their contemporary lives.

Spr ANTH1126 S01 26102 F 3:00-5:30(15) (P. Van Dommelen)

ANTH 1201. Introduction to Geographic Information Systems and Spatial Analysis.

This course offers an introduction to the concepts and techniques of Geographic Information Systems (GIS). Through weekly lab assignments and work on independent projects, students develop skills in cartography and coordinate systems, spatial database design, image processing, basic spatial analysis, hydrological modeling, and three-dimensional modeling. Discussions and case material draw primarily from the application of GIS in archaeology, anthropology, and cultural geography, including the study of archival materials and the ethics of geographic representation. Provides foundation for upper division coursework in spatial analysis. Software focuses on ESRI products (ArcMap, ArcScene, ArcCatalog, ArcGIS Pro).

Fall ANTH1201 S01 18544 TTh 9:00-10:20(05) (P. VanValkenburgh)

ANTH 1300. Anthropology of Addictions and Recovery.

The purpose of this course is to consider the uses and misuses alcohol, tobacco and drugs, and approaches to recovery from addictions. We will read some of the major cross cultural, ethnographic, linguistic, and social-political works on addictions. Students will conduct their own anthropological interviews regarding substance misuse and recovery as well as observe a local 12 step recovery meeting in the community.

Students will engage in discussions of recovery with community partners. Enrollment limited to 20.

Fall ANTH1300 S01 17370 W 3:00-5:30(10) (I. Glasser)

ANTH 1301. Anthropology of Homelessness.

Homelessness emerged as a public concern in the United States and in other industrialized countries in the late 1970s as people began encountering people living on the streets, a way of life formerly confined to the skid rows of large cities. In this course, through readings, readings, discussion, and hands on experiences with individuals and families experiencing homelessness, we will uncover the causes, conditions, and responses to homelessness. Each student will spend at least two hours per week in a local homeless-serving community partners in order to gain face to face experiences. The field placements will be facilitated by the professor.

Spr ANTH1301 S01 26098 W 3:00-5:30(10) (I. Glasser)

ANTH 1310. Global Health: Anthropological Perspectives.

This course explores the distinctive contribution that a critical approach—primarily that of medical anthropology—can make to the rapidly changing field of global health. The course takes a problem-based approach and focuses on “grand challenges,” such as those posed by global pandemics, humanitarian crisis, or the limited reach of child and maternal health programs in “resource-poor” locations. Through ethnographic case studies, we will examine how the concepts and practices associated with global health interventions travel to different parts of the world and interact with local agendas.

Spr ANTH1310 S01 26088 MWF 2:00-2:50(07) 'To Be Arranged'

ANTH 1311. Language and Medicine in Practice.

This course is part of the Engaged Scholars Program and provides a foundation through which to think about how people's use of language shapes and is shaped by the medical sphere. Team taught by a linguistic anthropologist (Faudree) and medical anthropologist (Hamdy), this course provides foundations to understanding the scholarly intersections between language, medicine, and society. At the same time, the course offers a strong pragmatic dimension, as students will engage in volunteer and participant-observation work in clinical settings. Throughout the course we will be bringing our insight and observations of clinical practice to bear on anthropological tools of analysis. The course is limited to 20 students who will be admitted to the class via an application process. Priority given to seniors, those in the Engaged Scholars Program, and Anthropology concentrators.

Spr ANTH1311 S01 26099 Th 1:30-4:00 (K. Mason)

ANTH 1320. Anthropology and International Development: Ethnographic Perspectives on Poverty and Progress.

Examines international development from an ethnographic perspective, looking critically at issues of poverty and progress from local points of view. Course is organized around the premise that culture is central to understanding processes of development. Broad development themes such as public health, agriculture, democracy, and the environment will be explored through readings representing a wide range of regions and cultures.

Spr ANTH1320 S01 26101 Th 4:00-6:30(17) (D. Smith)

ANTH 1621. Material Culture Practicum.

The course explores the ways that archaeologists think about and interpret material culture and provides an opportunity to study the artifacts of everyday life found at historical archaeological sites in the Atlantic World firsthand. Focusing on an assemblage from a site that was a place of intercultural trade, conflict, and enslavement, students will learn how material evidence reveals the entanglements of Indigenous, European, and African people.

Spr ANTH1621 S01 26220 W 3:00-5:30(10) (P. Rubertone)

ANTH 1623. Archaeology of Death.

Examines death, burial, and memorials using comparative archaeological evidence from prehistory and historical periods. The course asks: What insight does burial give us about the human condition? How do human remains illuminate the lives of people in the past? What can mortuary artifacts tell us about personal identities and social relations? What do gravestones and monuments reveal about beliefs and emotions? Current

cultural and legal challenges to the excavation and study of the dead are foregrounded.

Spr ANTH1623 S01 26085 MWF 10:00-10:50(03) (P. Rubertone)

ANTH 1650. Ancient Maya Writing.

Nature and content of Mayan hieroglyphic writing, from 100 to 1600 CE. Methods of decipherment, introduction to textual study, and application to interpretations of Mayan language, imagery, world view, and society. Literacy and Mesoamerican background of script.

Spr ANTH1650 S01 26087 MWF 1:00-1:50(06) (S. Houston)

ANTH 1720. The Human Skeleton.

More than simply a tissue within our bodies, the human skeleton is a gateway into narratives of the past—from the evolution of our species to the biography of individual past lives. Through lecture and hands-on laboratory, students will learn the complete anatomy of the human skeleton, with an emphasis on the human skeleton in functional and evolutionary perspective. We'll also explore forensic and bioarchaeological approaches to the skeleton. By the course conclusion, students will be able to conduct basic skeletal analysis and will be prepared for more advanced studies of the skeleton from medical, forensic, archaeological, and evolutionary perspectives.

Fall ANTH1720 S01 17361 MW 12:00-12:50 (A. Scherer)

ANTH 1740. Paleoethnobotany: Ancient Agriculture to Criminal Investigations.

How can we use botanical evidence to understand the past, from cold cases to VERY cold cases? Which roles did plants play in ancient communities? What happens to plant remains after they become incorporated into the archaeological record, and what are the methods used to study these “ecofacts”? How do paleoethnobotanical interpretations contribute to our understanding of history and structure our public policy? How is botanical forensic evidence used in law enforcement investigations? This course trains students in laboratory methods and interpretations of botanical evidence through hands-on practice. We explore the major classes of plant remains likely to be encountered in forensic cases and archaeological sites; identify botanical residues and organize the data to make interpretable results; and address major issues within the discipline.

Fall ANTH1740 S01 17368 TTh 10:30-11:50(13) (S. Morell-Hart)

ANTH 1820. Lost Languages: The Decipherment and Study of Ancient Writing Systems.

Humans make many marks, but it is writing that records, in tangible form, the sounds and meanings of language. Creating scripts is momentous; writing facilitates complex society and is a crucial means of cultural expression. This course addresses the nature of writing in past times. Topics include: the technology of script; its precursors and parallel notations; its emergence, use, and “death”; its change over time, especially in moments of cultural contact and colonialism; writing as a physical object or thing; code-breaking and decipherment, including scripts not yet deciphered; and the nature of non-writing or pseudo- or crypto-scripts.

Spr ANTH1820 S01 26090 MW 3:00-4:20(10) (S. Houston)

ANTH 1920. Gastronomic Heritage.

How is gastronomic heritage established and re-established through ties to ancient foodways? Where do archaeology and history contribute to the ossification and legitimation of culinary traditions and practices? There are many stakes tied to such questions—nutritional, religious, ethnic, institutional, governmental, and touristic, among others. In this course, we address relationships between food history and gastronomic heritage, drawing on examples from around the world and across media, including cookbooks, international policy reports, and video game representations. We examine culinary dimensions considered “traditional” by local communities and federal agencies, the archaeological and historical sources of such narratives (if they exist), and impacts of gastronomic heritage on modern practices, identities, and economies.

Spr ANTH1920 S01 26578 TTh 2:30-3:50(11) (S. Morell-Hart)

ANTH 1930. Anthropology Thesis Workshop.

This course is a year long two-semester workshop (offered in the fall and spring semesters) for students who are researching and writing an honors or senior thesis in Anthropology or a closely related field. Supplementing

advisor support, the course will introduce students to best practices, shoring up essential skills in research design, methods, data interpretation, and written and oral presentation. Students will also participate in peer review, offering and responding to substantive and supportive feedback on their work in progress. The workshop, which meets every other week, is structured so that students can make substantial progress, following a recommended schedule to ensure the successful and timely completion of the thesis in the spring.

Fall ANTH1930 S01 17665 F 9:00-11:30 (R. Preucel)

Spr ANTH1930 S01 26103 F 9:00-11:30 (R. Preucel)

ANTH 1940. Ethnographic Research Methods.

To understand the different theoretical assumptions that shape research efforts; to examine how hypotheses and research questions are formulated; and to appreciate the ethical and scientific dimensions of research by hands-on experience in fieldwork projects. Prerequisite: One Anthropology course.

Spr ANTH1940 S01 26625 M 3:00-5:30(13) (J. Babcock)

ANTH 1970. Individual Research Project.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ANTH 1990. Senior Seminar: (Re)Making Anthropology.

This Senior Seminar capstone course is a critical look at the past, present, future of anthropology. The class proceeds from the premise that we must know the history of our field in order to build a stronger discipline. It examines the contributions and missteps of past anthropologists. Among the key questions to address: What are the discipline's aims and contributions in the 21st century? Has the field successfully integrated diverse voices and perspectives? Are their central theories and methods that have (and continue to) define the field? What does it mean to be an anthropologist?

Spr ANTH1990 S01 26093 TTh 10:30-11:50(09) (I. Jusionyte)

ANTH 2010. Principles of Cultural Anthropology.

A seminar exploring fundamental theoretical and ethnographic currents in 20th- and 21st-century cultural anthropology.

Fall ANTH2010 S01 17374 Th 4:00-6:30(04) (D. Smith)

ANTH 2020. Methods of Anthropological Research.

A seminar on the methodological problems associated with field research in social and cultural anthropology. Designed to help students prepare for both summer and dissertation research.

Spr ANTH2020 S01 26100 Th 1:00-3:30 (R. Carter)

ANTH 2045. Proposal Writing Workshop for Anthropological Fieldwork.

This course is designed for third-year graduate students in any subfield of anthropology or closely related fields who are writing grant proposals for dissertation research. Student grant proposals will be pre-circulated and workshopped. Students will gain familiarity with the format for writing successful proposals, with the strategies needed to operationalize them, and with the everyday academic labor of both offering and responding to substantive feedback.

Fall ANTH2045 S01 17372 W 3:00-5:30(10) (M. Lennon)

ANTH 2060. Anthropology Dissertators' Seminar.

This seminar is for post-field graduate students in residence at Brown who are at any stage of writing their dissertations. It is intended to support dissertators by providing a structured community, providing a setting for sharing goals, and workshopping writing.

Fall ANTH2060 S01 17371 W 9:00-11:30 (J. Leinaweaver)

Spr ANTH2060 S01 26095 W 9:00-11:30 (J. Leinaweaver)

ANTH 2271. Fiction / Ethnography (+ the space between).

What is the relationship between fiction and ethnography, story and fact, creativity and objectivity? This course will consider how fiction and ethnography can each inform yet trouble the other, beginning from the premise that both involve a kind of magic. Using the same building blocks – seemingly humble and ostensibly available to all – writers of fiction and ethnography alike create what one contemporary author has called “language-made hallucinations, fabrications that persuade us to believe in them.” Yet these “fabrications” often have different stakes and use different methods for revealing human “truths.” We’ll explore such divergences

and alignments by seeing what is provoked when juxtaposing fiction, ethnography, and even other genres of writing (poetry, journalism, creative non-fiction, etc.). Writing assignments for the course, as befits the content, are flexible with respect to genre.

Fall ANTH2271 S01 17668 T 1:30-3:50 (P. Faudree)

ANTH 2300. Anthropological Demography.

A seminar devoted to the investigation of the interface of anthropology (especially sociocultural anthropology) and demography. A wide variety of demographic topics-fertility, mortality, marriage, migration-are considered, and the links between anthropological and demographic writings on and approaches to these areas are examined.

Spr ANTH2300 S01 26089 M 3:00-5:30(13) 'To Be Arranged'

ANTH 2310A. Law and Violence.

This graduate seminar draws on ethnographic studies and social theory to examine the disturbing, but not paradoxical entanglement between law and violence. Building on Charles Tilly's comparison between state-making and organized crime and Walter Benjamin's concepts of law-making and law-preserving violence, we will explore how different modes of violence – from brutal force to more nuanced structural and symbolic forms of oppression – intersect with policies and practices of governance. Anthropological approaches will be used to analyze questions of sovereignty, security, and justice, as we will trace their meanings across disjunctive cultural and legal terrains.

Fall ANTH2310AS01 17376 Th 1:00-3:30 (I. Jusionyte)

ANTH 2402. Empire: Global Perspectives.

Empires — ancient, early modern, and contemporary — have profoundly shaped the distribution of wealth and power in the modern world. However, imperial formations are strikingly diverse, and many of the entities that scholars now call “empires” were not understood as such during their own times. This collaborative humanities graduate seminar explores that diversity and examines how empires rise, fall, and perdure. While taking a global, comparative perspective, we also attend to local processes, analyzing how landscapes, objects, and people were bound up with imperial trajectories in such contexts as the ancient Mediterranean, Persia, China, the Andes, the Early Modern Atlantic, and the contemporary world. We afford particular attention to local peoples' relationships with empires, environmental history, political economy, historiography, and imperial art and material culture.

Spr ANTH2402 S01 26388 F 9:00-11:30 (P. VanValkenburgh)

ANTH 2450. Exchange Scholar Program.

Fall ANTH2450 S01 16530 Arranged 'To Be Arranged'

Fall ANTH2450 S02 16531 Arranged 'To Be Arranged'

Spr ANTH2450 S01 25199 Arranged 'To Be Arranged'

ANTH 2501. Principles of Archaeology.

Examines theoretical and methodological issues in anthropological archaeology. Attention is given to past concerns, current debates, and future directions of archaeology in the social sciences.

Fall ANTH2501 S01 17366 W 3:00-5:30(10) (S. Morell-Hart)

ANTH 2800. Linguistic Theory and Practice.

An introduction to theoretical and methodological issues in the study of language and social life. We begin by examining semiotic approaches to language. We turn to classical research on language as a structured system - covering such topics as phonology and grammatical categories - but we focus on the implications of such work for broader social scientific and humanistic research. We then consider areas of active contemporary research, including cognition and linguistic relativity, meaning and semantics, pronouns and deixis, deference and register, speech acts and performativity, interaction, verbal art and poetics, reported speech, performance, and linguistic ideology.

Spr ANTH2800 S01 26094 T 1:30-4:00 (P. Faudree)

ANTH 2801. Whiteness and Language.

How has whiteness shaped language—not specific languages or sub-varieties of languages, but the very idea of language itself? This class will not presume either whiteness or language as stable or self-evident categories. Instead, we will explore how both have emerged together in and through projects of (racial, ethnic, gendered, sexual, classed, religious, etc.) colonial modernity. The class will introduce students to

a critical interdisciplinary toolkit that they will collaboratively apply to a selection of case studies drawn from global colonial situations, culminating in an original mini-research project.

Spr ANTH2801	S01	26616	W	3:00-5:30(10)	(J. Babcock)

ANTH 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall ANTH2970	S01	16532	Arranged	'To Be Arranged'
Spr ANTH2970	S01	25200	Arranged	'To Be Arranged'

ANTH 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ANTH 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall ANTH2990	S01	16533	Arranged	'To Be Arranged'
Spr ANTH2990	S01	25201	Arranged	'To Be Arranged'

Applied Mathematics

APMA 0111. Data Science and Social Justice.

This first-year seminar explores the impact of data and algorithms on equity and justice. Data analysis and visualization can help identify inequities and advocate for social justice. At the same time, data-based algorithms can institutionalize and rationalize unfair practices and injustices. In this course, we will engage with fundamental questions about the role of data to work towards social justice. We will gain introductory data science skills, discuss algorithmic bias, equity, and fairness, and work with real-world data sets and algorithms to examine inequities in health, policing, prisons, and welfare. Everybody is welcome - no prerequisites are needed.

Spr APMA0111	S01	26025	MWF	10:00-10:50(03)	'To Be Arranged'

APMA 0160. Introduction to Scientific Computing.

For students in any discipline that may involve numerical computations. Includes instruction for programming in MATLAB. Applications discussed include solution of linear equations (with vectors and matrices) and nonlinear equations (by bisection, iteration, and Newton's method), interpolation, and curve-fitting, difference equations, iterated maps, numerical differentiation and integration, and differential equations. Prerequisites: MATH 0100 or equivalent.

Fall APMA0160	S01	17762	MWF	1:00-1:50(08)	(P. Sentz)

APMA 0200. Introduction to Modeling.

This course provides an introduction to the mathematical modeling of selected biological, chemical, engineering, and physical processes. The goal is to illustrate the typical way in which applied mathematicians approach practical applications, from understanding the underlying problem, creating a model, analyzing the model using mathematical techniques, and interpreting the findings in terms of the original problem. Single-variable calculus is the only requirement; all other techniques from differential equations, linear algebra, and numerical methods, to probability and statistics will be introduced in class. Prerequisites: Math 0100 or equivalent.

Fall APMA0200	S01	17535	MWF	1:00-1:50(08)	(J. Darbon)

APMA 0260. Linear Algebra and Multivariable Calculus for Applied Mathematics.

This one-semester course provides an integrated introduction to multi-variable calculus and linear algebra. Students will develop a strong foundation in mathematical concepts and techniques essential for the applied mathematics concentration.

Spr APMA0260	S01	26311	MWF	2:00-2:50(07)	(P. Tabrizian)

APMA 0350. Applied Ordinary Differential Equations.

This course provides a comprehensive introduction to ordinary differential equations and their applications. During the course, we will see how applied mathematicians use ordinary differential equations to solve practical applications, from understanding the underlying problem, creating a differential-equations model, solving the model using analytical, numerical, or qualitative methods, and interpreting the findings in terms

of the original problem. We will also learn about the underlying rigorous theoretical foundations of differential equations. Prerequisites: MATH 0100 or equivalent; knowledge of matrix-vector operations, determinants, and linear systems.

Fall APMA0350	S01	17536	MWF	9:00-9:50(09)	(P. Tabrizian)

Fall APMA0350	S02	17537	MWF	12:00-12:50(15)	(K. Mallory)

Spr APMA0350	S01	26026	MWF	12:00-12:50(01)	(Z. Yang)

APMA 0360. Applied Partial Differential Equations I.

This course provides an introduction to partial differential equations and their applications. We will learn how to use partial differential equations to solve problems that arise in practical applications, formulating questions about a real-world problem, creating a partial differential equation model that can help answer these questions, solving the resulting system using analytical, numerical, and qualitative methods, and interpreting the results in terms of the original application. To help us support and justify our approaches and solutions, we will also learn about theoretical foundations of partial differential equations. Prerequisites: APMA 0350 or equivalent.

Fall APMA0360	S01	17538	MWF	12:00-12:50(15)	(P. Tabrizian)

Spr APMA0360	S01	26027	MWF	12:00-12:50(01)	(P. Tabrizian)

Spr APMA0360	S02	26028	TTh	10:30-11:50(09)	(H. Dong)

APMA 0650. Essential Statistics.

A first course in probability and statistics emphasizing statistical reasoning and basic concepts. Topics include visual and numerical summaries of data, representative and non-representative samples, elementary discrete probability theory, the normal distribution, sampling variability, elementary statistical inference, measures of association. Examples and applications from the popular press and the life, social and physical sciences. Not calculus-based. No prerequisites.

Spr APMA0650	S01	26029	TTh	1:00-2:20(08)	(A. Culiuc)

APMA 1070. Quantitative Models of Biological Systems.

Quantitative dynamic models help understand problems in biology and there has been rapid progress in recent years. This course provides an introduction to the concepts and techniques, with applications to population dynamics, infectious diseases, enzyme kinetics, and cellular biology. Additional topics covered will vary. Mathematical techniques will be discussed as they arise in the context of biological problems. Prerequisites: APMA 0350 or equivalent.

Spr APMA1070	S01	26030	MWF	11:00-11:50(04)	(A. Culiuc)

APMA 1080. Inference in Genomics and Molecular Biology.

This course is an introduction to the probabilistic and statistical models that have found widespread use in genomics and molecular biology. The emphasis is on foundational models and ideas rather than practical application. Likely topics include Markov chains, hidden Markov models, directed graphical models, mixture models, linear regression, regularization, dimensionality reduction, clustering, Bayesian inference, and multiple hypothesis testing. Examples will focus on the connection to genomics and molecular biology, but all of these tools have found widespread use in a variety of disciplines. Mathematical and computational exercises will reinforce the topics presented in lecture. Prerequisites: APMA 1650 or equivalent; MATH 520 or equivalent; APMA 0160 or CSCI 0111 or equivalent.

Fall APMA1080	S01	17539	MWF	10:00-10:50(14)	(M. Harrison)

APMA 1160. An Introduction to Numerical Optimization.

This course provides a thorough introduction to numerical methods and algorithms for solving non-linear continuous optimization problems. A particular attention will be given to the mathematical underpinnings to understand the theoretical properties of the optimization problems and the algorithms designed to solve them. Topics will include: line search methods, trust-region methods, nonlinear conjugate gradient methods, an introduction to constrained optimization (Karush-Kuhn-Tucker conditions, mini-maximization, saddle-points of Lagrangians). Some applications in signal and image processing will be explored. Prerequisites: MATH 0180 or equivalent; MATH 0520 or equivalent; APMA 0160 or CSCI 0111 or equivalent. APMA 1170 or equivalent is recommended.

Spr APMA1160	S01	26031	MWF	9:00-9:50(04)	(J. Darbon)

APMA 1170. Introduction to Computational Linear Algebra.

Focuses on fundamental algorithms in computational linear algebra with relevance to all science concentrators. Basic linear algebra and matrix

decompositions (Cholesky, LU, QR, etc.), round-off errors and numerical analysis of errors and convergence. Iterative methods and conjugate gradient techniques. Computation of eigenvalues and eigenvectors, and an introduction to least squares methods. Prerequisites: MATH 0100 or equivalent; MATH 0520 or equivalent. Experience with a programming language is strongly recommended.

Fall APMA1170 S01 17540 MWF 9:00-9:50(09) (D. Kim)

APMA 1180. Introduction to Numerical Solution of Differential Equations.

Fundamental numerical techniques for solving ordinary and partial differential equations. Overview of techniques for approximation and integration of functions. Development of multi-step and multi-stage methods, error analysis, step-size control for ordinary differential equations. Solution of two-point boundary value problems, introduction to methods for solving linear partial differential equations. Students will be required to use Matlab (or other computer languages) to implement the mathematical algorithms under consideration: experience with a programming language is therefore strongly recommended. Prerequisites: APMA 0350 or equivalent; APMA 0360 or equivalent.

Spr APMA1180 S01 26032 MWF 1:00-1:50(06) (P. Sentz)

APMA 1200. Operations Research: Probabilistic Models.

APMA 1200 serves as an introduction to stochastic processes and stochastic optimization. After a review of basic probability theory, including conditional probability and conditional expectations, topics covered will include discrete-time Markov chains, exponential distributions, Poisson processes and continuous-time Markov chains, elementary queueing theory, martingales, Markov decision processes and dynamic programming. If time permits topics selected from filtering of hidden Markov chains, renewal processes, and Brownian motion could be included. Prerequisites: APMA 1650 (or equivalent) and MATH 520 (or equivalent). The course assumes calculus, basic probability theory, and linear algebra.

Spr APMA1200 S01 26033 MWF 11:00-11:50(04) (H. Wang)

APMA 1210. Operations Research: Deterministic Models.

An introduction to the basic mathematical ideas and computational methods of optimizing allocation of effort or resources, with or without constraints. Linear programming, network models, dynamic programming, and integer programming. Prerequisites: MATH 0100 or equivalent; MATH 520 or equivalent; APMA 0160 or CSCI 0111 or equivalent.

Fall APMA1210 S01 17541 TTh 10:30-11:50(13) (A. Culiuc)

APMA 1330. Applied Partial Differential Equations II.

Review of vector calculus and curvilinear coordinates. Partial differential equations. Heat conduction and diffusion equations, the wave equation, Laplace and Poisson equations. Separation of variables, special functions, Fourier series and power series solution of differential equations. Sturm-Liouville problem and eigenfunction expansions. Prerequisites: APMA 0360 or equivalent.

Fall APMA1330 S01 17542 TTh 9:00-10:20(05) (Z. Yang)

APMA 1360. Applied Dynamical Systems.

This course gives an overview of the theory and applications of dynamical systems modeled by differential equations and maps. We will discuss changes of the dynamics when parameters are varied, investigate periodic and homoclinic solutions that arise in applications, and study the impact of additional structures such as time reversibility and conserved quantities on the dynamics. We will also study systems with complicated "chaotic" dynamics that possess attracting sets which do not have an integer dimension. Applications to chemical reactions, climate, epidemiology, and phase transitions will be discussed. Prerequisites: APMA 0350 or equivalent.

Spr APMA1360 S01 26034 MWF 9:00-9:50(02) (B. Sandstede)

APMA 1650. Statistical Inference I.

APMA 1650 is an integrated first course in mathematical statistics. The first half of APMA 1650 covers probability and the last half is statistics, integrated with its probabilistic foundation. Specific topics include probability spaces, discrete and continuous random variables, methods for parameter estimation, confidence intervals, and hypothesis testing. Prerequisites: MATH 0100 or equivalent.

Fall	APMA1650	S01	17543	MWF	2:00-2:50(01)	(A. Culiuc)
Fall	APMA1650	S02	17765	MWF	10:00-10:50(14)	'To Be Arranged'
Spr	APMA1650	S01	26035	MWF	9:00-9:50(02)	'To Be Arranged'
Spr	APMA1650	S02	26036	MWF	10:00-10:50(03)	'To Be Arranged'

APMA 1655. Honors Statistical Inference I.

Students may opt to enroll in APMA 1655 for more in depth coverage of APMA 1650. Enrollment in 1655 will include an optional recitation section and required additional individual work. Applied Math concentrators are encouraged to take 1655. Prerequisites: MATH 0180 or equivalent.

Fall	APMA1655	S01	17544	MWF	11:00-11:50(16)	'To Be Arranged'
Spr	APMA1655	S01	26037	TTh	2:30-3:50(11)	(A. Vander Werf)

APMA 1660. Statistical Inference II.

APMA 1660 is designed as a sequel to APMA 1650 to form one of the alternative tracks for an integrated year's course in mathematical statistics. The main topic is linear models in statistics. Specific topics include likelihood-ratio tests, nonparametric tests, introduction to statistical computing, matrix approach to simple-linear and multiple regression, analysis of variance, and design of experiments. Prerequisites: APMA 1650 or equivalent; MATH 0520 or equivalent.

Spr APMA1660 S01 26038 MWF 10:00-10:50(03) (K. Meng)

APMA 1690. Computational Probability and Statistics.

Examination of probability theory and mathematical statistics from the perspective of computing. Topics selected from random number generation, Monte Carlo methods, limit theorems, stochastic dependence, Bayesian networks, dimensionality reduction. Prerequisites: APMA 1650 or equivalent; programming experience is recommended.

Fall APMA1690 S01 17545 TTh 1:00-2:20(06) (K. Meng)

APMA 1710. Information Theory.

Information theory is the study of the fundamental limits of information transmission and storage. This course, intended primarily for advanced undergraduates and beginning graduate students, offers a broad introduction to information theory and its applications: Entropy and information, lossless data compression, communication in the presence of noise, channel capacity, channel coding, source-channel separation, lossy data compression. Prerequisites: APMA 1650 or equivalent.

Spr APMA1710 S01 26039 TTh 10:30-11:50(09) (P. Dupuis)

APMA 1740. Recent Applications of Probability and Statistics.

This course develops the mathematical foundations of modern applications of statistics to the computational, cognitive, engineering, and neural sciences. The course is rigorous, but the emphasis is on application. Topics include: Gibbs ensembles and their relation to maximum entropy, large deviations, exponential models, and information theory; statistical estimation and classification; graphical models, dynamic programming, MCMC, parameter estimation, and the EM algorithm. Graduate version: 2610; Undergraduate version: 1740. Prerequisites: APMA 1650 or equivalent; programming experience; strong mathematics background. APMA 1200 or APMA 1690 or similar courses recommended. MATH 1010 or equivalent is recommended for APMA 2610.

Spr APMA1740 S01 26040 MWF 2:00-2:50(07) (O. Nguyen)

APMA 1860. Graphs and Networks.

Selected topics about the mathematics of graphs and networks with an emphasis on random graph models and the dynamics of processes operating on these graphs. Topics include: empirical properties of biological, social, and technological networks (small-world effects, scale-free properties, transitivity, community structure); mathematical and statistical models of random graphs and their properties (Bernoulli random graphs, preferential attachment models, stochastic block models, phase transitions); dynamical processes on graphs and networks (percolation, cascades, epidemics, queuing, synchronization). Prerequisites: MATH 520 or equivalent; APMA 0350 or equivalent; APMA 1650 or equivalent; programming experience. APMA 1200 or APMA 1690 or similar courses recommended.

Fall APMA1860 S01 17546 TTh 9:00-10:20(05) (A. Vander Werf)

APMA 1910. Race and Gender in the Scientific Community.

This course examines the (1) disparities in representation in the scientific community, (2) issues facing different groups in the sciences, and (3) paths towards a more inclusive scientific environment. We will delve

into the current statistics on racial and gender demographics in the sciences and explore their background through texts dealing with the history, philosophy, and sociology of science. We will also explore the specific problems faced by underrepresented and well-represented racial minorities, women, and LGBTQ community members. The course is reading intensive and discussion based. To be added to the waitlist for this course, please go to <https://goo.gl/forms/foK0fyGxm5Eu2irA2>

Fall APMA1910 S01 17764 TTh 2:30-3:50(12) (K. Mallory)

APMA 1930P. Mathematics and Climate.

Mathematical models play a critical role in projecting and understanding climate processes. This course will discuss techniques for application of theoretical models, computational experiments, and data analysis in climate science, including oceanic, atmospheric, and ecological phenomena. Intended for students in applied mathematics and other concentrations with quantitative skills who are interested in applying their knowledge to mathematical modeling and climate problems. No previous coursework in climate science is required. Physical science concepts and mathematical techniques will be introduced throughout the course. Students will develop collaborative or individual projects later in the semester. Prerequisites: APMA 0360, or APMA 0340, or written permission; APMA 1650 is recommended.

Spr APMA1930FS01 26232 TTh 9:00-10:20(05) (M. Freilich)

APMA 1930W. Probabilities in Quantum Mechanics.

We will start from scratch. We will be rigorous, while making a careful accounting of the (surprisingly few) conceptual assumptions that lead inexorably to consequences that are almost impossible to believe. With an eye on some of the most startling and vexing of these, we will construct a minimum mathematical foundation sufficient to explore: the abrupt transition from the weird quantum to the familiar classical world; the uncertainty principles; teleportation; Bell's theorem and the Einstein-Bohr debates; quantum erasure; the Conway-Kochen "free-will theorem"; (unbreakable) quantum encryption, and, an introduction to quantum computing.

Spr APMA1930VS01 26049 MWF 1:00-1:50(06) (S. Geman)

APMA 1930X. Probability, Optimization, and Stochastic Calculus.

This senior seminar will explore various topics in probability, including stochastic processes, stochastic optimization including optimal stopping and optimal stochastic control, Brownian motion, stochastic calculus, connection to partial differential equations, and some of their applications. The class format will involve both lectures and class discussions. Calculus based undergraduate probability, such as APMA 1650/1655 or MATH 1210/1610, is required. Minimal experience in MATLAB is recommended, but not required.

Fall APMA1930XS01 18905 MWF 11:00-11:50(16) (H. Wang)

APMA 1930Z. Introduction to Mathematical Machine Learning.

This course will provide an introduction to machine learning from a mathematical perspective. The primary objective of this course is to equip students with the skills to ask mathematical questions when studying machine learning algorithms. Classical supervised learning methods will be presented and studied using the tools from information theory, statistical learning theory, optimization, and basic functional analysis. The course will cover three categories of machine learning approaches: linear methods, kernel-based methods, and deep learning methods, each applied to regression, classification, and dimension reduction. Coding exercises will be an essential part of the course to empirically study strengths and weakness of methods.

Fall APMA1930ZS01 18628 MWF 2:00-2:50(01) (P. Dupuis)

APMA 1970. Independent Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

APMA 1971. Independent Study - WRIT.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. This course should be taken in place of APMA 1970 if it is to be used to satisfy the WRIT requirement.

APMA 2070. Deep Learning for Scientists & Engineers.

This course introduces concepts and implementation of deep learning techniques for computational science and engineering problems to first

or second year graduate students. This course entails various methods, including theory and implementation of deep learning techniques to solve a broad range of problems using scientific machine learning. Lectures and tutorials on Python, Tensorflow and PyTorch are also included. Students will understand the underlying theory and mathematics of deep learning; analyze and synthesize data in order to model physical, chemical, biological, and engineering systems; and apply physics-informed neural networks and neural operators to model and simulate multiphysics systems. Undergraduate students who want to enroll in this course should request an override through Courses@Brown.

Spr APMA2070 S01 26042 M 3:00-5:30(13) (K. Shukla)

APMA 2110. Real Analysis.

Provides the basis of real analysis which is fundamental to many of the other courses in the program: metric spaces, measure theory, and the theory of integration and differentiation.

Fall APMA2110 S01 17547 TTh 10:30-11:50(13) (Y. Guo)

APMA 2120. Hilbert Spaces and Their Applications.

A continuation of APMA 2110: metric spaces, Banach spaces, Hilbert spaces, the spectrum of bounded operators on Banach and Hilbert spaces, compact operators, applications to integral and differential equations.

Spr APMA2120 S01 26043 TTh 1:00-2:20(08) (Y. Guo)

APMA 2190. Nonlinear Dynamical Systems I.

Basic theory of ordinary differential equations, flows, and maps. Two-dimensional systems. Linear systems. Hamiltonian and integrable systems. Lyapunov functions and stability. Invariant manifolds, including stable, unstable, and center manifolds. Bifurcation theory and normal forms. Nonlinear oscillations and the method of averaging. Chaotic motion, including horseshoe maps and the Melnikov method. Applications in the physical and biological sciences.

Fall APMA2190 S01 17548 TTh 2:30-3:50(12) (B. Sandstede)

APMA 2200. Nonlinear Dynamical Systems: Theory and Applications.

Basic theory of ordinary differential equations, flows, and maps. Two-dimensional systems. Linear systems. Hamiltonian and integrable systems. Lyapunov functions and stability. Invariant manifolds, including stable, unstable, and center manifolds. Bifurcation theory and normal forms. Nonlinear oscillations and the method of averaging. Chaotic motion, including horseshoe maps and the Melnikov method. Applications in the physical and biological sciences.

Spr APMA2200 S01 26044 TTh 2:30-3:50(11) (G. Menon)

APMA 2450. Exchange Scholar Program.

Fall APMA2450 S01 16534 Arranged 'To Be Arranged'

Spr APMA2450 S01 25202 Arranged 'To Be Arranged'

APMA 2550. Numerical Solution of Partial Differential Equations I.

Finite difference methods for solving time-dependent initial value problems of partial differential equations. Fundamental concepts of consistency, accuracy, stability and convergence of finite difference methods will be covered. Associated well-posedness theory for linear time-dependent PDEs will also be covered. Some knowledge of computer programming expected.

Fall APMA2550 S01 17549 W 3:00-5:30(10) (M. Ainsworth)

APMA 2560. Numerical Solution of Partial Differential Equations II.

An introduction to weighted residual methods, specifically spectral, finite element and spectral element methods. Topics include a review of variational calculus, the Rayleigh-Ritz method, approximation properties of spectral and finite element methods, and solution techniques. Homework will include both theoretical and computational problems.

Spr APMA2560 S01 26045 W 3:00-5:30(10) (B. Keith)

APMA 2570B. Numerical Solution of Partial Differential Equations III.

We will cover finite element methods for ordinary differential equations and for elliptic, parabolic and hyperbolic partial differential equations. Algorithm development, analysis, and computer implementation issues will be addressed. In particular, we will discuss in depth the discontinuous Galerkin finite element method. Prerequisite: APMA 2550 or equivalent knowledge in numerical methods.

Fall APMA2570ES01 19012 M 3:00-5:30(03) (B. Keith)

APMA 2580A. Computational Fluid Dynamics.

The course will focus primarily on finite difference methods for viscous incompressible flows. Other topics will include multiscale methods, e.g. molecular dynamics, dissipative particle dynamics and lattice Boltzmann methods. We will start with the mathematical nature of the Navier-Stokes equations and their simplified models, learn about high-order explicit and implicit methods, time stepping, and fast solvers. We will then cover advection-diffusion equations and various forms of the Navier-Stokes equations in primitive variables and in vorticity/streamfunction formulations. In addition to the homeworks the students are required to develop a Navier-Stokes solver as a final project.

Spr APMA2580AS01 26046 TTh 10:30-11:50(09) (J. Guzman)

APMA 2610. Recent Applications of Probability and Statistics.

This course develops the mathematical foundations of modern applications of statistics to the computational, cognitive, engineering, and neural sciences. The course is rigorous, but the emphasis is on application. Topics include: Gibbs ensembles and their relation to maximum entropy, large deviations, exponential models and information theory; statistical estimation and classification; graphical models, dynamic programming, MCMC, parameter estimation, and the EM algorithm. Graduate version: 2610; Undergraduate version: 1740. Prerequisites: APMA 1650 or equivalent, programming experience, strong mathematics background. APMA 1200 or APMA 1690 or similar courses recommended. MATH 1010 or equivalent is recommended for APMA 2610.

Spr APMA2610 S01 26041 MWF 2:00-2:50(07) (O. Nguyen)

APMA 2630. Theory of Probability I.

Part one of a two semester course that provides an introduction to probability theory based on measure theory. The first semester (APMA 2630) covers the following topics: countable state Markov chains, review of real analysis and metric spaces, probability spaces, random variables and measurable functions, Borel-Cantelli lemmas, weak and strong laws of large numbers, conditional expectation and beginning of discrete time martingale theory. Prerequisites—undergraduate probability and analysis, co-requisite—graduate real analysis.

Fall APMA2630 S01 17551 TTh 1:00-2:20(06) (Y. Shenfeld)

APMA 2640. Theory of Probability II.

Part two of a two semester course that provides an introduction to probability theory based on measure theory. Standard topics covered in the second-semester (APMA 2640) include the following: discrete time martingale theory, weak convergence (also called convergence in distribution) and the central limit theorem, and a study of Brownian motion. Optional topics include the ergodic theorem and large deviation theory. Prerequisites—undergraduate probability and analysis, co-requisite—graduate real analysis.

Spr APMA2640 S01 26047 TTh 9:00-10:20(05) 'To Be Arranged'

APMA 2670. Mathematical Statistics I.

This course presents advanced statistical inference methods. Topics include: foundations of statistical inference and comparison of classical, Bayesian, and minimax approaches, point and set estimation, hypothesis testing, linear regression, linear classification and principal component analysis, MRF, consistency and asymptotic normality of Maximum Likelihood and estimators, statistical inference from noisy or degraded data, and computational methods (E-M Algorithm, Markov Chain Monte Carlo, Bootstrap). Prerequisite: APMA 2630 or equivalent.

Fall APMA2670 S01 17552 Th 4:00-6:30(04) (B. Gidas)

APMA 2680. Mathematical Statistics II.

The course covers modern nonparametric statistical methods. Topics include: density estimation, multiple regression, adaptive smoothing, cross-validation, bootstrap, classification and regression trees, nonlinear discriminant analysis, projection pursuit, the ACE algorithm for time series prediction, support vector machines, and neural networks. The course will provide the mathematical underpinnings, but it will also touch upon some applications in computer vision/speech recognition, and biological, neural, and cognitive sciences. Prerequisite: APMA 2670.

Spr APMA2680 S01 26048 Th 4:00-6:30(17) (B. Gidas)

APMA 2810Q. Discontinuous Galerkin Methods.

In this seminar course we will cover the algorithm formulation, stability analysis and error estimates, and implementation and applications of

discontinuous Galerkin finite element methods for solving hyperbolic conservation laws, convection diffusion equations, dispersive wave equations, and other linear and nonlinear partial differential equations. Prerequisite: APMA 2550.

Fall APMA2810CS01 17553 M 3:00-5:30(03) (C. Shu)

APMA 2822B. Introduction to Parallel Computing on Heterogeneous (CPU+GPU) Systems.

This course we will learn fundamental aspects of parallel computing on heterogeneous systems composed of multi-core CPUs and GPUs. This course will contain lectures and hands-on parts. We will cover the following topics: shared memory and distributed memory programming models, parallelization strategies and nested parallelism. We will also learn techniques for managing memory and data on systems with heterogeneous memories (DDR for CPUs and HBM for GPUs); parallelization strategies using OpenMP and MPI; programming GPUs using OpenMP4.5 directives and CUDA. We will focus on programming strategies and application performance. Grading will be based on homework assignments, and final project.

Fall APMA2822ES01 17554 F 3:00-5:30(11) 'To Be Arranged'

APMA 2822G. Topics in Optimal Transport and High Dimensional Probability.

The study of probability distributions in high dimensions is prevalent in current research in theoretical and applied mathematics, as well as in science and engineering. This course will cover the foundations of some of the tools used in the field: optimal transport, probability flows, concentration of measure, as well as other fundamental topics.

Spr APMA2822CS01 26205 M 3:00-5:30(13) (Y. Shenfeld)

APMA 2822H. Topics in Approximation Theory.

Approximation theory lies at the heart of almost every computational method. Although approximation theory is a vast subject that has been studied for centuries it is still an area of current active research, and encompasses many methods including polynomial, neural networks, Fourier series, splines, wavelets, radial basis functions to name but a few. This class aims to cover a wide range of topics in approximation theory that are relevant for those interested in numerical approximation of functions, data and differential equations. We shall cover fundamental theory of polynomial approximation before moving on to topics including multiresolution analysis, wavelets and neural networks. The course is aimed at graduate students in STEM disciplines who are interested in computational methods and who have a basic grounding in real analysis. The class will involve both mathematical theory and algorithms.

Spr APMA2822FS01 26487 W 3:00-5:30(10) (M. Ainsworth)

APMA 2980. Research in Applied Mathematics.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

APMA 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall APMA2990 S01 16535 Arranged 'To Be Arranged'

Spr APMA2990 S01 25203 Arranged 'To Be Arranged'

Archaeology and Ancient World**ARCH 0033. Past Forward: Discovering Anthropological Archaeology (ANTH 0500).**

Interested students must register for ANTH 0500.

Fall ARCH0033 S01 18806 Arranged 'To Be Arranged'

ARCH 0100. Field Archaeology in the Ancient World.

Always wanted to be Indiana Jones? This course, focusing on the Mediterranean world and its neighbors in antiquity, interprets field archaeology in its broadest sense. In addition to exploring "how to do" archaeology - the techniques of locating, retrieving, and analyzing ancient remains - we will consider how the nature of these methodologies affects our understanding of the past.

Fall ARCH0100 S01 18531 MWF 10:00-10:50(14) (L. Bestock)

ARCH 0172. South Asian Art and Architecture (HIAA 0023).

Interested students must register for HIAA 0023.

Fall ARCH0172 S01 18807 Arranged 'To Be Arranged'

ARCH 0230. Myriad Mediterraneans: Archaeology, Representation and Decolonization.

As debates rage about the Classical roots of Western society, the ancient Mediterranean itself is largely overlooked and continues to be seen in stereotypes. Because the ancient Mediterranean was not just white, male and colonizing, this course will explore the extensive archaeological evidence for cultural, gender, ethnic, economic and other forms of diversity during the first millennium BCE. Can archaeology contribute to current debates about decolonization? Conversely, can contemporary debates about indigenous ways of being shine a fresh light on ancient evidence?

Fall	ARCH0230	S01	18690	TTh	9:00-10:20(05)	(P. Van Dommelen)

ARCH 0322. Somewhere Back in Time: Archaeology, the Ancient World, and Heavy Metal Music.

Iron Maiden's "Alexander the Great", Ex Deo's "The Rise of Hannibal", Septic Flesh's "Prometheus" – few musical genres are as interested in history as heavy metal. The sounds, lyrics, images, films, and live performances of many bands from around the world center on stories and mythologies from past cultures. This class examines these phenomena from an archaeological and historical point of view, centering discussion on the music and its stories while contextualizing these modern elements within an archaeologically and historically accurate past.

Spr	ARCH0322	S01	26491	MWF	12:00-12:50(01)	(T. Franconi)

ARCH 0396. Sacred Spaces: Synagogues, Churches, Mosques (JUDS 0050P)..

Interested students must register for JUDS 0050P.

Fall	ARCH0396	S01	18808	Arranged		'To Be Arranged'

ARCH 0398. Arts of the Sacred and the Demonic in the Ancient Mediterranean (RELS 0405)..

Interested students must register for RELS 0405.

Fall	ARCH0398	S01	18809	Arranged		'To Be Arranged'

ARCH 0420. Archaeologies of the Greek Past.

The Onion once reported that ancient Greek civilization was a complete modern fraud, since obviously no one culture could have invented so much, not least all that Great Art and Architecture. But they did. This course will explore the material world of ancient Greece, from the monumental (the Parthenon) to the mundane (waste management), and everything in between. Enrollment limited to 50.

Fall	ARCH0420	S01	18692	MWF	1:00-1:50(08)	(Z. Silvia)

ARCH 0528. Living on the Edge: The Archaeology of Frontier Communities in the Roman Empire.

The Roman Empire was surrounded by over 3,100 miles of frontier that marked the end of Roman territory. These regions are often discussed solely from a military standpoint, but soldiers were only a small part of a much larger frontier community that included women and children, locals and foreigners, and Romans and non-Romans. This course explores how these communities, often marked by asymmetrical power relationships between the Roman State and local communities, developed, investigating social structures, religion, art and architecture, and economies in order to understand what it was like to live on the edge of the Roman world.

Fall	ARCH0528	S01	18532	MWF	11:00-11:50(16)	(T. Franconi)

ARCH 0755. Engineering and Technology in the Ancient World.

Enter the world of Greek and Roman engineers whose monumental works and technologies impressed audiences, both ancient and modern. Explore the technologies of art and construction that led to some of the most extensive building programs undertaken by pre-modern states. Through case studies ranging from particular structural elements and technologies (e.g. columns, domes, cranes, catapults) to overall structural systems (palatial complexes, temples, infrastructure), this class investigates the history of materials, methods, and knowledge behind ancient innovations, and the role of art, architecture, and engineering in shaping socio-cultural and political identity.

Fall	ARCH0755	S01	18736	MWF	2:00-2:50(01)	'To Be Arranged'

ARCH 0775. Farm to Table: Foodways and Gastro-Politics in the Ancient Near East.

This course provides an introduction to the culture, economy, and politics of food in the ancient Near East. We will not only investigate the day-to-day mechanics of food production, cooking, and consumption; we will also develop an appreciation for changing food fashions, for the etiquette

of eating and drinking, and for the complex world of gastro-politics. We will even explore the ancient kitchen using our own hands, mouths, and stomachs as a guide.

Spr	ARCH0775	S01	26490	MWF	11:00-11:50(04)	(K. Forste)

ARCH 1128. The Long Fall of the Roman Empire (HIST 1205).

Interested students must register for HIST 1205.

Fall	ARCH1128	S01	18821	Arranged		'To Be Arranged'

ARCH 1242. Amazonia from the Prehuman to the Present (HIST 1360).

Interested students must register for HIST 1360.

Fall	ARCH1242	S01	18822	Arranged		'To Be Arranged'

ARCH 1282. Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC (CLAS 1210).

Interested students must register for CLAS 1210.

Fall	ARCH1282	S01	18823	Arranged		'To Be Arranged'

ARCH 1544. Heritage in the Metropolis: Remembering and Preserving the Urban Past (URBN 1871A).

Interested students must register for URBN 1871A.

Fall	ARCH1544	S01	18824	Arranged		'To Be Arranged'

ARCH 1630. Fighting Pharaohs: Ancient Egyptian Warfare.

When and why did the ancient Egyptians engage in war? Who was fighting? What were their weapons like and what were their military strategies? What were the political situations that caused them to go to war? How did warfare impact Egyptian society? In studying Egyptian history and society through the pervasive motif of war, we will gain an understanding of the forces that shaped Egyptian culture. Enrollment limited to 55.

Spr	ARCH1630	S01	26493	TTh	2:30-3:50(11)	(L. Bestock)

ARCH 1642. Queering Ancient Egypt.

Queering history is a means of challenging heteronormative narratives of the past. In this course, we will critically examine the archaeological evidence for concepts such as gender, sexuality, and the body in ancient Egypt. The goal of this class is to discover what archaeology can reveal about identity formation in the past, but also to explore how modern conceptions of identity impact our writing of history. Thus, this course will address both the marginalization of gendered identities in historical research about ancient Egypt, as well as the reception of ancient identities in contemporary society.

Fall	ARCH1642	S01	18844	TTh	2:30-3:50(12)	(R. Price)

ARCH 1772. The Human Skeleton (ANTH 1720).

Interested students must register for ANTH 1720.

Fall	ARCH1772	S01	18826	Arranged		'To Be Arranged'

ARCH 1830. Fake! History of the Inauthentic.

What is a fake? Who gets to decide what is authentic? Greek statues, Chinese bronzes, Maya glyphs. Have fraudulent objects always existed? Galileo's signature, a centaur's skeleton, Buddhas bearing swastikas. Are all fakes the same? If not, how are they different? Why do people make forgeries? This course revolves around the history of the inauthentic through a diachronic exploration of objects. WRIT

Fall	ARCH1830	S01	18691	TTh	1:00-2:20(06)	(F. Rojas Silva)

ARCH 1864. Paleoethnobotany: Ancient Agriculture to Criminal Investigations (ARCH 1864)..

Interested students must register for ANTH 1740.

Fall	ARCH1864	S01	18827	Arranged		'To Be Arranged'

ARCH 1881. Introduction to Geographic Information Systems and Spatial Analysis (ANTH 1201)..

Interested students must register for ANTH 1201.

Fall	ARCH1881	S01	18828	Arranged		'To Be Arranged'

ARCH 1882. Introduction to Geographic Information Systems for Environmental Applications (EEPS1320)..

Interested students must register for EEPS 1320.

Fall	ARCH1882	S01	18829	Arranged		'To Be Arranged'

ARCH 1884. Remote Sensing of Earth and Planetary Surfaces (EEPS 1710).

Interested students must register for EEPS 1710.

Fall ARCH1884 S01 18830 Arranged 'To Be Arranged'

ARCH 1900. The Archaeology of College Hill.

A hands-on training class in archaeological field and laboratory techniques. Topics include the nature of field archaeology, excavation and survey methodologies, archaeological ethics, computer technologies (such as GIS), and site and artifact analysis and conservation. Students will act as practicing archaeologists (i.e., actually dig and analyze the results!) through the investigation of local historical and archaeological sites in the College Hill area (e.g. the First Baptist Church of America and Brown University's Quiet Green).

Fall ARCH1900 S01 18535 W 3:00-5:30(10) (C. Rice)

ARCH 1970. Individual Study Project in Old World Archaeology and Art.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ARCH 1990. Senior Honors Thesis in Archaeology and the Ancient World.

Honors students in Archaeology and the Ancient World who are completing their theses should enroll in this course in their final semester. The subject of the thesis and program of study will be determined by the needs of the individual student. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ARCH 2006. Principles of Archaeology (ANTH 2501).

Interested students must register for ANTH 2501.

Fall ARCH2006 S01 18831 Arranged 'To Be Arranged'

ARCH 2184. Material Culture and the Bodily Senses: Past and Present.

How do the senses shape our experience? How many senses are there? How do ancient and modern art and material culture relate to bodily senses? What is material and sensorial memory, and how does it structure time and temporality? Using media and objects, including archaeological and ethnographic collections at Brown and beyond, this course will study how a sensorial perspective on materiality can reshape and reinvigorate research dealing with past and present material culture. Furthermore, we will explore how sensoriality and affectivity can decenter the dominant western modernist canon of the autonomous individual.

Fall ARCH2184 S01 19144 Th 4:00-6:30(04) (Y. Hamilakis)

ARCH 2245. Rural Landscapes and Peasant Communities in the Mediterranean.

The aim of this course is to explore rural settlement and agrarian production in the Mediterranean, both in the ancient and the recent past. The archaeological starting-point is provided by the numerous scatters of surface remains that archaeological surveys across the Mediterranean have collected and that are usually interpreted as 'farmsteads' broadly datable to Classical Antiquity. We will look beyond these scatters to examine the social and economic significance of rural settlement through comparison with ethnographic and historical rural studies from across the Mediterranean and to explore household and community organisation and agrarian production in Classical Antiquity. Enrollment limited to 15.

Fall ARCH2245 S01 18534 M 3:00-5:30(03) (P. Van Dommelen)

ARCH 2265. Nature and Society in the Ancient World.

What is 'nature'? Is human society separate and distinct from the 'natural' world, or a closely-entwined part? Historical investigations often simplify this relationship to one-sided explanations of social or environmental determinism, missing the lived reality of people in their landscapes. This class explores the ecological reality of the 'natural' world in Antiquity, using archaeological, historical, and palaeo-environmental data to investigate these questions, focusing especially on the Roman and late-Roman periods.

Spr ARCH2265 S01 26494 W 3:00-5:30(10) (T. Franconi)

ARCH 2950. Intensive Readings in Ancient Language for Archaeologists.

In this course, students with some previous training in an ancient language will have an opportunity to hone their linguistic skills while reading ancient texts that are specially relevant to archaeologists. The primary purpose of the course is to prepare students to take doctoral ancient language

exams and to identify weak spots in individuals' knowledge of the ancient language. Emphasis will be placed on identification and justification of morphology and syntax, as well as on reading comprehension and idiomatic translation.

ARCH 2980. Individual Reading.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ARCH 2981. Thesis Research.

Individual reading for the Master's degree. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ARCH 2982. Individual Reading for Dissertation.

Reading leading to selection of the dissertation subject. Single credit. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ARCH 2983. Dissertation Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ARCH 2990. Thesis Preparation.

For graduate students who are preparing a thesis and who have met the tuition requirement and are paying a registration fee to continue active enrollment.

Biology and Medicine Biology

BIOL 0080. Biotechnology Management.

An examination of the pharmaceutical, biotechnology, and medical product industries: what they are, how they function, whence they originate, and various perspectives on why some succeed and others fail. Pathways from lab-bench to marketplace are described as are the pervasive influences of the FDA, patent office, and courts. Extensive reading; emphasis on oral presentation. Primarily intended for students planning a career in biomedical industry. Not for biology concentration credit. Enrollment limited to 20.

Spr BIOL0080 S01 25931 T 4:00-6:30(16) (B. Bready)

BIOL 0100. Living Biology at Brown and Beyond.

BIOL0100 is a first year seminar designed for aspiring biology program students. The course introduces students to the people and opportunities in Brown's Biology Program and fosters academic and soft skill development. Students will practice a range of laboratory methods used in molecular biology while examining the ways in which those methods are used in research and in the development of medical treatments. Students will hone their writing skills, learn to effectively read primary STEM literature, and consider how various disciplines in Biology come together to tackle critical global problems such as global environmental change and emerging infectious disease. BIOL 0100 is best suited for students with minimal experience in the biological sciences.

Spr BIOL0100 S01 20226 W 3:00-5:30(10) (K. Monteiro)

BIOL 0170. Biotechnology in Medicine.

Introduces undergraduates to the main technological advances currently dominating the practice of medicine. Provides an overview of the objectives, techniques, and problems related to the application of biomedical technology to the diagnosis and treatment of disease and the contemporary health care industry. Topics include: pharmaceutical development and formulation; organ replacement by prosthesis and transplantation; medical imaging; tissue engineering, therapeutic cloning, regenerative medicine; stem cells; societal, economic, and ethical issues. This course does carry Biology concentration credit.

Fall BIOL0170 S03 17803 MWF 1:00-1:50(08) (T. Achilli)

BIOL 0190F. Darwinian Medicine.

Explores evolutionary explanations of why we get sick, and how this can shape, or misshape, our interpretations of medicine. Draws on evolutionary genetics, population biology, molecular biology and physiology. This course will build on evolutionary biology and then focus on disease processes such as infection, aging, cancer, allergy, diabetes, and obesity. Enrollment limited to 19 first year students.

Fall BIOL0190F S01 10285 TTh 1:00-2:20(06) (M. Tatar)

BIOL 0190P. Pride and Prejudice in the Development of Scientific Theories.

We will examine how the pace and shape of scientific progress is affected by the social/cultural context and the "personality" of the individual. We will look into how the interplay between society and the individual affects how scientific theories arise, are presented, are debated and are accepted. The course will initially focus on Charles Darwin and his theory of Natural Selection using the biography of Adrian Desmond and James Moore, "Darwin: The Life of a Tormented Evolutionist." Enrollment limited to 19 first year students.

Fall BIOL0190P S01 10260 TTh 2:30-3:50(12) (S. Helfand)

BIOL 0190R. Phage Hunters, Part I.

A research-based lab class for freshmen; both semesters are required in the sequence. Students will isolate and characterize a bacteriophage viruses found in the soil. Lab work includes isolation and purification of your own phage, DNA isolation and restriction mapping, and EM characterization of your phage. Several phages will be selected for genome sequencing, and will be annotated during the second semester. Instructor permission required. Admittance based on review of applications in the first class. Limited to 19 freshmen.

Fall BIOL0190R S01 10246 T 4:00-6:30(07) (S. Taylor)

BIOL 0190S. Phage Hunters, Part II.

A research-based laboratory/class for freshmen; both semesters are required. Students will isolate and characterize a bacteriophage viruses found in the soil. Lab work includes isolation and purification of your own phage, DNA isolation and restriction mapping, and EM characterization of your phage. Several phages will be selected for genome sequencing over Winter Recess, and annotated in the spring. One hour of lecture/discussion, and 3 hours lab per week. Expected: AP Biology or equivalent, HS chemistry, and permission of the instructor. Students are expected to take fall and spring courses in the sequence. Enrollment limited to 19 first-year students. Instructor permission.

Spr BIOL0190S S01 20217 Th 4:00-6:30(16) (S. Taylor)

Spr BIOL0190S S01 20217 T 4:00-6:30(16) (S. Taylor)

BIOL 0200. The Foundation of Living Systems.

A broad overview of biological systems, emphasizing patterns and processes that form the basis of life. Explores essentials of biochemistry, molecular, and cellular biology and their relationship to the larger issues of ecology, evolution, and development. Examines current research trends in biology and their influence on culture. Appropriate for all students interested in biology. Serves as a gateway course to much of the intermediate and advanced curriculum. Placement tests are offered (contact Jody_Hall@brown.edu); AP scores of 4 or 5 are equivalent to BIOL 0200, and place a student out of this course. Students will be assigned to a lab time during the second week of class.

Fall BIOL0200 S01 10261 MWF 9:00-9:50(09) (W. Holmes)

BIOL 0210. Diversity of Life.

This course will explore biological diversity – the number of taxa, and the functions, and processes that support life – from the perspectives of ecology and evolutionary biology. It will draw on examples and case studies from the geological record, functional morphology, the evolution of organ systems in vertebrates, genomics, behavior and sexual selection in birds and invertebrates. Overarching themes will emphasize that taxonomic diversity is an emergent property of complex life on Earth, and the importance of diversity of biological functions and processes in generating and maintaining taxonomic diversity. The course is open to all students.

Fall BIOL0210 S01 10286 MWF 11:00-11:50(16) (J. Kellner)

BIOL 0220. Discovering Novel Protein Folding Phenotypes of Wild Yeast.

Yeast species have been used by humans for over millennia in food and drink preparation. However, they are also a powerful model system to tease out the genetic and molecular details of protein folding. Research labs utilize yeast as a model system to study several cellular mechanisms, but this entire body of work comes from just two different yeast strains. And yet, wild yeast grow everywhere in our everyday environments outside of the research lab; nature has provided rich genetic diversity

among these yeast species that go unstudied in a research setting. In this COEX course, you will investigate novel protein-folding phenotypes in these unidentified wild yeast strains.

Fall BIOL0220 S01 18643 TTh 1:00-4:00 (W. Holmes)

BIOL 0280. Biochemistry.

Lectures and recitation sections explore the mechanisms involved in the principles of macromolecular structure and function, the organization and regulation of pathways for intermediary metabolism, and the transfer of information from genes to proteins. Expected background: Cell and Molecular Biology (BIOL 0500) or another intermediate level course providing background in molecular level thinking, e.g. BIOL 0470, BIOL 0530 or NEUR 1020.

Spr BIOL0280 S01 20227 TTh 1:00-2:20(08) (W. Holmes)

BIOL 0285. Inquiry in Biochemistry: From Gene to Protein Function.

In this inquiry-based research course, students work in teams to formulate and test a hypothesis about how a change in genetic sequence affects enzyme function. Students will cultivate skills in scientific visualization, experimental design, data analysis, and laboratory techniques in molecular biology and biochemistry. In discussion, students will learn scientific writing through peer editing and iterative revisions to write a full scientific paper. This course is WRIT designated and will prepare students for writing an honors thesis. Expected: Students have previously taken or be concurrently enrolled in BIOL 0280. Enrollment in one lab section and one discussion section is required.

Spr BIOL0285 S01 20228 M 1:00-5:00 (A. Smith)

Spr BIOL0285 S02 20229 Th 2:30-6:30 (A. Smith)

BIOL 0380. The Ecology and Evolution of Infectious Disease.

Infectious diseases remain among the leading causes of death worldwide, and this burden is disproportionately borne by children living in low- and middle-income countries. Thus management of infectious disease remains a critical intellectual challenge in the 21st century. This course will develop and apply ecological and evolutionary theory to infectious microbes (and their hosts) via the detailed examination of a number of case studies. This will be accomplished by a combination of lectures, discussions, and readings drawn mainly from the primary literature. Assessment will be based on biweekly problem sets, two midterms and one final exam. Expected: BIOL 0200, BIOL 0210 or equivalent.

Fall BIOL0380 S01 10287 MWF 10:00-10:50(14) 'To Be Arranged'

BIOL 0410. Invertebrate Zoology.

A survey of invertebrate animals emphasizing evolutionary patterns and ecological relationships. Functional morphology, physiology, reproduction, development, and behavior of invertebrates will be examined. Laboratory exercises and two separate day-long field trips provide firsthand experience with the animals. Expected: BIOL 0200 or equivalent. Enrollment limited to 44. Students MUST register for the lecture section and a lab.

Fall BIOL0410 S01 10288 TTh 9:00-10:20(05) (P. Ewanchuk)

BIOL 0420. Principles of Ecology.

The principles, concepts, and controversies involved in the study of the distribution and abundance of plant and animal populations and their integration into natural communities. Emphasizes interactions among organisms and the hierarchical nature of ecological processes affecting individuals, populations, and communities. Expected: BIOL 0200 (or equivalent) and MATH 0090. Lectures and weekly discussion.

Spr BIOL0420 S01 20253 TTh 9:00-10:20(05) (J. Witman)

BIOL 0430. The Evolution of Plant Diversity.

Examines the evolutionary history of plants from a phylogenetic perspective. Introduces the principles of phylogenetics and the use of phylogenies to understand organismal evolution. Highlights major trends in plant evolution over the past 400 million years. Lectures survey major plant lineages, with special focus on flowering plants. Weekly labs and assignments stress basic plant anatomy and morphology, identification, and learning to recognize and appreciate the abundance, diversity, and uses of plants in daily life. Expected: BIOL 0200 (or equivalent placement).

Spr BIOL0430 S01 20254 TTh 9:00-10:20(05) (R. Kartzinel)

BIOL 0440. Inquiry in Plant Biology: Analysis of Plant Growth, Reproduction and Adaptive Responses.

This course focuses on what plants do and how they do it. Introduces the biology of plants, their growth and development, structural features, and their cellular and organismal responses to key stimuli. Examines physiological, reproductive and developmental strategies throughout the plant life cycle and in relation to environmental challenges. During laboratory section meetings, students pursue inquiry-based group research projects addressing novel questions about mechanisms that control plant growth and development. Laboratory section is required. Prerequisites: One Brown course with laboratory section in either Biology or Chemistry. Enrollment limited to 24 students.

Spr	BIOL0440	S01	20230	TTh	10:30-11:50(09)	(A. DeLong)

BIOL 0470. Genetics.

Genetic phenomena at the molecular, cellular, organismal, and population levels. Topics include transmission of genes and chromosomes, mutation, structure and regulation of the expression of the genetic material, elements of genetic engineering, and evolutionary genetics. One laboratory session and one discussion session per week. (Students should not plan to take BIOL 0470 after 1540.) Expected: BIOL 0200 (or equivalent placement). Students will be assigned to Lab sections the first week of class. If you plan to take BIOL 470 but are also considering registering for a course that conflicts with the BIOL 470 lecture period, you may be eligible to do so by enrolling in S02, an alternative section of BIOL 470. Enrollment in this section allows students asynchronous engagement with lectures which are recorded and posted to the course Canvas page at the end of each class period. In-person participation in laboratory meetings and exams, however, are still required.

Fall	BIOL0470	S01	10262	TTh	10:30-11:50(13)	(M. Johnson)

Fall	BIOL0470	S02	10263	Arranged		(M. Johnson)

BIOL 0480. Evolutionary Biology.

A broad introduction to the patterns and processes of evolution at diverse levels of biological organization. Topics covered include natural selection, adaptation, speciation, systematics, macroevolution, mass extinction events, and human evolution. Students will be given the opportunity to do their 23andMe ancestry analyses as a means of integrating the topics that span genomics to human variation. Weekly discussion sections involve active learning simulations and discussions of papers from the primary literature. Occasional problem sets involve computer exercises with population genetics and phylogeny reconstruction. Expected: BIOL 0200 (or equivalent placement).

Fall	BIOL0480	S01	10289	MWF	9:00-9:50(09)	(D. Rand)

Fall	BIOL0480	S02	16661	Arranged		(D. Rand)

BIOL 0495. Statistical Analysis of Biological Data.

A first course in probability distributions and the use of statistical methods for biological data. Topics covered will include describing data, statistical inference (hypothesis tests and confidence intervals), analyzing associations, and methods for categorical data (contingency tables and odds ratios). Methods will be applied to data drawn from areas of biological inquiry. For statistics or related science credit in Biology programs. Expected background: BIOL 0200 or equivalent, math equivalent to MATH 0100. This course is for related science credit only in Biological Sciences concentration programs.

Spr	BIOL0495	S01	20255	TTh	2:30-3:50(11)	(S. Ramachandran)

BIOL 0500. Cell and Molecular Biology.

This course examines the structure and function of the basic unit of an organism, the cell. An experimental approach is used to examine cellular functions, ranging from gene transcription, cell division and protein secretion, to cell motility, and signal transduction. Relevance to health and disease will be considered. Expected: BIOL 0200 (or equivalent advanced placement biology 4/5).

Spr	BIOL0500	S01	20231	MW	3:00-4:20(10)	(G. Valdez)

BIOL 0510. Introductory Microbiology.

Introduces role of microbes in our understanding of biology at the cellular and molecular level. Focuses on microbial significance for infectious disease, public health, genetics, biotechnology, and biogeochemical cycles. Laboratory involves basic microbiological techniques and selection and manipulation of microbes. Expected: BIOL 0200 (or equivalent

placement). Students MUST register for the lecture section, conference, and the lab. Enrollment limited to 108.

Spr	BIOL0510	S01	20218	MW	8:30-9:50(02)	(A. Dugan)

BIOL 0530. Principles of Immunology.

Introduction to experimental and theoretical foundations of immunology. Focuses on concepts, landmark experiments and recent advances. Topics include innate and adaptive immunity; structure/function of antibody molecules and T cell receptors; regulation of immune responses through cellular interactions. Applications of concepts to medically significant issues (vaccines, transplantation, inflammation, autoimmunity, cancer, HIV/AIDS) are discussed. Interpretative analysis of experimental data is emphasized. Expected background: BIOL 0200 or equivalent placement credit.

Fall	BIOL0530	S01	10247	TTh	2:30-3:50(12)	(A. Dugan)

BIOL 0800. Principles of Physiology.

Introduction to the function of organ systems with an emphasis on human physiology, includes basic concepts in cell and organ system physiology as well as fundamentals of modern trends in physiological science, emphasizes the application of physical and chemical principles to organ function at both the cellular and systemic levels. Expected: BIOL 0200 or equivalent. S02 – You may take the lecture portion asynchronously If you have a class conflict during the lecture time. You Must identify the course in conflict for an override. The requirements for S02 are in-person lab offered at various times during the week and taking the 3 exams on the same day they are scheduled. S03 – Virtual option for students who are not on campus. (see description)

Spr	BIOL0800	S01	25932	TTh	10:30-11:50(09)	(J. Stein)

Spr	BIOL0800	S02	25933	Arranged		(J. Stein)

Spr	BIOL0800	S03	25934	Arranged		(J. Stein)

BIOL 0940A. Viral Epidemics.

This sophomore seminar will examine epidemics (outbreaks) of viral infections from a historical perspective. We will also cover current literature and up to the minute news accounts of infectious disease related outbreaks occurring around the globe. The major focus will be on virus related diseases but any microbial outbreak in the news will be explored. The seminar will cover basic aspects of microbial pathogenesis so students can gain an appreciation of microbial host interactions. Essential writing skills will also be developed. Enrollment limited to 20 sophomore students.

Fall	BIOL0940A	S01	10265	Th	4:00-6:30(04)	(W. Atwood)

BIOL 0940D. Rhode Island Flora: Understanding and Documenting Local Plant Diversity.

This Sophomore Seminar focuses on species level identification of plants in Rhode Island and will cover the dominant plant species in each of the state's main habitats including coastal wetlands and uplands, freshwater wetlands, peatlands, upland forests, and disturbed areas. Students will learn to identify plants using online interactive keys as well as more technical dichotomous keys and will also cover basic ecological processes in each habitat including the interaction of soils, geology, and hydrology. Materials related to plant morphology, plant taxonomy, plant evolution, understanding phylogenetic trees, and botanical illustration. Instructor permission required.

Fall	BIOL0940D	S01	10290	F	1:00-5:00	(R. Kartzinell)

BIOL 0960. Independent Study in Science Writing.

BIOL 0960 (fall/spring) is a half credit Independent Study in Science Writing course incorporating a nontechnical science journalism component into the Biology curriculum. Assignments may include investigative or analytical reviews, or feature articles on ethical or social impacts of new discoveries in the biological sciences. BIOL 0960 requires the submission of a formal project proposal completed collaboratively by the student and faculty mentor (see the Biology Undergraduate Education research page for details). BIOL 0960 is not for concentration credit in the biological sciences programs.

BIOL 1040. Ultrastructure/Bioimaging.

This course examines microscopy and image analysis in the life sciences. Theoretical and practical aspects of microscopy will be discussed. Students will obtain hands-on experience with electron microscopy, light microscopy, fluorescence microscopy, and confocal microscopy. Students

will learn to display images in 3D. Advanced undergraduates. Instructor permission required.

Spr BIOL1040 S01 20232 M 2:00-5:00 (G. Williams)

BIOL 1050. Biology of the Eukaryotic Cell.

This course examines subcellular processes and structure/function roles of macromolecular complexes regulating major cellular activities in eukaryotic cells. Course content will cover cellular and molecular techniques in cell biology, functions of cellular compartments, and the organization and expression of genetic information in eukaryotes, comparing normal and pathological states. Lectures and readings will emphasize the experimental basis for knowledge in modern cell biology using original literature and current research in cell/molecular biology. You will learn to read and analyze published research as well as master current concepts and understanding of cellular structure and function. You will then apply this mastery to propose an original research project that would advance those understandings. For advanced undergraduates and beginning graduate students. Complementary to BIOL 1270 and 1540. Prerequisites: BIOL 0280 or 0470 or 0500, or instructor permission. Graduate students register for BIOL 2050.

Fall BIOL1050 S01 17977 TTh 1:00-2:20(06) (C. Toth)

BIOL 1070. Biotechnology and Global Health.

This course examines contemporary biotechnologies used to combat the predominant, worldwide problems in human health. Global health will be addressed from the scientific and engineering perspectives while integrating public health policy, health systems and economics, medical and research ethics, and technology regulation and management. This course is intended for graduate and advanced undergraduate students in biology, engineering, or related fields who have an interest in global health initiatives. Expected background: BIOL 0200 and BIOL 0800, or equivalents. Preference will be granted to graduate students in the Biotechnology and Biomedical Engineering programs. Only for related course credit in Biology. Enrollment limited to 20. Instructor permission required.

Fall BIOL1070 S01 10253 TTh 9:00-10:20(05) (J. Schell)

BIOL 1100. Cell Physiology and Biophysics.

Current topics in cell physiology, with an emphasis on membrane-mediated interactions between cells and their environment. Topics may include: ion channel structure, function and regulation; intracellular regulatory molecules; mechanisms of sensory transduction; membrane receptors and second messenger systems; vesicle secretion; and cytoskeletal regulation of cell function. Lectures, discussion, and student presentations of the current literature. Expected: BIOL 0800 or NEUR 0010. Instructor permission required. Enrollment limited to 30, and admission is based on seniority -- graduate students, seniors, then juniors. (Not for first and second-year undergraduates.) Students must request an override code through C@B.

Fall BIOL1100 S01 18963 M 3:00-5:30(03) (D. Horrigan)

BIOL 1110. Topics in Signal Transduction.

Signal transduction is one of the most rapidly developing fields in biomedical sciences. Defects in signaling pathways can be responsible for diseases such as cancer, diabetes, cardiovascular disorders and psychoses. This course offers students an overview of the molecular pathways that allow cells to receive and process signals from their external environment, with an emphasis on the emerging state-of-the-art techniques used in their study. Expected background: BIOL 0200, 0280, 0470, or 0500.

Fall BIOL1110 S01 10258 W 3:00-5:30(10) (E. Oancea)

BIOL 1120. Biomaterials.

A biomaterial is defined as a material suitable for use in medical implants that come in direct contact with patients' tissues. These include polymers, metals, and ceramics, and materials obtained from biological sources or through recombinant biotechnology. Goal: to provide comprehensive coverage of biomaterial science and technology. Emphasizes the transition from replacement to repair strategies. For advanced undergraduates and graduate students. Prerequisite: BIOL 0800 or instructor permission.

Spr BIOL1120 S01 20222 Arranged (Y. Dingle)

BIOL 1140. Tissue Engineering.

Tissue engineering is an interdisciplinary field that incorporates progress in cellular and molecular biology, materials science, and engineering, to advance the goal of replacing or regenerating compromised tissue function. Using an integrative approach, we will examine tissue design and development, manipulation of the tissue microenvironment, and current strategies for functional reconstruction of injured tissues. Expected: CHEM 0330, plus BIOL 0500 or 0800. Enrollment limited to 20. Instructor permission required.

Fall BIOL1140 S01 17952 W 3:00-5:30(10) (D. Hoffman-Kim)

BIOL 1150. Stem Cell Engineering.

Stem cell engineering focuses on using adult, embryonic, and induced pluripotent stem cells to repair damaged or diseased tissues. This course will examine the role of stem cells in development, tissue homeostasis, and wound healing, as well as how they can be used for tissue engineering and cell-based regenerative therapies. We will also discuss the ethical, legal, and regulatory issues that accompany current and emerging stem cell engineering endeavors. The course will use an inverted lecture and classroom discussion format to effectively deliver relevant information. Emphasis is placed on oral and written communication skills applied to assignments, tests, and individual projects. As an additional part of this course, students will receive hands-on training in how to culture cells and assess samples for stemness characteristics in a group laboratory setting. Course timing conflicts, particularly with the last hour of the Friday

Spr BIOL1150 S01 20249 Th 3:00-5:30 (E. Darling)

BIOL 1160. Principles of Exercise Physiology.

Application of the basic principles of physiology to the study of the response mechanisms of the human body during exercise. Topics include muscle and neural control, energy metabolism, cardiovascular and respiratory effects, endocrinology, principles of training, and special topics (e.g., diving, high altitude, and microgravity). Student presentations based on scientific articles are included. Expected: BIOL 0800 or written permission of the instructor.

Fall BIOL1160 S01 17788 MWF 12:00-12:50(15) (A. Smith)

BIOL 1222A. Current Topics in Functional Genomics.

A technological revolution in genomics has exponentially increased our ability to gather biological data. A host of new methods and types of analysis has arisen to accommodate this dramatic shift in data collection. The broad scope of inquiry has ushered in an era of "system-wide" approaches and brute-force strategies where rare signals can be detected and studied. In this seminar we will cover papers that embody this new approach. Students typically have taken an advanced undergraduate-level course in biology.

Fall BIOL1222A S01 18447 T 3:00-5:30 (E. Larschan)

Spr BIOL1222A S01 20234 W 3:00-5:30(10) (W. Fairbrother)

BIOL 1250. Host-microbiome Interactions in Health and Disease.

Will focus on current understanding of how various microbiomes communicate and interact with the host and the factors that influence these interactions. We will discuss how the new technologies such as metagenomics and metabolomics have enhanced our understanding of host-microbiome interactions in health and disease. Students will have the opportunity to participate in discussions on how to apply recent discoveries to disease processes, health restoration and maintenance. The course will help students develop skills in critical thinking and in reading and evaluating original scientific literature. Expected: students with a background in basic microbiology (BIOL 0530 or its equivalent). 20 enrollment.

Spr BIOL1250 S01 20219 Th 2:00-4:30 (S. Vaishnav)

BIOL 1260. Physiological Pharmacology.

Covers the physiology of human disease (e.g., Heart failure and arrhythmia; cancer signaling pathways with a focus on breast cancer; neurological disorders such as schizophrenia and Parkinson's disease) and discusses the pharmacology of the drugs used to treat disease. A group of the most commonly prescribed drugs is discussed in terms of their fundamental modes of action and clinical importance. Expected: BIOL 0800.

Fall BIOL1260	S01	10266	TTh	10:30-11:50(13)	(J. Marshall)
Fall BIOL1260	S02	10267	Arranged		(J. Marshall)

BIOL 1270. Advanced Biochemistry.

An advanced course in biochemistry, biochemical methods, and reading of the primary literature, featuring systematic coverage of the biochemistry of the central dogma, including DNA (replication, repair, recombination), RNA (regulation and mechanism of transcription, processing, turnover), and proteins structure, synthesis, modification, degradation, mechanisms of action, function). Expected: BIOL 0280, CHEM 0350, 0360. Graduate students register for BIOL 2270.

Fall BIOL1270	S01	10270	TTh	2:30-3:50(12)	(A. Salomon)

BIOL 1290. Cancer Biology.

Provides a conceptual understanding of molecular events underlying development of human cancer. Focused on genetic changes leading to malignant transformation of cells. Covers cell cycle control, DNA damage, mutagenesis, cancer predisposition syndromes, oncogenic viruses, tumor immunology, metastasis, cancer chemotherapy and drug resistance. Lecture plus discussion of primary literature. Prerequisites: BIOL 0280 OR BIOL 0470 OR BIOL 0500.

Fall BIOL1290	S01	10306	MW	3:00-4:20(10)	(A. Zhitkovich)

BIOL 1295. Fundamentals of Cancer Immunotherapy.

Fundamentals of Cancer Immunotherapy focus on how are understanding of the relationship of cancer with the host immune system has allowed the development of a new generation of therapies. The course will be delivered by lecture/seminar and group discussions. The course covers contemporary knowledge of tumor-immune cell interactions, and the principles of immunotherapeutic approaches currently being applied in the clinic and in development. The course is designed so that students will view cancer immunotherapy through a range of different lenses; from intricate molecular details to cellular ecosystems and organismal effects. Lecture materials will provide detailed descriptions of the basic concepts involved and original research articles will be used to help develop critical thinking in the cancer immunotherapy field.

Recommended Prerequisites: At least two of the following or their equivalents: BIOL 0280, BIOL 0500, BIOL 0470, BIOL 0530, BIOL 1290

Spr BIOL1295	S01	26130	MW	3:00-4:20(10)	(S. Lawler)

BIOL 1300. Biomolecular Interactions: Health, Disease and Drug Design.

Interactions between the molecules of life—proteins, RNA, DNA, membrane components—underlie all functions necessary for life. This course focuses on how nature controls these interactions, how these interactions can go awry in disease, and how we can learn the rules of these interactions to design drugs to treat disease. Students will review the physical basis of molecular interactions, learn classic and state-of-the-art high-resolution and high-throughput tools used to measure interaction, and survey the experimental and computational strategies to harness these interactions using a case study in rational drug design. Prerequisite: Introductory Biochemistry (BIOL 0280). Enrollment limited to 20; instructor permission.

Fall BIOL1300	S01	10272	M	3:00-5:30(03)	(N. Fawzi)

BIOL 1310. Developmental Biology.

Covers the molecular and cellular events of development from fertilized egg to adult. Genetic basis of body form, cell fate specification and differentiation, processes controlling morphogenesis, growth, stem cells and regeneration will be examined. Differential gene regulation, intercellular signaling and their evolutionary conservation will be central to discussion of mechanisms governing developmental processes. Additional topics: developmental plasticity, impact of epigenetic and environmental factors, and basis of disease gleaned from developmental biology research. Live embryos will complement and reinforce concepts covered in class. Enrollment limited to 36. Expected: BIOL 0200 (or equivalent), and one course in genetics, cell biology or embryology.

Fall BIOL1310	S01	10274	TTh	9:00-10:20(05)	(K. Wharton)

BIOL 1330. Biology of Reproduction.

This course is an advanced, seminar-based course. Primary literature is emphasized to complement the format of extensive student seminar presentations. It is essential that students have a strong background in biology in order to gain the most from this course. The emphasis of the course is student seminar presentation and extensive discussion on

the material. This is often the first opportunity for students to present/discuss science in a seminar format. Expected background: a course in Cell Biology (e.g. BIOL 0500 or 1050), and two additional Biology courses above the introductory (BIOL 0200) level. Enrollment limited to 20.

Spr BIOL1330	S01	20236	M	3:00-5:30(13)	(G. Wessel)

BIOL 1435. Computational Methods for Studying Demographic History with Molecular Data.

This course broadly covers the field of population genetics and genomics, and focuses on how inferences about demographic history can be made from genetic variation observed across populations today. The main question we will endeavor to answer in class is "How can we infer demographic history in a population using next-generation sequencing data?" Students will also learn how to apply computational tools/methods to infer demographic history using both simulated and real DNA sequencing data.

Spr BIOL1435	S01	20256	Arranged		(E. Huerta-Sanchez)

BIOL 1470. Conservation Biology.

Conservation Biology is the scientific study of the phenomena that affect the maintenance, loss, and restoration of biological diversity. Topics covered include: 1) the impacts of global warming, species invasions, and habitat destruction on biodiversity, 2) strategies developed to combat these threats, and 3) a consideration of key economic and ethical tradeoffs. Special attention will be paid to current debate and controversy within this rapidly emerging field of study.

Fall BIOL1470	S01	10294	TTh	9:00-10:20(05)	(D. Sax)

BIOL 1505. Environmental Physiology.

This course seeks to explore the physiological mechanism by which animals are adapted to live in our planet's diverse habitats. We study this topic by considering the physical and chemical properties of the environment, and how these properties shape the organismal functioning and performance. No animal is off limits to our exploration, as we will look at both vertebrates and invertebrates alike. Overarching themes will emphasize the power of natural selection as an evolutionary force that writes the "rules" of life, particularly in terms of survival.

Spr BIOL1505	S01	25871	MW	8:30-9:50(02)	(M. Fuxjager)

BIOL 1515. Conservation in the Genomics Age.

The course will introduce students to the rapidly developing field of molecular ecology, emphasizing its importance for conservation biology. Students will explore key principles in evolutionary ecology based on readings, lectures, and discussions. Participants will also gain practical experience with ecological, genomic, and computational methods in the lab. This course is intended for advanced undergraduate and graduate students. Suggested prerequisites include Principles of Ecology (0420); Evolutionary Biology (0480) or Genetics (0470); the Lab Techniques Workshop for Biology Students provided by MDL; or similar with permission. Students will obtain permission from the professor to enroll.

Fall BIOL1515	S01	10291	MWF	9:00-9:50(09)	(T. Kartzinel)

BIOL 1525. Pathogenomics: Analysis, interpretation and applications of microbial genomes.

Pathogen genomes offer a wealth of information—from the discovery of new gene functions to helping to pinpoint the source of a food borne disease outbreak—and have become an increasingly widespread tool in microbiology in recent years. This course will introduce the fundamentals of genome sequencing and analysis for the study of microbial pathogens, and discuss current applications of these techniques in diverse microbial taxa (viruses, bacteria, fungi and parasites). In addition to lectures, the course will include hands-on computational analysis of pathogen genomic data in which students will learn how to analyze genomic data and apply these skills to an independent project investigating a novel question using a publicly available genomic dataset. Students should have taken introductory courses in genetics or microbiology (either BIOL0470 or BIOL0510) and programming (CSCI0111 or higher) prior to enrolling in this class.

Spr BIOL1525	S01	26550	TTh	9:00-10:20(05)	(C. Cuomo)

BIOL 1530. Emergency Medical Systems: An Anatomy of Critical Performance.

Students taking BIOL 1530 will explore Emergency Medicine and the many subjects that make up the practice of providing care to patients at

the most critical and dire moments of their lives. We will read, discuss, and write about Trauma, Medical Malpractice, Death and Dying, Refugee and Disaster Medicine, Interpersonal Violence, and Crisis focused Medical Ethics, among others, all viewed through the lens of Emergency Medicine. You will shadow in the Emergency Department of a Trauma Center and debrief with your TA's in weekly meetings, where the class topics will be discussed in open forums. This class, formerly PHP1520, has created a transformative experience for more than 30 years and will continue to foster new perspectives and ideas for every student who participates.

Spr BIOL1530 S01 20259 W 3:00-5:30(10) (B. Becker)

BIOL 1540. Molecular Genetics.

Even in this era when whole genome DNA sequencing has become routine, there are still thousands of eukaryotic genes with unknown functions. Genetic screens for mutations that alter pathways of interest remain the premier approach to understanding gene function in the context of the organism. In Molecular Genetics students will learn the key concepts involved in designing and interpreting genetic screens using the powerful tools available in model animal, plant, and fungal organisms. Students will also learn how to understand and analyze results presented in the primary scientific literature. Furthermore, students will gain an appreciation of how the field of genetics has changed through discoveries and technological advances made over the past 50 years. Graduate students should register for BIOL 2540.

Spr BIOL1540 S01 20237 TTh 2:30-3:50(11) (Y. Huang)

BIOL 1545. Human Genetics and Genomics.

This course will exemplify the power of genetically informed approaches to understanding human biology. It is intended for advanced undergraduate students and graduate students; prerequisites include BIOL0470 or equivalent. The course is based in lectures, reading material (textbook and primary literature), and in-class discussions. Course topics include: medical genetics and genomics; methods to study human genotypes and related phenotypes; industry-related topics; and ethical and societal implications of genome science. It will benefit students with career interests in basic science, medicine, biotechnology, or science policy. Enrollment is limited to 20 students; selection will be based on seniority, prerequisites, and registration order.

Spr BIOL1545 S01 20239 W 3:00-5:30(10) (E. Morrow)

BIOL 1555. Methods in Informatics and Data Science for Health.

The goal of this course is for students to develop a solution that uses data science and informatics approaches to address a biomedical or health challenge. This course will teach informatics and data science skills needed for public health and biomedicine research. Emphasis will be given to algorithms used within the context of biomedical research and health care, including those used in biomolecular sequence analysis, electronic health records, clinical decision support, and public health surveillance. This course has been developed as a Course-based Undergraduate Research Experience (CURE), where students will gain experience with the scientific method, its application, and presentation.

Spr BIOL1555 S01 20221 M 3:00-5:30(13) (E. Chen)

BIOL 1560. Virology.

Emphasizes the understanding of molecular mechanisms of viral pathogenesis. Begins with a general introduction to the field of virology and then focuses on the molecular biology of specific viruses that are associated with human disease. Lectures based on current literature. Prerequisite: BIOL 0280, 0470, or 0530, or instructor permission.

Fall BIOL1560 S01 10248 MWF 9:00-9:50(09) (A. Jamieson)

BIOL 1565. Survey of Biomedical Informatics.

Survey course provides overview of field of biomedical informatics. Topics include computer science, healthcare, biology, social science. This course is designed to be complementary to BIOL 1555. Emphasis given to understanding the organization of biomedical information, effective management of information using computer technology, impact of such technology on biomedical research, education, patient care. Major aim explores the process of developing and applying computational and information science techniques for assessing current information practices, determining information needs of health care providers and patients, developing interventions or supporting clinical practice using informatics, and evaluating the impact of informatics solutions from a biomedical perspective.

Fall BIOL1565 S01 10250 M 3:00-5:30(03) (N. Sarkar)

BIOL 1575. Evaluation of Health Information Systems.

This course covers the field of evaluation of health information systems (HIS) in a range of roles and environments, in the US and worldwide. It includes topics in health information system (HIS) design and deployment, healthcare workflow, quantitative and qualitative evaluation methods and socio-technical environment for HIS. Emphasis is given to understanding the range of evaluation questions that can be asked, identifying the key stakeholders, understanding available evaluation techniques, and designing rigorous but achievable studies. Examples will include Open Source systems, medical Apps, and economic evaluation, the role of evaluation frameworks and theories, and notable HIS successes and failures. Recommended: past or concurrent enrollment BIOL 1565 or a public health course covering clinical research.

Fall BIOL1575 S01 10251 TTh 1:00-2:20(06) (H. Fraser)

BIOL 1600. Development of Vaccines to Infectious Diseases.

Provides background steps involved in vaccine development, from conceptualization to production to deployment. Considers infectious diseases and associated vaccines in context of community health. Appropriate for students wanting to gain an understanding of vaccine science. Provides a foundation for advanced courses in immunology and infectious disease, biomedical research, or medical/graduate studies. Activities include a weekly section meeting for discussion of relevant primary literature, and a final project of the student's choice in the form of an in-class presentation, a research paper or an approved alternative format. Expected: BIOL 0200 or equivalent placement; BIOL 0530, and at least one additional biology course.

Spr BIOL1600 S01 20220 MW 3:00-4:20(10) (S. Vaishnav)

BIOL 1610. Experimental Neurobiology.

Intensive laboratory experience in neuroscience appropriate for students with basic background in Neurobiology. Learn and employ the classical neurophysiological techniques of extracellular recording, intracellular recording and receptive field mapping using a variety of animal species. Experiments will include recording of sensory signals in the cockroach leg; frog sciatic nerve and sciatic nerve/muscle preparation; intracellular recording of neurons in Aplysia; receptive field mapping in frog skin; and visual field mapping in the frog tectum. Instruction on and practice of effective science writing is another component to this course. Labs are supplemented by informal lectures. Enrollment limited to 18. Please request override through C@B. Overrides will not be given until after the first course meeting.

Spr BIOL1610 S01 26123 W 1:00-6:00 'To Be Arranged'

BIOL 1630. Big Data Neuroscience Lab.

Recent technological developments have transformed neuroscience research, enabling us to generate comprehensive 'big data' sets that are often shared freely amongst the neuroscience community. This lab course will explore strategies to effectively use such open-sourced neuroscience data sets. Students will identify fundamental open questions in brain science and develop strategies to mine open-source sequencing, imaging and connectivity data to address their research questions. Please see NEUR1630 for registration instructions.

Fall BIOL1630 S01 17965 MW 2:00-3:20 (A. Fleischmann)

BIOL 1650. Structure of the Nervous System.

Combined lecture and laboratory course on the anatomy of the central nervous system. Lectures survey the circuitry of the major neural systems for sensation, movement, cognition, and emotion. Laboratory exercises (Mon. 10:30-12:30) include brain dissections, microscopy of neural tissue, and discussion of clinical cases. Prerequisites: NEUR 0010, NEUR 1020, and NEUR 1030. Please see NEUR1650 for registration instructions.

Fall BIOL1650 S01 10282 TTh 2:30-3:50(12) (D. Berson)

BIOL 1810. 21st Century Applications in Cell and Molecular Biology.

Twenty-first century applications in cell and molecular biology focuses on the structure and function of macromolecules and cells and how they are altered in disease and therapy. This course will explore physical principles underlying cell function, along with biophysical approaches for solving problems of cell and molecular biology. Cutting-edge molecular and cellular-based therapeutics will be discussed throughout this course; this includes viral gene delivery constructs, novel platforms for tissue

engineering, CRISPR genome editing, and immune checkpoint therapy. This course is particularly suitable for undergraduate students interested in basic medical research, graduate school, or research-based careers in biotechnology or pharmaceutical industry.

Spr BIOL1810 S01 20242 MWF 10:00-10:50(03) (M. Dawson)

BIOL 1820. Environmental Health and Disease.

Humans live, work, and play in complex chemical environments. BIOL1820 examines how environmental exposures impact health and contribute to disease. We will discuss contamination in the context of colonialism and capitalism as well as critically assess the ways society shapes science as a discipline. The course covers basic concepts in toxicology, physiology, and molecular biology and is divided into 6 units. The first unit, Science, Society, and Scientific Funding, will introduce you to the main themes of the course. The remainder of the course will be divided into the following units: radiation, lead, per- and polyfluoroalkyl substances (PFAS), endocrine disruptors, and emerging environmental concerns. For each unit, students will learn how contamination affects different communities and examine the biological systems impacted by contaminant exposure. BIOL1820 is designed for third and fourth year undergraduates, and is open to others with permission.

Spr BIOL1820 S01 20269 TTh 10:30-11:50(09) (J. Plavicki)

BIOL 1865. Toxicology.

Toxicology is the science that describes the adverse biological effects of exogenous chemical and physical stressors, including environmental, industrial, and agricultural chemicals and pharmaceuticals. This course will introduce the principal biological processes that determine an organism's response to a toxicant, including absorption, distribution through a biological system, metabolism, elimination, and effects at the site(s) of action. We will discuss modern challenges in toxicology, such as assessing toxicity of mixtures and testing some of the thousands of untested chemicals in commerce. The material will be presented in lecture and student-led discussions, with readings from the toxicology literature.

Spr BIOL1865 S01 20270 TTh 1:00-2:20(08) (D. Spade)

Spr BIOL1865 S02 25752 Arranged (D. Spade)

BIOL 1885. Human Anatomy and Biomechanics.

Human Anatomy and Biomechanics examines the structure of the human body from the perspectives of biomechanics, evolution, and development, focusing on the musculoskeletal system, sensory systems, and the complex, multifunctional organ of the human skin. The course considers biological form and function at multiple levels of organization and in diverse contexts, and offers students opportunities to synthesize, question, and write about ideas presented in class. The course includes a weekly, 2-hr laboratory section in which students will use kinesthetic learning to develop deep knowledge of anatomico-medical terminology, study osteology and develop powers of observation working with human and non-human animal bones, dissect a preserved rabbit specimen to learn the soft-tissue anatomy of a mammal and visit the human anatomy dissection lab at the Alpert Medical School.

Spr BIOL1885 S01 20257 TTh 1:00-2:20(08) (S. Swartz)

BIOL 1945. Outbreaks and Infections: Harnessing History and Preventing Future Epidemics.

This senior capstone course will investigate epidemic diseases that have plagued mankind in the past and explore the factors that contribute to the continued spread of diseases today. This course will emphasize the biology of both infectious and noninfectious diseases by exploring mechanisms of spread, pathogenesis, and prevention. Attention will also be given to environmental, economic, geographical, and social contributors to disease. Interactive class discussions, student presentations, analysis of primary literature, and multimedia homework will develop student skills culminating in an independent research project that dissects the life history of a disease and provides a forward-thinking strategy to combat it.

Fall BIOL1945 S01 18746 TTh 1:00-2:20(06) (A. Dugan)

BIOL 1950. Directed Research/Independent Study.

Directed research/independent study in biological sciences: basic science, social studies of biomedical science, and clinically-oriented projects, mentored by individual faculty members in the Division of Biology and Medicine. Sites include campus and hospital based facilities. Projects can serve as the basis for Honors theses, or to fulfill research requirements in

a Bio-Med concentration program. Students planning to use 1950/1960 to fulfill a concentration requirement must receive approval from the concentration advisor. No more than two (2) semesters of BIOL 1950/1960 may be used toward a concentration program in the biological sciences. Faculty from outside the Division may supervise projects for bio-med program concentrators, but should do so using their Department's own Independent Study course number.

BIOL 1960. Directed Research/Independent Study.

Directed research/independent study in biological sciences: basic science, social studies of biomedical science, and clinically-oriented projects, mentored by individual faculty members in the Division of Biology and Medicine. Sites include campus and hospital based facilities. Projects can serve as the basis for Honors theses, or to fulfill research requirements in a Bio-Med concentration program. Students planning to use 1950/1960 to fulfill a concentration requirement must receive approval from the concentration advisor. No more than two (2) semesters of BIOL 1950/1960 may be used toward a concentration program in the biological sciences. Faculty from outside the Division may supervise projects for bio-med program concentrators, but should do so using their Department's own Independent Study course number.

BIOL 2010A. Introduction to Molecular Research in the Life Sciences.

In this practical skill-building course, entering PhD students in the Molecular Biology, Cell Biology, and Biochemistry Graduate Program (MCBGP) will participate in an immersive laboratory experience. Students will practice foundational molecular methods for analysis of nucleic acids and proteins. Students will also develop key professional skills including workflow and time management, record keeping, experimental rigor and reproducibility, working in a team, and communication of experimental results. In addition, students will learn about experimental technologies and model organisms used in the molecular life sciences through interactive modules led by MCBGP trainer laboratories. Enrollment is restricted to first-year MCBGP PhD students.

Fall BIOL2010A S01 10277 MTWThF 10:30-12:00 (F. Accornero)

BIOL 2010B. Introduction to Data Science in Molecular Biology.

In this course, second year PhD students in the Molecular Biology, Cell Biology, and Biochemistry Graduate Program (MCBGP) will learn about the basic methodologies to analyze and interpret omics datasets. This course combines lectures with hands-on workshops on data science applied to molecular research for the analysis of nucleic acids and proteins. Student will acquire knowledge of the data generated by modern molecular biology, and of the computational methods used to analyze and interpret these datasets. The hands-on workshop will teach students how to utilize the state-of-the-art computational workflows to create reproducible pipelines for data analysis. Students will also learn the best practices in data management, organization and sharing, with a focus on the big data generated by modern sequencing techniques in the life sciences. Enrollment is restricted to second year MCBGP PhD students. This is a half credit course.

Spr BIOL2010B S01 20243 T 10:00-1:00 (N. Neretti)

Spr BIOL2010B S02 20244 T 10:00-1:00 (N. Neretti)

BIOL 2015. Conservation in the Genomics Age.

The course will introduce students to the rapidly developing field of molecular ecology, emphasizing its importance for conservation biology. Students will explore key principles in evolutionary ecology based on readings, lectures, and discussions. Participants will also gain practical experience with ecological, genomic, and computational methods in the lab. This course is intended for advanced undergraduate and graduate students. Suggested prerequisites include Principles of Ecology (0420); Evolutionary Biology (0480) or Genetics (0470); the Lab Techniques Workshop for Biology Students provided by MDL; or similar with permission. Students will obtain permission from the professor to enroll.

Fall BIOL2015 S01 10292 MWF 9:00-9:50(09) (T. Kartzinel)

BIOL 2018. Management Strategies in Biotechnology.

This course, taken the second semester, goes in depth into the numerous strategies in biotechnology. Significant differences in the strategies of small companies versus large companies, and device companies versus drug companies will be discussed with ample use of biotechnology case studies. At the end of this course, the successful student will: Understand the process of managerial decision making in the pharma/biotech industry

Understand the basic principles of Decision Science, the application of quantitative analysis (modeling) to inform managerial decision making. Gain exposure to basic frameworks and tools used by management consultants to define strategic options.

Spr BIOL2018 S01 20223 M 5:00-7:30 (Y. Jong)

BIOL 2020. Biotechnology Science and Industry.

This course provides a comprehensive overview of the primary functional roles and steps involved in developing and commercializing a novel technology/scientific breakthrough within the biotechnology industry. This course is particularly suitable for students interested in pursuing a career within a biotechnology company, or for those interested in developing an in-depth knowledge of how the science of biotechnology becomes real world products. Pre Requisites: Foundations of Living Systems (BIOL0020), Principles of Physiology (BIOL0080), and Principles of Economics (ECON0110)/equivalent or instructor's permission is required.

Fall BIOL2020 S01 10284 Th 5:00-7:30 (E. Huang)

BIOL 2030. Foundations for Advanced Study in the Life Sciences.

BIOL2030 is a graduate-level course focused on multidisciplinary approaches to biological questions. The mechanisms and regulation of basic cellular processes involving nucleic acids (synthesis, structure, maintenance and transmission) and proteins (synthesis, maturation, function) and integration of those processes into more complex circuits (signaling, cell cycle control, development) will be presented through examples from the primary scientific literature. There are no prerequisites for this course. Enrollment is limited to graduate students. BIOL2030 is required for Ph.D. students in the MCB Graduate Program. All other students must obtain instructor permission.

Fall BIOL2030 S01 10278 TTh 9:00-10:20(05) (A. DeLong)

BIOL 2040. Ultrastructure/Bioimaging.

This course examines microscopy and image analysis in the life sciences. Theoretical and practical aspects of microscopy will be discussed. Students will obtain hands-on experience with electron microscopy, light microscopy, fluorescence microscopy, and confocal microscopy. Students will learn to display images in 3D. For graduate students and advanced undergraduates. Instructor permission required.

Spr BIOL2040 S01 20233 M 2:00-5:00 (G. Williams)

BIOL 2050. Biology of the Eukaryotic Cell.

This course examines subcellular processes and structure/function roles of macromolecular complexes regulating major cellular activities in eukaryotic cells. Course content will cover cellular and molecular techniques in cell biology, functions of cellular compartments, and the organization and expression of genetic information in eukaryotes, comparing normal and pathological states. Lectures and readings will emphasize the experimental basis for knowledge in modern cell biology using original literature and current research in cell/molecular biology. You will learn to read and analyze published research as well as master current concepts and understanding of cellular structure and function. You will then apply this mastery to propose an original research project that would advance those understandings. For advanced undergraduates and beginning graduate students. Complementary to BIOL 1270 and 1540. Prerequisites: BIOL 0280 or 0470 or 0500, or instructor permission. Undergraduate students register for BIOL 1050.

Fall BIOL2050 S01 17979 TTh 1:00-2:20(06) (C. Toth)

BIOL 2075. Evaluation of Health Information Systems.

This course covers the field of evaluation of health information systems (HIS) in a range of roles and environments, in the US and worldwide. It includes topics in health information system (HIS) design and deployment, healthcare workflow, quantitative and qualitative evaluation methods and socio-technical environment for HIS. Emphasis is given to understanding the range of evaluation questions that can be asked, identifying the key stakeholders, understanding available evaluation techniques, and designing rigorous but achievable studies. Examples will include Open Source systems, medical Apps, and economic evaluation, the role of evaluation frameworks and theories, and notable HIS successes and failures.

Fall BIOL2075 S01 10252 TTh 1:00-2:20(06) (H. Fraser)

BIOL 2078. Regulatory Affairs in Pharma, Med Device and Digital Health.

In a global regulatory environment, learning the process of moving a medical device, drug or biologic from conception to market can be daunting. This course will provide the framework for regulatory affairs strategic knowledge with a focus on the process from development to commercialization, and post commercialization in a global environment. This course is particularly suitable for students interested in pursuing a career within a biotechnology company, or for those interested in developing a foundational understanding of how regulatory and health authorities regulate products in order to safely and effectively bring products to patients. Preference given to Biotechnology Masters Therapeutic Science PhD.

Spr BIOL2078 S01 25941 Th 4:30-7:00 (K. Mahoney)

BIOL 2089. The Importance of Intellectual Property in Biotechnology.

This course delves into the various roles of intellectual property in biotechnology. In addition to providing a solid foundation in the fundamentals of intellectual property, the course will use case studies in biotechnology to explore in depth the interplay between specific scientific breakthroughs and intellectual property. An understanding of the science of biotechnology is critical for advanced understanding of the value and possibilities of biotechnology intellectual property.

Fall BIOL2089 S01 10254 W 2:00-4:30 (D. Holmader)

BIOL 2110. Drug and Gene Delivery.

Topics in drug delivery systems including history of the field, advantages of controlled release technology, stabilization and release of proteins, fabrication methods, regulatory considerations, economic aspects, patents and intellectual property rights, and more. Prepares students for research in industry and academia, and offers information for consultants in the field. Expected: BIOL 1090, 1120; CHEM 0350, 0360.

Fall BIOL2110 S01 18974 M 3:00-5:30(03) (E. Mathiowitz)

BIOL 2135. Pharmacokinetics and Drug Design.

Consists of the absorption, distribution, metabolism, and elimination of drugs. These factors, including dosage, determine the concentration of drugs at its sites of action, and intensity of effects. Will examine models describing the relationship between plasma drug concentrations and therapeutic drug effect. Will acquire biologic sampling techniques, analytic methods for measurement of drugs and metabolites, and procedures facilitating data used in designing drugs and dosage regimens. Prerequisite: BIOL 0800 or equivalent. Enrollment limited to 20. Preference given to graduate students in Biotechnology and BME, especially Masters students. Graduate students (PhD and ScM) from other programs enroll if permission of instructor is granted.

Spr BIOL2135 S01 25942 T 3:00-5:30 (D. Christian)

BIOL 2145. Molecular Targets of Drug Discovery.

This course emphasizes the role of cell physiology in the identification of drug targets and the development of novel drugs. Specific protein drug targets such as G-protein coupled receptors will be examined in detail from identifying a target to development of drugs for that target and the physiological consequences. Prerequisite: BIOL 0800. Enrollment limited to 20. Preference is given to graduate students in Biotechnology and BME, especially Masters students. Graduate students from other programs may enroll if permission of the instructor is granted. Students must request an override code through C@B.

Spr BIOL2145 S01 20247 T 10:00-12:30 (D. Horrigan)

BIOL 2150. Scientific Communication.

Focused on the effective dissemination of scientific information in biological and biomedical research disciplines. Students will develop the skills necessary to effectively communicate scientific ideas, experiments, and results relating to their PhD dissertation projects through activities common to the profession including writing a grant proposal and presenting research work orally. Each of the activities will be dissected into key components and developed through interactive discussions and peer review. Required for most second-year PhD students in the MCB and Computational Biology Graduate Program. Other qualified PhD students may enroll with instructor's permission.

Fall BIOL2150 S01 10279 W 2:00-5:00 (G. Valdez)

Fall BIOL2150 S02 10280 W 9:00-12:00 (S. Ramachandran)

BIOL 2167. In Vitro Models for Disease.

This course will use case studies to examine high burden diseases, their pathophysiology, treatment, and the models used to study the disease. Literature will be used to discuss the current models for the disease and the associated limitations of each of these models. The course will also cover the use of animals in research and how new in vitro models could be used to decrease their use. This course is intended for graduate students in biology, engineering, or related fields. Prerequisites: BIOL 0200 and 0800, or equivalent. Enrollment limited to 20 graduate students.

Spr BIOL2167 S01 25940 M 10:00-12:30 (J. Schell)

BIOL 2170. Molecular Pharmacology and Physiology.

Fundamental concepts in pharmacology and physiology from the cellular/molecular level to organ systems. Required of first-year graduate students in Molecular Pharmacology and Physiology. Students must request an override code through C@B.

Spr BIOL2170 S01 20248 MWF 10:00-11:30 (D. Horrigan)

BIOL 2180. Experiential Learning Industry, ELI.

Experiential Learning in Industry is restricted to biomedical engineering (BME) Sc.M. and biotechnology (Biotech) Sc.M. students, permission also required. The course is an extended in-depth learning experience in an industry environment related to the discipline of BME and Biotech. Industry environments include; medical device, pharmaceutical or biotechnology and industries that provide BME and Biotech relevant services to the aforementioned companies including patent law, licensing, regulatory and consulting. Students will pursue Experiential Learning in Industry during one summer plus one semester or during two semesters for which they will receive credit towards their degree. This course is restricted to BME and Biotech Masters students only. Students must have successfully completed the first year of the BME Masters Program. Slots are limited so permission is required.

Fall BIOL2180 S01 10255 Arranged (J. Schell)

Spr BIOL2180 S01 20224 Arranged (J. Schell)

BIOL 2220. Topics in Signal Transduction.

Signal transduction is one of the most rapidly developing fields in biomedical sciences. Defects in signaling pathways can be responsible for diseases such as cancer, diabetes, cardiovascular disorders and psychoses. This course offers students an overview of the molecular pathways that allow cells to receive and process signals from their external environment, with an emphasis on the emerging state-of-the-art techniques used to study signal transduction events. The course will cover the basic molecular steps of receptor-mediated pathways used in signal transduction and a series of applications that will allow students to understand the complexity of this rapidly developing field of research. We will discuss new ideas, mechanisms of disease, and unsolved problems in signal transduction primarily through reading and critical analysis of recent primary literature. Expected background: BIOL 0200, 0280, 0470, or 0500 or other classes that cover similar content.

Fall BIOL2220 S01 18916 W 3:00-5:30(10) (E. Oancea)

BIOL 2222B. Current Topics in Functional Genomics.

A technological revolution in genomics has exponentially increased our ability to gather biological data. A host of new methods and types of analysis has arisen to accommodate this dramatic shift in data collection. The broad scope of inquiry has ushered in an era of "system-wide" approaches and brute-force strategies where rare signals can be detected and studied. In this seminar we will cover papers that embody this new approach. Students typically have taken an advanced undergraduate-level course in biology.

Fall BIOL2222B S01 18448 T 3:00-5:30 (E. Larschan)

Spr BIOL2222B S01 20235 W 3:00-5:30(10) (W. Fairbrother)

BIOL 2230. Biomedical Engineering and Biotechnology Seminar.

Biomedical engineering and biotechnology are interdisciplinary fields that incorporate progress in biomedical sciences, the physical sciences, and engineering. To achieve success in these fields requires facility with interdisciplinary oral communication – this is the specific and practical focus of this course. Each week, doctoral students in the Biomedical Engineering and Biotechnology Graduate Programs will give research presentations and receive feedback from the audience to help improve their public speaking skills.

Fall BIOL2230 S01 10307 T 4:30-7:00 (D. Hoffman-Kim)

BIOL 2240. Biomedical Engineering and Biotechnology Seminar.

See Biomedical Engineering and Biotechnology Seminar (BIOL 2230) for course description.

Spr BIOL2240 S01 20272 T 4:00-6:30(16) (J. Morgan)

BIOL 2250. Survey of Modern Therapeutics.

Survey of Modern Therapeutics examines the process of drug discovery, development, and approval from target selection to commercialization. The course will provide students with a broad overview of central background concepts in drug development including cellular physiology, target-drug interactions, and pharmacokinetics/pharmacodynamics. The course will examine the preclinical stages of the traditional small molecule drug discovery process, from initial target identification and validation, through assay development, high throughput screening, hit identification, lead optimization and the selection of a candidate drug. The course will also go through the process of bringing a therapeutic into clinical trials, through FDA approval, and to the market. Students will study some of the modern approaches in therapeutics including small molecules, biologics, vaccines, anti-infectives, and cell therapies and their applications. There are no prerequisites, but a background in biology, chemistry, or a related field is strongly encouraged. Students must request an override code through C@B.

Fall BIOL2250 S01 10281 TTh 9:00-10:20(05) (D. Horrigan)

BIOL 2260. Physiological Pharmacology.

The objective of this course is to present drugs in the context of the diseases they are used to treat. A list of the Common medically prescribed drugs will be discussed in terms of their fundamental modes of action and clinical importance. Pertinent background biochemistry, physiology, and pathology is provided, e.g., the electrophysiology of the heart is discussed as a background to anti-arrhythmic drugs. Course is relevant for students interested in medicine journalism, law, government, precollege teaching, biomedical research, and pharmacy. Expected: background in physiology. For graduate students ONLY register for BIOL 2260; all others BIOL 1260.

Fall BIOL2260 S01 10268 TTh 10:30-11:50(13) (J. Marshall)

BIOL 2270. Advanced Biochemistry.

(Undergraduate students should register for BIOL 1270.)

Fall BIOL2270 S01 10271 TTh 2:30-3:50(12) (A. Salomon)

BIOL 2300. Biomolecular Interactions: Health, Disease, and Drug Design.

Interactions between the molecules of life-proteins, RNA, DNA, membrane components-underlie all functions necessary for life. This course focuses on how nature controls these interactions, how these interactions can go awry in disease, and how we can learn the rules of these interactions to design drugs to treat disease. Students will review the physical basis of molecular interactions, learn classic and state-of-the-art high-resolution and high-throughput tools used to measure interaction, and survey the experimental and computational strategies to harness these interactions using a case study in rational drug design. Prerequisite: Introductory Biochemistry. Enrollment limited to 20; instructor permission.

Fall BIOL2300 S01 10273 M 3:00-5:30(03) (N. Fawzi)

BIOL 2310. Developmental Biology.

Covers the molecular and cellular events of development from fertilized egg to adult. Genetic basis of body form, cell fate specification and differentiation, processes controlling morphogenesis, growth, stem cells and regeneration are examined. Differential gene regulation, intercellular signaling and evolutionary conversation are central to discussion of mechanisms governing developmental processes. Additional topics: developmental plasticity, impact of epigenetic and environmental factors, and basis of disease gleaned from developmental biology research. Live embryos complement and reinforce concepts covered in class. Expected: BIOL0200 (or equivalent), and one course in genetics, embryology, cell biology or molecular biology. Enrollment limited to 36. (Undergraduate students register for BIOL 1310.)

Fall BIOL2310 S01 10275 TTh 9:00-10:20(05) (K. Wharton)

BIOL 2350. The Biology of Aging.

Aging is a fundamental biological process. It is the major risk factor for age-related diseases such as cancer, cardiovascular disease, stroke, osteoporosis, arthritis and Alzheimer's, just to name a few. As life

expectancy has increased in the 20th century, these diseases have become the leading causes of death. Recent research has identified universal mechanisms that regulate organismal aging and impact all organ systems. Several gene networks that can regulate the rate of aging and multiple age-related diseases have already been discovered. These mechanisms are conserved throughout evolution and many key insights have been garnered from simple model organisms. Manipulation of these networks has been achieved by diet, genetic engineering, and most recently, with drugs. The goal of modern medicine is to increase healthy survival, as opposed to simply longevity. It is now generally acknowledged that increasing health span – the fraction of our life spans free of frailty and debilitating chronic disease – has become a realistic goal. This course will examine the new concept of "geroscience" – the molecular, cellular, and genetic foundations of the biology of aging, and how this knowledge can be applied to therapies for age-associated diseases. Course material will be based on the primary research literature. Prerequisites are a background in cell biology, molecular biology and genetics - such as BIOL0470, BIOL0280, BIOL0200, and BIOL0800.

Spr BIOL2350 S01 20245 Th 2:00-5:00 (J. Sedivy)

BIOL 2430. Topics in Ecology, Evolution and Organismal Biology.

Current literature in ecology, behavior, and evolutionary biology is discussed in seminar format. Topics and instructors change each semester. Representative topics have included: structuring of communities, biomechanics, coevolution, quantitative genetics, life history strategies, and units of selection. Expected: courses in advanced ecology and genetics.

Fall BIOL2430 S01 10295 M 3:00-5:30(03) (M. Fuxjager)

BIOL 2440. Topics in Ecology, Evolution and Organismal Biology.

See Topics In Ecology And Evolutionary Biology (BIOL 2430) for course description.

Spr BIOL2440 S01 25872 M 3:00-5:30(13) (M. Fuxjager)

BIOL 2450. Exchange Scholar Program.

Fall BIOL2450 S01 16538 Arranged 'To Be Arranged'

Fall BIOL2450 S02 16539 Arranged 'To Be Arranged'

Spr BIOL2450 S01 25205 Arranged 'To Be Arranged'

BIOL 2528. Innovation and Commercialization in Medical Devices, Diagnostics, and Wearables.

This course provides a comprehensive overview of concepts and steps involved in developing and commercializing novel technology/scientific breakthroughs for medical devices, diagnostics and wearables. This course is particularly suitable for students interested in pursuing a career within a medical device segment, or creating innovation-based companies, as well as for those interested in developing an in-depth knowledge of evolution of medical devices from research concepts to products in the market.

Spr BIOL2528 S01 20225 Th 9:30-12:00 (M. Analoui)

BIOL 2540. Molecular Genetics.

Even in this era when whole genome DNA sequencing has become routine, there are still thousands of eukaryotic genes with unknown functions. Genetic screens for mutations that alter pathways of interest remain the premier approach to understanding gene function in the context of the organism. In Molecular Genetics students will learn the key concepts involved in designing and interpreting genetic screens using the powerful tools available in model animal, plant, and fungal organisms. Students will also learn how to understand and analyze results presented in the primary scientific literature. Furthermore, students will gain an appreciation of how the field of genetics has changed through discoveries and technological advances made over the past 50 years. Undergraduate students should register for BIOL 1540.

Spr BIOL2540 S01 20238 TTh 2:30-3:50(11) (Y. Huang)

BIOL 2545. Human Genetics and Genomics.

This course will exemplify the power of genetically informed approaches to understanding human biology. It is intended for advanced undergraduate students and graduate students; prerequisites include BIOL0470 or equivalent. The course is based in lectures, reading material (textbook and primary literature), and in-class discussions. Course topics include: medical genetics and genomics; methods to study human genotypes and related phenotypes; industry-related topics; and ethical and societal

implications of genome science. It will benefit students with career interests in basic science, medicine, biotechnology, or science policy. Enrollment is limited to 20 students; selection will be based on seniority, prerequisites, and registration order.

Spr BIOL2545 S01 20240 W 3:00-5:30(10) (E. Morrow)

BIOL 2560. Advanced Virology.

The emphasis of this course will be on understanding the molecular mechanisms of viral pathogenesis. It will begin with a general introduction to the field of virology, a basic review of the immune response to viruses, and then focus primarily on the molecular biology of specific viruses that are associated with clinical human disease. Lectures will be based on the current literature and provide historical context. Students will become familiar with primary literature and produce their own original research proposal by the end of the semester.

Fall BIOL2560 S01 10249 MWF 9:00-9:50(09) (A. Jamieson)

BIOL 2860. Molecular Mechanisms of Disease.

Dr. Bartnikas' goal for this class is to teach first-year graduate students what he wishes he would have taught and what he wished he would have known as a first-year graduate student. This will be accomplished by studying several human diseases and designing experiments to better understand their mechanistic and molecular basis. (Diseases will be chosen out of a series of options by students early in the semester.) The class will consist of didactic lectures, discussions, small group work, and group presentations. Active participation by all students will be encouraged. Students should have a solid background in the life sciences with an understanding of the fundamental principles of molecular biology, genetics, biochemistry, and cell biology. Readings will be assigned from Robbins Basic Pathology (2018), Junqueira's Basic Histology Text & Atlas (2018), primary literature, and reviews. Both textbooks are available

Fall BIOL2860 S01 10308 MW 1:00-2:30 (T. Bartnikas)

BIOL 2865. Toxicology.

Toxicology is the science that describes the adverse biological effects of exogenous chemical and physical stressors, including environmental, industrial, and agricultural chemicals and pharmaceuticals. This course will introduce the principal biological processes that determine an organism's response to a toxicant, including absorption, distribution through a biological system, metabolism, elimination, and effects at the site(s) of action. We will discuss modern challenges in toxicology, such as assessing toxicity of mixtures and testing some of the thousands of untested chemicals in commerce. The material will be presented in lecture and student-led discussions, with readings from the toxicology literature.

Spr BIOL2865 S01 20271 TTh 1:00-2:20(08) (D. Spade)

Spr BIOL2865 S02 25753 Arranged (D. Spade)

BIOL 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall BIOL2970 S01 16540 Arranged 'To Be Arranged'

Spr BIOL2970 S01 25206 Arranged 'To Be Arranged'

BIOL 2980. Graduate Independent Study.

Independent study projects at the graduate level. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

BIOL 2985. Graduate Seminar.

Section numbers vary by instructor. Please see the registration staff for the correct section number to use when registering for this course.

BIOL 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall BIOL2990 S01 16541 Arranged 'To Be Arranged'

Spr BIOL2990 S01 25207 Arranged 'To Be Arranged'

BIOL 2995. Thesis.

Section numbers vary by instructor. Please see the registration staff for the correct section number to use when registering for this course.

BIOL XLIST. Courses of Interest to Biology Concentrators.**Medical Education****MED 2980. Independent Study in Population Medicine.**

For students enrolled in the Primary Care-Population Medicine program at Alpert Medical School, this course is structured to allow students to conduct research focused on population health with a mentor at Brown University.

Neuroscience**NEUR 0010. The Brain: An Introduction to Neuroscience.**

Introduction to the mammalian nervous system with emphasis on the structure and function of the human brain. Topics include the function of nerve cells, sensory systems, control of movement and speech, learning and memory, emotion, and diseases of the brain. No prerequisites, but knowledge of biology and chemistry at the high school level is assumed. Please register for any one of the evening recitation sections irrespective of the meeting time listed. Time conflicts will be resolved after classes start.

Fall	NEUR0010	S01	10066	TTh	1:00-2:20(06)	(M. Paradiso)

NEUR 1020. Principles of Neurobiology.

A lecture course covering fundamental concepts of cellular and molecular neurobiology. Topics include structure of ion channels, synaptic transmission, synaptic development, molecular mechanisms of synaptic plasticity, learning and memory and neurological diseases. Prerequisite: NEUR 0010. Strongly recommended: BIOL 0200 or equivalent.

Spr	NEUR1020	S01	20080	TTh	9:00-10:20(05)	(C. Aizenman)

NEUR 1030. Neural Systems.

This lecture course examines key principles that underlie the function of neural systems ranging in complexity from peripheral receptors to central mechanisms of behavioral control. Prerequisite: NEUR 0010 or the equivalent. First year and Graduate students require instructor approval.

Fall	NEUR1030	S01	10109	MWF	10:00-10:50(14)	(M. Linden)

Fall	NEUR1030	S02	17314	MWF	11:00-11:50(16)	(M. Linden)

NEUR 1040. Introduction to Neurogenetics.

Recent advances in molecular biology and molecular genetics have allowed researchers to test specific hypotheses concerning the genetic control of behavior and neurological disease. This course will familiarize you with the relatively new and exciting field of neurogenetics. We will cover basic topics, new ideas, and unsolved problems in neurogenetics primarily through the two assigned texts. However, neurogenetics is essentially a "frontier" area in neuroscience, and the best way to approach this topic is by scientific literature, which will be covered in some lectures.

Spr	NEUR1040	S01	20081	TTh	10:30-11:50(09)	(K. Kaun)

NEUR 1440. Mechanisms and Meaning of Neural Dynamics.

We humans can shift our attention, perceive new objects, make complex motions, and adjust each of these behaviors within fractions of a second. Neurons and systems of neurons vary in their activity patterns on millisecond to second time scales, commonly referred to as "neural dynamics." This course addresses mechanisms underlying this flexibility and its potential meaning for information processing in the brain. The course integrates biophysical, computational, single neuron and human studies. In addition to lectures and readings, students will learn how to build computational models to simulate neural dynamics at various scales from single neurons to networks, using Matlab and the Human Neocortical Neurosolver. Computational modeling will be taught hands-on in an interactive lab session each week. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section on how to gain enrollment into this course.

Fall	NEUR1440	S01	10110	TTh	2:30-3:50(12)	(S. Jones)

NEUR 1510. Neurotechnology: Molecular Tools and Methods for Neurobiology.

New tools are transforming Neurobiology, both in the way experiments are being done and the questions they are addressing. New methods of observation and analysis are enhancing our understanding of the complex workings of the brain. This course is unique in helping students become critical thinkers about choosing the right toolset for different neuroscience questions at both the systems and molecular levels. We

will also examine how new molecular tools are developed and evolve to address fundamental questions about how our brain. In many ways, neurotechnology, new methods, and molecular tools open the way for new discoveries in neuroscience. Course is geared towards neuroscience, biomedical engineering, biology and others.

Spr	NEUR1510	S01	20082	MW	10:30-11:50	(A. Abdelfattah)

NEUR 1530. Communication In the Brain: What We Know and How We Know It.

Neurons communicate through the thousands of synapses they form. In this seminar-style course, we will explore the cellular and molecular underpinnings of synaptic transmission. We will then examine how synapse number and function can be modulated to shape circuit function during development, learning & memory formation, and in response to perturbations. We will develop scientific thinking skills and an understanding of experimental approaches in modern neuroscience by focusing on how the field investigates synaptic transmission and plasticity. All readings are from primary literature. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section on how to gain enrollment into this course.

Fall	NEUR1530	S01	10111	TTh	10:30-11:50(13)	(K. O'Connor-Giles)

NEUR 1560. Developmental Neurobiology.

The course will explore core concepts of developmental biology in the context of the developing nervous system. Topics will include: neuronal specification, cell migration, axon guidance, synapse formation, and neural plasticity. Students will gain experience with the primary literature and learn about cellular and molecular mechanisms of brain development and the tools and model organisms used to study them. Request override through C@B. The decision will be made based on a variety of factors including: seniority, concentration requirement, etc.

Spr	NEUR1560	S01	20083	W	3:00-5:30(10)	(A. Jaworski)

NEUR 1600. Experimental Neurobiology.

Please request an override in C@B to get on the waitlist. I will be in touch via email with students on this waitlist as the first class approaches. Intensive laboratory experience in neuroscience appropriate for students with basic background in Neurobiology. Learn and employ the classical neurophysiological techniques of extracellular recording, intracellular recording and receptive field mapping using a variety of animal species. Experiments will include recording of sensory signals in the cockroach leg; frog sciatic nerve and sciatic nerve/muscle preparation and intracellular recording of neurons in Aplysia. Instruction on and practice of effective science writing is another component to this course. Labs are supplemented by informal lectures. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section for information about how to gain enrollment into this course.

Spr	NEUR1600	S01	20084	W	1:00-6:00	(J. Stein)

NEUR 1630. Big Data Neuroscience Ideas Lab.

Recent technological developments have transformed neuroscience research, enabling us to generate comprehensive 'big data' sets that are often shared freely amongst the neuroscience community. This lab course will explore strategies to effectively use such open-sourced neuroscience data sets. Students will identify fundamental open questions in brain science and develop strategies to mine open-source sequencing, imaging and connectivity data to address their research questions. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section on how to gain enrollment into this course.

Fall	NEUR1630	S01	10112	MW	2:00-3:20	(A. Fleischmann)

NEUR 1650. Structure of the Nervous System.

Combined lecture and laboratory course on the anatomy of the central nervous system. Lectures survey the circuitry of the major neural systems for sensation, movement, cognition, and emotion. Laboratory exercises (Mon. 10:30-12:30) include brain dissections, microscopy of neural tissue, and discussion of clinical cases. Prerequisites: NEUR 0010, NEUR 1020, and NEUR 1030. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section for information on how to gain enrollment into this course.

Fall	NEUR1650	S01	10113	TTh	2:30-3:50(12)	(D. Berson)

NEUR 1660. Neural Computation in Learning and Decision-Making.

Your brain is constantly making decisions, receiving feedback about those decisions, and learning from that feedback. In this course we will examine the neuroscience underlying these processes from a computational perspective. The course will involve reading scientific papers from cognitive neuroscience, building and testing the computational models that have been developed to synthesize this literature, and, as a final project, extending an existing model of learning or decision making and characterizing its behavior. A primary goal for the course is to develop the tools and motivation to translate verbal theories of behavior into formal and testable computational models.

Spr NEUR1660 S01 20085 TTh 2:30-3:50(11) (M. Nassar)

NEUR 1930I. Neural Correlates of Consciousness.

This course will consider the neuroscience of consciousness from a variety of perspectives, using examples from behavior, neurophysiology, neuroimaging and neurology. The course content will focus on primary literature, using review articles for background. Students will lead discussions. Strongly Recommended: NEUR 1030. Enrollment limited to 15. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section for information about how to gain enrollment into this course.

Spr NEUR1930I S01 20086 M 4:00-6:30 (J. Sanes)

NEUR 1930L. Neurobiology of Love.

The goal of this course is to explore the underlying neurobiological principles of love and attachment. Topics include the relevant brain areas, the role of sensation and perception in love and attachment; how love and attachment influence action and behavior; plasticity and learning in these systems; and relevant neurodiversity related to love and attachment. You will gain a deeper understanding of concepts and principles that apply throughout the brain. You will gain experience with primary literature and learn about the relevant experimental techniques. There will be an emphasis on how the neurobiology of love is portrayed in the popular press. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section for information about how to gain enrollment into this course.

Fall NEUR1930L S01 10115 TTh 1:00-2:20(06) (M. Linden)

NEUR 1940B. Deep Learning in Neuroethology.

Critical readings class will examine neural mechanisms for natural behavior (neuroethology) through reading classic studies and following current research. The course will emphasize the application of deep learning methods to movement patterns, spatial orientation, and social communication. DeepLabCut is one of several new programs that empower students and researchers to take advantage of deep learning methods for behavioral neuroscience. The course will teach how to replace single-parameter data analysis with deep learning methods to identify underlying patterns. Prerequisites are Introductory Neuroscience (NEUR0010) and prior training in Matlab or computer programming languages. DO NOT REQUEST AN OVERRIDE FOR THIS COURSE. Please see the Class Notes section for information about how to gain enrollment into this course.

Spr NEUR1940ES01 20087 M 3:00-5:30(13) (J. Simmons)

NEUR 1970. Independent Study.

Laboratory-oriented research in neuroscience, supervised by staff members. A student, under the guidance of a neuroscience faculty member, proposes a topic for research, develops the procedures for its investigation, and writes a report of the results of his or her study. Independent study may replace only one required course in the neuroscience concentration. Prerequisites include NEUR 0010, 1020 and 1030. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Permission must be obtained from the Neuroscience Department.

NEUR 2030. Advanced Molecular and Cellular Neurobiology I.

Focuses on molecular and cellular approaches used to study the CNS at the level of single molecules, individual cells and single synapses by concentrating on fundamental mechanisms of CNS information transfer, integration, and storage. Topics include biophysics of single channels, neural transmission and synaptic function. Enrollment limited to graduate students.

Fall NEUR2030 S01 10116 TTh 9:00-12:00 (A. Hart)

NEUR 2040. Advanced Molecular and Cellular Neurobiology II.

This course continues the investigation of molecular and cellular approaches used to study the CNS from the level of individual genes to the control of behavior. Topics include patterning of the nervous system, generation of neuronal diversity, axonal guidance, synapse formation, the control of behavior by specific neural circuits and neurodegenerative diseases. Enrollment is limited to graduate students.

Spr NEUR2040 S01 20088 W 2:00-5:00 (G. Barnea)

NEUR 2050. Advanced Systems Neuroscience.

Focuses on systems approaches to study nervous system function. Lectures and discussions focus on neurophysiology, neuroimaging and lesion analysis in mammals, including humans. Cognitive neuroscience approaches will become integrated into the material. Topics include the major sensory, regulatory, and motor systems. Enrollment limited to graduate students.

Fall NEUR2050 S01 10117 W 1:00-4:00 (T. Desrochers)

NEUR 2060. Advanced Systems Neuroscience.

Focuses on cognitive approaches to study nervous system function. Lectures and discussions focus on neurophysiology, neuroimaging and lesion analysis in mammals, including humans. Computational approaches will become integrated into the material. Topics include the major cognitive systems, including perception, decisions, learning and memory, emotion and reward, language, and higher cortical function. Instructor permission required.

Spr NEUR2060 S01 20089 M 2:00-5:00 (D. Sheinberg)

NEUR 2110. Statistical Neuroscience.

An introduction to the statistical modeling of multiscale neural dynamics in networks of neurons and large-scale brain networks with a focus on stochastic processes and random dynamical systems. Analysis of dynamical and statistical network properties: stationarity, directed transfer functions, stability and bifurcations, phase transitions. Related applications to prediction, control, low-dimensional representation, probabilistic neural population encoding and decoding are introduced as well. This is a course for senior undergraduate and graduate students with a background in systems/computational neuroscience and/or applied math/biomedical engineering. Lectures are accompanied by hands-on Python/Matlab-based applications to real and simulated neural data. Topics include: (1) Time and spectral domain models of network dynamics based on multivariate neural time series and point process observations with exogenous inputs; vector autoregressive processes, nonlinear Hawkes processes; stability, transfer functions; (2) Identification of directed interactions in networks of neurons and brain inter-areal communication (Granger causality, transfer entropy, ODE networks); (3) Collective dynamics and low-dimensional representations of network dynamics; (4) Prediction, neural population encoding and decoding for brain-computer interfaces: Bayesian probabilistic approaches based on linear/nonlinear state-space models, machine learning; (5) Data assimilation methods for modeling neural network dynamics. Example datasets include neuronal spike trains, local field potentials, ECoG/SEEG. PREREQUISITES: Introduction to statistics and probability, calculus and linear algebra; Python/Matlab programming language; familiarity with stochastic processes, difference/differential equations and related math background is helpful. Instructor permission required.

Fall NEUR2110 S01 10118 F 1:00-2:30 (W. Truccolo)

Fall NEUR2110 S01 10118 W 1:00-2:30 (W. Truccolo)

NEUR 2450. Exchange Scholar Program.**NEUR 2970. Preliminary Examination Preparation.**

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall NEUR2970 S01 16604 Arranged (A. Fleischmann)

Spr NEUR2970 S01 25261 Arranged (A. Fleischmann)

NEUR 2980. Graduate Independent Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. S/NC

NEUR 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	NEUR2990	S01	16605	Arranged	(A. Fleischmann)
Spr	NEUR2990	S01	25262	Arranged	(A. Fleischmann)

NEUR XLIST. Courses of Interest to Neuroscience Concentrators.**Program in Liberal Medical Education****PLME 0400. Introduction to Medical Illustration.**

This semester course explores the field of medical illustration and its many facets. Depiction of diseases, anatomy, medical practices and surgical procedures has been around since antiquity. Not only has medical illustration evolved over the centuries, it has played the role of historian, documenting the beliefs and knowledge of its time. Today, medical illustration is as present as ever despite the advent of other methods of medical documentation, including photography and videography.

Fall	PLME0400	S01	16654	MW	4:30-6:00	(F. Luks)

Business, Entrepreneurship and Organizations**BEO 1970. Independent Study.**

Course allows concentrators to complete BEO 1930 as an independent study due to scheduling conflicts.

Brown Arts Institute**ARTS 1003. Arts Leadership.**

Arts Leadership is an undergraduate course introducing students to the building blocks of effective arts leadership, management, and succession planning with a focus on building practical skills while reflecting on the future of arts leadership. This course is intended for students currently acting in a leadership role for a student arts organization and encourages students to use upcoming group events and programs as the basis for assignments and final projects. Students planning to step into leadership roles may participate in the course with a current leader to develop organizational structure and succession plans.

Fall	ARTS1003	S01	17851	M	3:00-5:30(03)	'To Be Arranged'

ARTS 1006. Playing The Villain On Camera.

This class will explore playing the villain on camera. We will focus on three archetypes of the villain as outlined in USC Professor Joe Hacker's seminal work "Auditioning for the Camera": 1. The psychopathic individual. 2. Those driven by an inclination to create chaos, and 3. Those who get caught up in an illicit scheme to get something (money, power, revenge, love). Each of these archetypes will be explored in class, then filmed, and will be delivered to each student. Your professor is a working professional film, television, and theater actor, and students will additionally explore the "first day of shooting" using these villain pieces: you will be guided through the process of filming these pieces in a professional setting.

Fall	ARTS1006	S01	17859	M	4:30-7:00	(K. Burton)

ARTS 1800. ArtsCorps & The Future of Arts Work.

Introduce students to the principles, techniques, and skills essential to becoming an effective member of the professional arts workforce and to ArtsCorps, an innovative employment service in development here at Brown which will offer access to workforce development opportunities and paid on-campus and community-based project work in a variety of artistic disciplines. Students will be engaged in researching cultural worker employment models, as well as shaping, regularly assessing, and improving the student component of ArtsCorps. In addition to class time, each student will be assigned to an appropriate artistic project on campus across the course of the semester. A total of 180 logged hours, including class time, research assignments, and project work, will be required to pass the class and to enter ArtsCorps as a member eligible for paid work.

Fall	ARTS1800	S01	18688	T	1:00-3:30	'To Be Arranged'

ARTS 1910E. Artist@Work: Building the Artistic Innovators Collective.

This artistic process course introduces students to the work, activities, and creative activity of Brown Arts Institute's Artistic Innovators Collective (AIC), a fluid group of around forty artists from across the globe who regularly engage with Brown in a variety of ways: to push the boundaries

of discipline, to teach, to work, to experiment, to safely fail and take risks, to undertake rigorous and long-term exchange with our campus and surrounding communities. For this course, BAI Artistic Director Avery Willis Hoffman invites Visiting Professor of the Practice Emil J. Kang (Mellon Foundation) to help shape and structure the AIC, in conversation and collaboration with the artists themselves. Students in this course will directly engage with AIC artists to discover their specific professional and artistic needs, track projects in progress and future dreaming, and begin to build programmatic structures.

Fall	ARTS1910E	S01	18978	F	10:00-12:30	'To Be Arranged'

ARTS 1910F. ARTS 1910F Artist@Work: Arts Education, Spoken Word.

During Fall 2024, Brown Arts Institute is hosting a series of spoken word and slam poetry events at Brown uplifting spoken word performance culture in Providence and beyond. In relation to the planned programming, students in Artist@Work: Arts Education will work closely with Providence-based teaching artists to design and implement workshops for high school students building towards spoken word/slam poetry performances that may be presented at Brown in November. This class is best suited for students interested in arts education, arts curriculum, and mentoring. Prior experience with slam poetry is not required. Note: participating high school students may be multi-language speakers. College students comfortable in multiple languages are encouraged to participate, particularly students with conversational Spanish and Portuguese.

Fall	ARTS1910F	S01	18983	Th	2:30-5:30	(S. LaCava-Bohanan)

ARTS 1970. Brown Arts Institute Independent Study.

ARTS Independent study offerings create opportunities for students throughout the University to work with Brown Arts Institute faculty to develop courses designed to explore art-related topics of interest with a tailored and focused approach. Once the department and BAI faculty advisor approve, students may register for an independent study or research project. Any student wishing to pursue an independent study or research project must submit a proposal by the first day of the shopping period for the semester in which the proposed project will be conducted. Submit your proposal via this form for official registration approval: <https://forms.gle/x7xeiwWdg2fzBWSA>

Chemistry**CHEM 0080B. Molecular Structures in Chemistry and Biology.**

This course will consist of a survey of historical developments and concepts of three dimensional structures of molecules. The course will conclude with a survey of the current state of the art of structure determination and 3D structure motifs for small molecules, nanomaterials and biological macromolecules. This freshman only seminar will be strictly limited to a maximum of 19 students.

Fall	CHEM0080E	S01	17560	TTh	9:00-10:20(05)	(P. Williard)

CHEM 0100. Introductory Chemistry.

Explores stoichiometry, atomic and molecular structure, chemical bonding, solutions, gases, chemical reactions, equilibria, thermochemistry. S/NC.

Fall	CHEM0100	S01	10120	MWF	11:00-11:50(16)	(M. Lueckheide)

CHEM 0330. Equilibrium, Rate, and Structure.

Explores the electronic structure of atoms and molecules, thermodynamics, solution equilibrium, electrochemistry, chemical kinetics, and reaction mechanisms. To successfully register for this course, please include all three components: lecture, lab, and conference. Students who previously passed 0330 lab may be excused from repeating the lab portion of the course, please register for L11 as your lab section. Required background: CHEM 0100 or AP Chemistry 4 or CHEM Placement Test 8 or IBH Chemistry.

Fall	CHEM0330	S01	10121	MWF	10:00-10:50(14)	(R. Stratt)
Fall	CHEM0330	S02	10122	TTh	10:30-11:50(13)	(B. Rubenstein)
Spr	CHEM0330	S01	26149	TTh	10:30-11:50(09)	(O. Chen)

CHEM 0350. Organic Chemistry I.

Investigates the constitution and properties of organic compounds, with considerable attention to structural motifs, isomerism and chirality, acid/base chemistry, elementary reaction mechanisms (alkene/alkyne addition, nucleophilic substitutions, eliminations, etc.) and synthetic schemes.

The laboratory work comprises microscale preparative and analytical techniques fundamental to the manipulation of representative organic compounds. Prerequisite: CHEM 0330. Students must register for the main lecture section and one lab section. Students who previously passed the CHEM 0350 lab may be excused from repeating the lab portion of the course, please register for lab section L11 as your lab section.

Spr	CHEM0350	S01	26154	MWF	9:00-9:50(02)	(M. Zimmt)
Spr	CHEM0350	S02	26155	TTh	9:00-10:20(05)	(C. Morton)

CHEM 0360. Organic Chemistry II.

Sequel to CHEM 0350. Investigates the constitution and properties of organic compounds at a fundamental level with an introduction to physical organic, bioorganic, and synthetic organic chemistry. Laboratory work is concerned with the identification and characterization of organic compounds, including modern instrumental methods. Prerequisite: CHEM 0350.

Students must register for a lecture section and a lab.

If you previously passed CHEM 0360 laboratory you may be excused from repeating the lab portion of the course, please register for lab section 11.

Fall	CHEM0360	S01	17718	MWF	9:00-9:50(09)	(M. Zimmt)
Fall	CHEM0360	S02	17720	TTh	9:00-10:20(05)	(A. Basu)

CHEM 0400. Biophysical and Bioinorganic Chemistry.

Examines aspects of physical and inorganic chemistry relevant to biochemistry: thermodynamics of hydrophobic and hydrophilic interactions, electrically charged membranes, coordination chemistry, active and passive transport, enzyme kinetics and mechanisms, metal-based drugs, and physical methods. Prerequisite: CHEM 0360. Prerequisite or corequisite: PHYS 0040 or 0060.

Spr	CHEM0400	S01	26157	TTh	10:30-11:50(09)	(S. Sun)

CHEM 0500. Inorganic Chemistry.

Examines the chemistry of main group and transition metal elements with treatment of covalent bonding and molecular structure. Emphasis will be placed on the methods of studying inorganic compounds and reactions, as well as their pervasiveness in real-world applications. Students will have the opportunity to develop their scientific writing through a peer-reviewed review paper project connecting inorganic chemistry to a topic of their choice. Prerequisite: CHEM 0360.

Spr	CHEM0500	S01	26160	MWF	11:00-11:50(04)	(M. Lueckheide)

CHEM 0600. Preparative Chemistry Lab.

This course is designed to develop advanced skills in chemical synthesis and analysis as preparation for work in a modern synthetic chemistry research environment. Students will perform synthesis of new chemical compounds using advanced techniques including air-free Schlenk and glovebox techniques, microwave synthesis, photocatalytic methods, and others. Students will also learn how to characterize their synthesized compounds using 2D NMR, ESI mass spectrometry, EPR spectroscopy, and other methods. The course consists of 1 hour of lecture per week discussing various techniques and applications and 4 hours of laboratory time. This course counts for 0.5 credits.

Spr	CHEM0600	S01	26161	M	1:00-4:50	(M. Lueckheide)
Spr	CHEM0600	S02	26162	W	1:00-4:50	(M. Lueckheide)

CHEM 0980. Undergraduate Research.

Independent research in chemistry mentored by a faculty member. The student will carry out original research in chemistry or chemical education. Students should consult with their faculty mentor to discuss the selection of a research project and setting objectives for the semester. This course may be repeated for credit. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor override required.

CHEM 0980S. Undergraduate Research - Writing Designated and Mandatory S/NC.

Independent research in chemistry mentored by a faculty member. The student will carry out original research in chemistry or chemical education. Students should consult with their faculty mentor to discuss the selection of a research project and setting objectives for the semester. Students in this independent undergraduate research course will be expected to work on several scaffolded writing assignments throughout the semester. Students will receive feedback on their writing that they can incorporate into a revised version of the assignment or a future submission. Students

who will not be engaged in this level of scientific writing should enroll in the traditional undergraduate research course, CHEM0980. This course may be repeated for credit. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor override required. This course is Mandatory S/NC.

CHEM 0981. Undergraduate Research - Writing Designated.

Independent research in chemistry mentored by a faculty member. The student will carry out original research in chemistry or chemical education. Students should consult with their faculty mentor to discuss the selection of a research project and setting objectives for the semester. Students in this independent undergraduate research course will be expected to work on several scaffolded writing assignments throughout the semester. Students will receive feedback on their writing that they can incorporate into a revised version of the assignment or a future submission. Students who will not be engaged in this level of scientific writing should enroll in the traditional undergraduate research course, CHEM 0980. This course may be repeated for credit. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor override required.

CHEM 0999. Chemistry and Art.

"Chemistry and Art" is an interdisciplinary course that explores different chemical concepts and techniques through the lenses of art and art history. The topics covered include paint and painting, stained glass; pottery and porcelains; gemstones and jewelry; color and art conservation. Drawing from early artistic texts, we will take a historically informed approach, connecting medieval stained-glass techniques, early pigmentation sourcing, and Qin dynasty pottery work to modern chemical explanations. Throughout the course, lectures, discussions, hands-on activities, and writing are totally integrated and the chemistry principles and techniques behind art objects and art-making are introduced through a series of case studies.

Fall	CHEM0999	S01	17721	W	3:00-5:30(10)	(L. Wang)

CHEM 1060. Advanced Inorganic Chemistry.

Covers the physical and chemical properties of transition metal compounds as well as current research topics in inorganic chemistry. Laboratory is designed for the practice of modern inorganic chemistry through the synthesis and spectroscopic characterization of air-sensitive transition metal compounds. Prerequisite: CHEM 0500.

Fall	CHEM1060	S01	17722	MW	8:30-9:50(09)	(O. Chen)

CHEM 1140. Physical Chemistry: Quantum Chemistry.

An introduction to the quantum theory of chemical systems. Elements of quantum mechanics; electronic structure of atoms and molecules; study of molecular structure and behavior by spectroscopy; chemical bonding are all explored. Prerequisites: CHEM 0330, MATH 0180 or equivalent, PHYS 0030 and PHYS 0040 or PHYS 0050 and PHYS 0060 or PHYS 0070 and PHYS 0470 or ENGN 0030 and ENGN 0040.

Fall	CHEM1140	S01	17723	MWF	10:00-10:50(14)	(P. Weber)

CHEM 1150. Physical Chemistry: Thermodynamics and Statistical Mechanics.

Examines the question: Where does chemical equilibrium come from? Focuses on macroscopic perspectives on chemical systems and the molecular origins of macroscopic behavior along with elements of statistical mechanics, the laws of thermodynamics, and the relationships between the two. Prerequisite: CHEM 1140

Spr	CHEM1150	S01	26163	MWF	10:00-10:50(03)	(B. Rubenstein)

CHEM 1160. Physical Chemistry Laboratory.

An introduction to modern instrumentation and experimental techniques as applied to physical chemistry. Experiments will emphasize application of the ideas of spectroscopy, kinetics, statistical mechanics, and thermodynamics to systems of chemical and biochemical interest. Prerequisites: CHEM 1140 or permission of the instructor.

Spr	CHEM1160	S01	26164	M	1:00-4:50	(P. Weber)
Spr	CHEM1160	S02	26165	W	1:00-4:50	(P. Weber)

CHEM 1230. Chemical Biology.

This course covers topics at the interface of chemistry and biology and, specifically, the use of chemical tools to probe biological systems. Using examples from the recent literature, we will discuss using the

central methods of chemistry, namely the ability to design and synthesize compounds with a particular set of properties, to analyze biological problems. Specific topics include molecular recognition of DNA, artificial enzymes, small molecule sensors, and in vivo imaging of proteins, nucleic acids, and cell-surface carbohydrates. Prerequisites: CHEM 0360 and BIOL 0280.

Spr CHEM1230 S01 26166 TTh 9:00-10:20(05) (M. Kizer)

CHEM 1240. Biochemistry.

Examines the chemical, mechanistic, and structural basis for enzymatic catalysis. Uses examples from the recent literature to examine how the experimental and conceptual tools of chemical synthesis, isotopic labeling, stereochemistry, enzymology, kinetics, and protein structure can be brought to bear to unravel the chemical and physical principles underlying the enormous catalytic acceleration and exquisite structural specificity of enzyme-catalyzed reactions. Prerequisites: CHEM 0360, BIOL 0280.

Fall CHEM1240 S01 17725 TTh 9:00-10:20(05) (J. Morin)

CHEM 1450. Advanced Organic Chemistry.

Lectures cover topics of current interest in organic reaction mechanisms, synthesis, and structure determination. Prerequisite: CHEM 0360.

Spr CHEM1450 S01 26167 TTh 2:30-3:50(11) (B. McDonald)

CHEM 1560G. Nuclear Magnetic Resonance.

These special topics courses cover the basics of modern NMR spectroscopy. Topics to be included are as follows: modern Fourier transform methodology, modern NMR instrumentation, and a comprehensive discussion of one and two dimensional experiments that are routinely performed. Topics such as coherence transfer and pulsed field gradients will also be included. Experimental methods covered in detail include COSY, TOCSY, HSQC, HMBC, NOSEY, ROSEY, EXSY and DOSY methodology. This course will not focus on structure determination or spectral interpretation but rather on experimental methodology.

Spr CHEM1560(S01 26168 MWF 11:00-11:50(04) (P. Williard)

CHEM 1560H. Chemical Glycobiology.

This course examines the chemistry and biology of carbohydrates in living systems. Topics to be covered may include - principles of carbohydrate recognition, enzymes involved in synthesis and modification of carbohydrates, carbohydrates in bacterial/viral and other cellular interactions, glycomics, carbohydrate synthesis. Prerequisites: CHEM 0360 and BIOL 0280. Instructor permission required. Attendance at the first class meeting is required for enrollment.

Fall CHEM1560(S01 17726 MWF 10:00-10:50(14) (M. Kizer)

CHEM 1560N. Organometallic Chemistry.

Modern organometallic chemistry continues to find unique applications including next generation lighting displays, therapeutics and imaging, energy science, and green chemical synthesis. In this course we will briefly review fundamentals of inorganic chemistry (MO theory, ligand field theory, Pearson's HSAB theory), and then delve into the structure, bonding, synthesis, reactivity, and mechanisms associated with organometallic complexes and their associated applications. Significant emphasis will be placed on effective oral and written communication skills, with frequent peer and instructor feedback provided. Prerequisites: CHEM 0360, CHEM 0500. PLEASE NOTE: This class is WRIT designated for Undergraduates Only. Graduate students should register for CHEM 2310. Undergraduates should register for CHEM 1560N.

Fall CHEM1560(S01 17727 TTh 10:30-11:50(13) (J. Robinson)

CHEM 1560P. Applications of Modern Physical Methods in Synthesis.

The modern synthetic chemist leverages a wide range of physical methods to answer research questions in diverse application areas ranging from renewable energy, medicine, materials, complex molecule synthesis, and others. Students will develop a working knowledge of modern techniques applied to synthesis, learning fundamental principles, experimental limitations, and interpretation of experimental results. Selected techniques may include: Nuclear Magnetic Resonance (NMR), Electron Paramagnetic Resonance (EPR), Fluorimetry, Absorption Spectroscopy (UV-Vis, IR, X-ray), Diffraction (X-ray), Magnetometry, Electrochemistry, and Mass-Spectrometry. Emphasis will be placed on how techniques are relevant in current research areas, and the instrumental capabilities available at Brown University.

Spr CHEM1560(S01 26169 TTh 1:00-2:20(08) (J. Robinson)

CHEM 1560R. Reimagining the Role of Chemists.

Reimagining the Role of Chemists teaches chemistry in the context of today's issues. This course investigates chemistry's entanglements with colonialism, anti-black racism, and environmental injustice. In the hopes of regrounding chemistry, reorienting its values, and reimagining its future, we engage with diverse histories, perspectives, and impacts that have often been rendered invisible. Together, we will consider how to transition from a false pretense of objectivity to a just and beneficial practice of chemistry.

Spr CHEM1560(S01 26170 TTh 10:30-11:50(09) (J. Morin)

CHEM 1560S. The Chemistry of Polymeric Organic Materials.

The 21st century has seen the transition of carbon-based polymers from commodity bulk materials to sophisticated and intricately engineered materials with applications in biotechnology, energy harvesting and storage, separations, and sensing schemes. At the heart of these thrusts have been developments in the synthesis of organic polymers and methods for their fabrication into materials and devices. The aim of this course is to build a fundamental knowledge of polymer chemistry and survey their application to functional materials and devices. Topics covered in this course can be broken into three major categories: 1. Synthesis and characterization of polymers; 2. Processing and characterization of polymeric materials; 3. Applications of organic materials to modern challenges.

Fall CHEM1560(S01 17728 MWF 1:00-1:50(08) (B. McDonald)

CHEM 1700. Nanoscale Materials: Synthesis and Applications.

Focuses on synthesis, properties, and applications of nanoscale materials. It begins with the introduction to size-dependent properties and to general characterization methods of nanomaterials. It then outlines the synthesis, surface chemistry and self-assembly of nanomaterials. It further reviews catalytic, optical and magnetic properties of nanomaterials. Finally, the course highlights the applications of nanomaterials in information storage, energy conversion, and biomedicine. Prerequisites : CHEM0350, PHYS 0030 or 0050, BIOL0280 recommended.

Fall CHEM1700 S01 17729 MWF 11:00-11:50(16) (S. Sun)

CHEM 2010. Advanced Thermodynamics.

Fundamental principles of macroscopic equilibrium thermodynamics. The three laws of thermodynamics, the thermodynamic potentials, temperature scales, heat engines and refrigerators, entropy, kinetic theory, and transport phenomena. Applications to solids, fluids, and magnetic systems; Gibbs relations, first and second order phase transitions, thermal radiation, gas expansions.

Fall CHEM2010 S01 17730 TTh 1:00-2:20(06) (Y. Bai)

CHEM 2020. Statistical Mechanics.

Introduction to modern equilibrium statistical mechanics, including the classical and quantum descriptions of ideal gases, the molecular basis of thermodynamics, the concepts of ensembles and fluctuations, and the implications of quantum mechanical indistinguishability. Applications include chemical and phase equilibria, the transition-state theory of chemical reaction rates, and the theory of liquids.

Spr CHEM2020 S01 26171 MWF 9:00-9:50(02) (E. Sprague-Klein)

CHEM 2310. Organometallic Chemistry.

Modern organometallic chemistry continues to find unique applications including next generation lighting displays, therapeutics and imaging, energy science, and green chemical synthesis. In this course we will briefly review fundamentals of inorganic chemistry (MO theory, ligand field theory, Pearson's HSAB theory), and then delve into the structure, bonding, synthesis, reactivity, and mechanisms associated with organometallic complexes and their associated applications. Significant emphasis will be placed on effective oral and written communication skills, with frequent peer and instructor feedback provided. Prerequisites: CHEM 0360, CHEM 0500. PLEASE NOTE: This class is WRIT designated for Undergraduates Only. Graduate students should register for CHEM 2310. Undergraduates should register for CHEM 1560N.

Fall CHEM2310 S01 17731 TTh 10:30-11:50(13) (J. Robinson)

CHEM 2410. Organic Mechanisms.

This course examines methods for determining organic reaction mechanisms. Types of experiments introduced may include kinetics, free energy relationships, isotope effects, molecular orbital theory,

spectroscopy, and product distribution analysis. Reactions typically covered include pericyclic reactions, reactive intermediates, organometallic reactions, and substitution/addition/elimination. The course makes extensive use of the primary literature, with a strong emphasis on the development of effective communication strategies. Completion of CHEM0500, and CHEM1140 is strongly recommended.

Fall CHEM2410 S01 17732 TTh 1:00-2:20(06) (M. Xian)

CHEM 2420. Organic Reactions.

Study of organic reactions and reaction mechanisms. Discussion and analysis of organic transformations. Topics can include arrow pushing strategies and synthetic methods.

Spr CHEM2420 S01 26172 MW 8:30-9:50(02) (A. Basu)

CHEM 2430. Synthetic Organic Chemistry.

Methods, strategies, and mechanisms. Topics may include the chemistry of anions, cations, and radicals, concerted reactions, conformational analysis, and stereochemistry.

Spr CHEM2430 S01 26173 TTh 10:30-11:50(09) (M. Xian)

CHEM 2770. Quantum Mechanics.

The course discusses the foundations of quantum mechanics and applications to chemical systems and phenomena. Using a rigorous mathematical treatment and Dirac notation, important time-independent model systems include two-level systems, one- and three-dimensional problems and angular momentum. Elements of time-dependent quantum mechanics focus on wavepacket motions. The semester will close out with a discussion of the spin and symmetry postulates.

Fall CHEM2770 S01 17733 TTh 10:30-11:50(13) (E. Sprague-Klein)

CHEM 2780. Quantum Mechanics.

The second semester sequel of Quantum Mechanics covers many body systems and matter-radiation interactions. It starts with a discussion of the symmetry postulates of quantum mechanics, followed by applications to the electronic structure of atoms and molecules, including angular momenta, the nature of chemical bonds, the Born-Oppenheimer approximation and conical intersections as well as molecular vibrations. The semester closes out with a discussion of time-dependent perturbation theory and spectroscopy, including the quantum adiabatic theorem, as well as the theory of electron and x-ray scattering.

Prerequisite: CHEM 2770.

Spr CHEM2780 S01 26174 TTh 10:30-11:50(09) (Y. Bai)

CHEM 2870. Departmental Colloquia.

Open to first year chemistry graduate students only.

Fall CHEM2870 S01 17734 F 3:00-5:30(11) (S. Delaney)

Spr CHEM2870 S01 26175 F 3:00-5:30(15) (L. Wang)

CHEM 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall CHEM2970 S01 16542 Arranged 'To Be Arranged'

Spr CHEM2970 S01 25208 Arranged 'To Be Arranged'

CHEM 2980. Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

CHEM 2981. Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. CHEM 2981 is mandatory S/NC.

CHEM 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall CHEM2990 S01 16543 Arranged 'To Be Arranged'

Spr CHEM2990 S01 25209 Arranged 'To Be Arranged'

CHEM XLIST. Courses of Interest to Students wishing to Study Chemistry.

Classics Classics

CLAS 0210B. Death in Ancient Greece.

Examines how ancient Greeks understood, described, and experienced death. Making use of sources in translation, considers how death is anticipated, imagined, feared, and sometimes sought. Also contrasts classical ideas with current experiences in our own society in order to see whether and how our assumptions concerning death are culturally determined. Enrollment limited to 19 first year students.

Fall CLAS0210B S01 17417 MWF 11:00-11:50(16) (P. Nieto Hernandez)

CLAS 0765. Witches and Vixens: Nasty Women in Ancient Greece and Rome.

What do video vixens and Foxy Brown have in common with "Witchy Woman"? These modern metaphors continue a long history of equating female sexual allure with dangers found in/or capable of subverting Nature. This course will use contemporary methodologies to make sense of similar descriptions of women found in Greco-Roman literature: how do the Greeks and Romans express a concern about gender, ethnicity, class, and/or politics using these metaphors? How do these same categories help distinguish what is "natural" from "unnatural"? To what end does this discourse about women and nature affect law, public space, or other aspects of "civilization"?

Fall CLAS0765 S01 17418 TTh 1:00-2:20(06) (S. Eccleston)

CLAS 0920. Roman Mythology.

Introduction to Ancient Roman mythological traditions. Far from simply assimilating Greek myths and changing the names of divinities and heroes, the Romans were highly creative in their adaptation of myths from various other cultures. They had a rich store of myths and legends of their own, including dual foundation stories for Rome itself (Aeneas and the Trojans; Romulus and Remus) as well as mytho-historic tales of exemplary heroes and heroines (e.g. Horatius and Lucretia) whose exploits provided models for future Roman generations. Even obviously flesh-and-blood persons (e.g. Regulus, Hannibal, Caesar, Cleopatra) take on mythical status. We'll focus on the ancient material - literature, art, architecture, religious rituals - with a look as well at the rich reception of Roman mythology in later literature and art. We'll consider also the way the Romans themselves understood - and manipulated - their myths.

Fall CLAS0920 S01 18755 MWF 11:00-11:50(16) (J. Debrohun)

CLAS 1120G. The Idea of Self.

Literature gestures us toward a certain kind of knowledge not quite psychological, not quite philosophical. We read widely in the classical and medieval traditions in order to gauge the peculiar nature of what this knowledge tells us about experience and the ways in which expressions of selfhood abide or are changed over time. Authors include but are not limited to Sappho, Pindar, Catullus, Horace, Augustine, and Fortunatus.

Fall CLAS1120GS01 17420 MWF 12:00-12:50(15) (J. Pucci)

CLAS 1121C. Cicero in New Spain.

This course will explore the reception in colonial Mexico of Cicero's oration 'Pro Archia poeta' ("In defense of Archia the Poet"), with particular emphasis on its use in the colonial schools. Some of the related topics which will be tackled are: the role of education in building society, linguistic and national identity, the purpose and power of literature, the possible existence of an intrinsic value of poetry. Class activity will involve reading the 'Pro Archia poeta' in its entirety and in its original Latin, and will be accompanied by examination of handwritten primary sources from early modern times, for which a basic training in Latin palaeography will be offered to the students.

Fall CLAS1121CS01 18972 TTh 2:30-3:50(12) (A. Marzocchi)

CLAS 1210. Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC.

From the end of the Bronze Age to the end of the Persian Wars is a period of considerable change in the Mediterranean and beyond. The Greek polis challenges the powers of the ancient Near East. Over seven centuries we meet Greek writing, Homeric epic, and the first historian

(Herodotus). But the Greek world lay on the edges of the Ancient Near East and this course tries to offer a more balanced approach than the typically Hellenocentric perspective of the standard textbooks. CLAS 1210 addresses cultural, political, social, and economic histories. Literary, epigraphical and archaeological cultures provide the evidence. There are no written exams for this course. No previous knowledge of the ancient world is required.

Fall CLAS1210 S01 17421 MWF 10:00-10:50(14) (G. Oliver)

CLAS 1320. Roman History II: The Roman Empire and Its Impact.

The social and political history of the Roman Empire (14-565 CE). Focuses on expansion, administration, and Romanization of the empire; crisis of the 3rd century; militarization of society and monarchy; the struggle between paganism and Christianity; the end of the Empire in the West. Special attention given to the role of women, slaves, law, and historiography. Ancient sources in translation.

Fall CLAS1320 S01 17422 MWF 10:00-10:50(14) (J. Bodel)

CLAS 1970. Special Topics.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

CLAS 1990. Conference: Especially for Honors Students.

Section numbers vary by instructor. Please check banner for the correct section number and CRN to use when registering for this course.

CLAS 2450. Exchange Scholar Program.

Fall CLAS2450 S01 16545 Arranged 'To Be Arranged'

Spr CLAS2450 S01 25210 Arranged 'To Be Arranged'

CLAS 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall CLAS2970 S01 16546 Arranged 'To Be Arranged'

Spr CLAS2970 S01 25211 Arranged 'To Be Arranged'

CLAS 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

CLAS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall CLAS2990 S01 16547 Arranged 'To Be Arranged'

Spr CLAS2990 S01 25212 Arranged 'To Be Arranged'

CLAS XLIST. Courses of Interest to Classics Concentrators.

Greek

GREK 0100. Essentials of the Greek Language.

This is the first part of a two-semester Ancient Greek course. The purpose of the course is to develop students' ability to read and understand Ancient Greek literary texts and to build firm foundations in terms of grammar, vocabulary and reading skills. Selections from Attic Greek authors. No previous knowledge of Greek is required.

Fall GREK0100 S01 17424 MWF 9:00-9:50(09) 'To Be Arranged'

GREK 0300. Introduction to Greek Literature.

Introduction to Greek literature through intensive reading. Prerequisite: GREK 0200, GREK 0110, or the equivalent. This course focuses on translation and comprehension of Classical Greek prose. The goal is to expand your vocabulary, increase your ease with morphology, and deepen your understanding of syntax as each of these elements of the language interact with each other. The primary text will be Plato's Apology, with some additional readings by Xenophon.

Fall GREK0300 S01 17425 TTh 9:00-10:20(05) 'To Be Arranged'

GREK 1111K. Aristotle's Theology in Metaphysics Lambda.

Metaphysics Lambda (Book XII) is a self-contained series of lectures presenting in its first five chapters an overview of Aristotle's natural philosophy and metaphysics (first philosophy) and culminating in its last five chapters in his tantalizing treatment of divine substance and its causal role in the cosmos. Among the questions to be asked: What is first philosophy and how does Lambda—finally developing Aristotle's theology

—fit into that larger project? How does God govern the cosmos as an object of love? How should we understand the claims that God thinks himself and that "thinking is thinking of thinking"?

Fall GREK1111K S01 18715 Th 4:00-6:30(04) (M. Gill)

GREK 1150. Greek Prose Composition.

Survey of Greek grammar and an opportunity to reflect on problems of translation. Main goals: to improve the students' command of prose syntax (both in reading and writing), and to develop a keen sensitivity towards issues of translation. A variety of texts written in Attic prose are read and analyzed in class. Students are expected to write two to three compositions a week in good Attic prose. Advanced knowledge of ancient Greek is a prerequisite for this course.

Fall GREK1150 S01 17427 MWF 12:00-12:50(15) (J. Hanink)

GREK 1810. Greek Literature Survey to 450 BCE.

Surveys early Greek literature to 450 BCE. Works studied include the *Iliad*, *Odyssey*, the Hesiodic poems, Pindar, Bacchylides, and Aeschylus. Emphasis on literary interpretation, the poetics of oral poetry, and the early history of various literary genres. Extensive readings in the original.

Fall GREK1810 S01 17428 MWF 1:00-1:50(08) (P. Nieto Hernandez)

GREK 1910. Special Topics.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

GREK 1990. Conference: Especially for Honors Students.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

GREK 2110K. Aristotle's Theology in Metaphysics Lambda.

Metaphysics Lambda (Book XII) is a self-contained series of lectures presenting in its first five chapters an overview of Aristotle's natural philosophy and metaphysics (first philosophy) and culminating in its last five chapters in his tantalizing treatment of divine substance and its causal role in the cosmos. Among the questions to be asked: What is first philosophy and how does Lambda—finally developing Aristotle's theology—fit into that larger project? How does God govern the cosmos as an object of love? How should we understand the claims that God thinks himself and that "thinking is thinking of thinking"?

Fall GREK2110K S01 18970 Th 4:00-6:30(04) (M. Gill)

GREK 2970. Preliminary Exam Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall GREK2970 S01 16574 Arranged 'To Be Arranged'

Spr GREK2970 S01 25236 Arranged 'To Be Arranged'

GREK 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

GREK 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall GREK2990 S01 16575 Arranged 'To Be Arranged'

Spr GREK2990 S01 25237 Arranged 'To Be Arranged'

Latin

LATN 0100. Essentials of the Latin Language.

An intensive two-semester approach to Latin with special emphasis on developing facility in the rapid reading of Latin literature. No previous knowledge of Latin is required.

Fall LATN0100 S01 17430 MWF 9:00-9:50(09) 'To Be Arranged'

LATN 0300. Introduction to Latin Literature.

Introduction to Latin literature through intensive reading of major authors in prose and poetry with careful attention to grammar and style. Prerequisite: LATN 0100, 0200 or 0110 (or equivalent).

Fall LATN0300 S01 17431 TTh 2:30-3:50(12) 'To Be Arranged'

LATN 1020B. Cicero, Verrines.

Fall	LATN1020B	S01	18732	TTh	1:00-2:20(06)	(A. Scafuro)

LATN 1110J. Petronius.

Close reading of Petronius's comic masterpiece, the *Satyricon*, with emphasis on questions of form, narrative technique, and literary intention.

Fall	LATN1110J	S01	17738	MWF	2:00-2:50(01)	(J. Bodel)

LATN 1110X. Selections from Latin Authors: Ovid, *Ars Amatoria*.

This course will cover Ovid's *Ars Amatoria*, Book One, as well as other selections from Ovid. Our aim will be a detailed exploration of this poetry through close reading of the Latin text and discussion of linguistic, literary, and cultural questions. Quizzes, exams, and a 7 to 10-page term paper will be required.

Fall	LATN1110X	S01	17739	MWF	2:00-2:50(01)	(J. Debrohun)

LATN 1120G. Reading Humanist Latin Texts.

The course will explore in depth some important Renaissance or 'early modern' works of Latin literature, many of which have not been translated into English. As well as opening up a new field of Latin writing, the course will extend general knowledge of classical literature by involving some less commonly studied ancient sources. It will also introduce some early imprints, enabling you to consider texts directly in the original form in which they first appeared.

Fall	LATN1120G	S01	17740	TTh	10:30-11:50(13)	(A. Laird)

LATN 1970. Special Topics.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

LATN 1990. Conference: Especially for Honors Students.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

LATN 2090I. Augustan Literature and Egypt.

This seminar studies Hellenistic influence on Latin poetry and Roman ideology in the period of Rome's slide from a dysfunctional oligarchy to an autocracy. We will focus on how such authors as Virgil, Horace, Propertius, and Ovid assimilate and transform the imperial literature of the Greek East in the time of Augustus' conquest of Egypt, both accommodating a poetics of monarchy and opening up adversarial standpoints within the same discourse. We will also look at earlier and later Latin poetry and prose texts to place this poetry within literary and political history.

Fall	LATN2090I	S01	18727	W	3:00-5:30(10)	(J. Reed)

LATN 2970. Preliminary Exam Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	LATN2970	S01	16592	Arranged		'To Be Arranged'
Spr	LATN2970	S01	25252	Arranged		'To Be Arranged'

LATN 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

LATN 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	LATN2990	S01	16593	Arranged		'To Be Arranged'
Spr	LATN2990	S01	25253	Arranged		'To Be Arranged'

Modern Greek

MGRK 0100. Introduction to Modern Greek.

Designed for students with little or no prior knowledge of Modern Greek. The aim is to introduce students to basic linguistic structures and develop the ability to comprehend and produce text, as well as to speak and understand speech, in a variety of contexts and registers. The course objectives are to enable students to perform a range of tasks, master a minimum core vocabulary and acquire knowledge and understanding of various forms of Greek culture.

Fall	MGRK0100	S01	17742	MW	1:00-2:20(08)	(E. Amanatidou)

Fall	MGRK0100	S01	17742	T	12:00-12:50(08)	(E. Amanatidou)

MGRK 0300. Intermediate Modern Greek.

Develops linguistic and cultural competence and may be taken by anyone who has completed MGRK 0200 or after consultation with the instructor and/or a placement exam. It focuses on further development of the four language skills as well as knowledge and understanding of various aspects of Greek society. It employs a variety of materials, including film, digital stories, internet based sources, music, art, and literature.

Fall	MGRK0300	S01	17743	MW	10:30-11:50	(E. Amanatidou)

MGRK 0500. Advanced Modern Greek.

May be taken by students who have completed the previous sequences or by anyone who places successfully into the course. The course places emphasis on the improvement of writing and oral skills, via presentations, collaborative projects, conversations and assignments based on topics and texts, drawn from a variety of sources and cultural forms of expression.

Fall	MGRK0500	S01	17744	Arranged		(E. Amanatidou)

MGRK 1800. In Other Words: Translating Greece.

This is an advanced undergraduate seminar that will offer students the opportunity to build on their linguistic, cultural and critical literacies, by translating from Greek into English. Over the course of the semester we will be thinking critically about texts, their ideological, historical and social coordinates and their embedded discourses of Greekness, community, diglossia, identity and gender, among others. In addition to translating from Greek into English, we will read and discuss essays on translation, in order to consider in an informed way the issues (untranslatability?) and types of decision making associated with the practice of translation.

Fall	MGRK1800	S01	17746	Arranged(03)		(E. Amanatidou)

MGRK 1910. Special Topics in Modern Greek.

No description available.

Sanskrit

SANS 0100. Elementary Sanskrit I.

This introduction to the Sanskrit language does not require prior knowledge of any language other than English. Students learn the Devanāgarī script and modes of transcription, the phonetics of Sanskrit, and an outline of most of its foundational grammar, with a goal of being able to begin reading classical Sanskrit literature in the original. Reading exercises are drawn from ancient narrative texts such as the *Hitopadeśa*, *Devīmāhātmya*, and *Mahābhārata*.

Fall	SANS0100	S01	17748	MWF	1:00-1:50(08)	(D. Buchta)

SANS 0300. Sanskrit Epic Narrative.

Consolidates and extends the knowledge of Sanskrit grammar introduced in first year Sanskrit; acquaints students first-hand with basic themes of ancient Indian culture, and cultivates the reading and interpretive skills necessary to read epic and closely related Sanskrit narrative with comprehension and increased fluency. Prerequisite: SANS 0200.

Fall	SANS0300	S01	17749	MWF	11:00-11:50(16)	(D. Buchta)

SANS 1970. Independent Study - Special Topics.**SANS 1990. Conference: Especially for Honors Students.**

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor's permission required.

SANS 2970. Sanskrit Preliminary Exam Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	SANS2970	S01	16629	Arranged		'To Be Arranged'

Spr	SANS2970	S01	25280	Arranged		'To Be Arranged'

SANS 2980. Sanskrit Reading and Research.

Section numbers will vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

Cognitive, Linguistic and Psychological Sciences

CLPS 0010. Mind, Brain and Behavior: An Interdisciplinary Approach.

This course will provide an interdisciplinary approach to the science of the mind through lens of psychology, cognitive science, cognitive neuroscience, behavioral neuroscience, computational modeling and linguistics, as uniquely represented by our department. It will focus on questions that drive the field, current state-of-the-art, and successful techniques and approaches. Questions addressed will include: What is the nature of the human mind? How do we get input from the world? How do we communicate? How do we change as infants and adults through experience? How do we make decisions and judgments? How do minds meet other minds in a social world?

Fall CLPS0010 S01 10082 MWF 10:00-10:50(14) (E. Festa)

CLPS 0050B. The Two Visual Systems: Visual Perception and Control of Action.

In a series of theoretical articles, Melvyn Goodale and his collaborators have proposed that separate, but interacting visual systems have evolved for the perception of objects on the one hand and the control of actions directed at those objects on the other hand. This seminar will cover the basic literature addressing this problem with studies involving human and animal studies. Enrollment limited to 19 first year students.

Fall CLPS0050B S01 10078 TTh 2:30-3:50(12) (F. Domini)

CLPS 0110. Animal Behavior.

The topic of this course is the scientific study of animal behavior, based on the theoretical framework proposed by Nobel Prize winner Niko Tinbergen. This framework addresses four basic questions about behavior: its evolutionary history, its function, its development, and its underlying mechanisms. We will focus on social behaviors, communication, and cognition in a range of animal species.

Fall CLPS0110 S01 10088 MWF 1:00-1:50(08) (A. Simmons)

CLPS 0220. Making Decisions.

Life is full of decisions. Some decisions are made rationally, others could be improved. This course considers the psychology of human decision-making, the analysis of optimal decision-making, and implications for individual action and social policy. Topics include: chance and preference (e.g., how do consumers weigh attributes when making purchases?); the value of information (e.g., when should physicians order expensive diagnostic tests?); risky choice (e.g., is it rational to play the lottery?).

Spr CLPS0220 S01 20090 TTh 9:00-10:20(05) (S. Sloman)

CLPS 0450. Brain Damage and the Mind.

Brain damage in humans can produce dramatic and highly selective impairments in cognitive functioning. This course provides an overview of the major neuropsychological disorders of perception, language, memory, thought, and action. It emphasizes the development of human information processing models for understanding the cognitive deficits observed in brain-damaged patients and the implications of neuropsychological findings for models of normal cognition.

Fall CLPS0450 S01 10084 MWF 12:00-12:50(15) (W. Heindel)

CLPS 0500. Perception and Mind.

How do the mind and the brain take physical energy such as light or sound and convert it into our perception of the world? This course examines the behavioral and biological bases of human and animal perceptual systems, including vision, audition, smell, taste, and touch. Particular emphasis is placed on high-level perception and how it relates to other cognitive systems.

Fall CLPS0500 S01 10090 MW 8:30-9:50(09) (J. Song)

CLPS 0610. Children's Thinking: The Nature of Cognitive Development.

An examination of children's thinking and cognitive development from infancy to early elementary school. Considers a range of topics including memory, reasoning, categorization, perception, and children's understanding of concepts such as space, time, number, mind, and biology. Major theories of cognitive development are described and evaluated in light of the available psychological data.

Spr CLPS0610 S01 26295 MWF 10:00-10:50(03) (D. Sobel)

CLPS 0700. Social Psychology.

Examines the theories, findings, and methods of social psychology. Topics include: social cognition (person perception, attitudes), social influence (cultural sources of attitudes, conformity), and social relations (aggression, altruism, prejudice). Students become better informed consumers of empirical research and acquire a new framework for interpreting social behavior. Applications to historic and current events.

Fall CLPS0700 S01 10081 TTh 10:30-11:50(13) (M. Boykin)

CLPS 0702. Introduction to Clinical Psychology.

This course is designed to provide an introduction to the field of clinical psychology, with a particular emphasis on common mental health symptoms and disorders across the lifespan (i.e. formerly referred to as "abnormal psychology"). We will discuss the defining characteristics of specific disorders (e.g., mood, anxiety, post-traumatic stress, and psychotic disorders), review systems used to define and assess diagnostic criteria (e.g., the DSM-5), consider theories of etiology (causes), and introduce basic methods of therapeutic treatment. This course will draw on historical and contemporary case studies, experimental research, clinical research, and media to illustrate concepts and guide class discussions.

Spr CLPS0702 S01 26296 MWF 11:00-11:50(04) (E. Thompson)

CLPS 0900. Statistical Methods.

A survey of statistical methods used in the behavioral sciences. Topics include graphical data description, probability theory, confidence intervals, principles of hypothesis testing, analysis of variance, correlation, and regression, and techniques for categorical data. Emphasizes application of statistical methods to empirical data.

Fall CLPS0900 S01 10093 MWF 2:00-2:50(01) 'To Be Arranged'

Spr CLPS0900 S01 20065 MWF 1:00-1:50(06) 'To Be Arranged'

CLPS 0950. Introduction to programming.

This course provides an introduction to programming and computational thinking. We will use the Matlab programming language as a starting point because it is concise and easy to read. It is also one of the most popular scientific programming languages. We will then transition to Python which has now become the main programming language used in data science. The course is designed for students in psychology, cognitive science, neuroscience, and other non-computer science majors interested in learning to program and, more generally, in developing computational thinking skills. Beyond teaching specific coding skills, this course will support students' development as computational thinkers. Mastering these skills will enable students to more richly understand the cognitive, linguistic, and psychological sciences — and impact society.

Spr CLPS0950 S01 20066 MWF 2:00-2:50(07) 'To Be Arranged'

CLPS 1280B. Special Topics in Cognition: Collective Cognition.

As individuals, we know little. We overestimate our knowledge of common objects and political policies, and the depth of our arguments. But humanity has achieved great things using its mental powers. The most likely reason is that we live in a community of knowledge, guided by shared intentionality. Communities understand how things work, and individuals fail to distinguish what they know from the knowledge that resides in other people's heads. In this course, we will evaluate these claims and discuss how they constrain theorizing in cognitive science. We will draw from literatures in psychology, philosophy, and computer science.

Fall CLPS1280B S01 18752 Th 4:00-6:30(04) (S. Sloman)

CLPS 1293. Eyes on the Mind: Exploring Cognition with Eye-Tracking and Pupillometry.

Eye-tracking and pupillometry methods have become increasingly common research tools in psychological research. This laboratory course will provide students with the background knowledge and practical experience to design, execute, and analyze eye-tracking experiments to study cognition. We will explore the behavioral and neural basis of these measures, consider experimental design and methodological issues, and learn methods for data processing and analyses, as well as how to use an eye-tracking system. We will read and discuss primary research articles applying these methods to gain experience in critically evaluating and interpreting results. Students will design a research project using one of these methods, collect and analyze data, give oral presentations, and prepare a written report of their research.

Spr CLPS1293 S01 26588 TTh 1:00-2:20(08) (E. Festa)

CLPS 1480B. Cognitive Aging and Dementia.

This seminar examines the cognitive changes associated with normal aging and age-related dementia (e.g., Alzheimer's Disease). Topics covered will include changes in the neurocognitive systems mediating memory, perception, and attention. The course is primarily intended as an advanced seminar for junior and senior concentrators in Psychology, but is also intended for other students interested in aging and the neuropsychology of cognition. Recommended prerequisites: An introductory course in cognitive neuroscience (CLPS 0400, CLPS 0450, CLPS 0200) or permission of the instructor. CLPS 0900 or a comparable Statistics course is strongly recommended. Preference will be given to senior CLPS concentrators.

Spr CLPS1480B S01 20055 TTh 9:00-10:20(05) (E. Festa)

CLPS 1480H. Disorders of Memory.

In his 1882 treatise on Diseases of Memory, Ribot wrote that "the disorders and maladies of this faculty, when classified and properly understood, are no longer to be regarded as a collection of amusing anecdotes of only passing interest. They will be found to be regulated by certain laws which constitute the very basis of memory and from which its mechanism is easily laid bare." In that spirit, this seminar will examine how both organic (e.g., Korsakoff syndrome, herpes encephalitis, semantic dementia) and functional (e.g., fugue, posthypnotic amnesia, multiple personality disorder) amnesias can inform our understanding of human memory.

Spr CLPS1480HS01 20057 MWF 12:00-12:50(01) (W. Heindel)

CLPS 1480I. Memory, Space, and the Hippocampus.

Although the hippocampus is one of the most studied brain structures of the last century, there is still considerable disagreement about its core function. In one view, the hippocampus is essential for forming memories of the unique episodes in our lives. In another, the hippocampus is devoted to spatial navigation, encoding a spatial map of the world and our location in it. Reconciling these viewpoints has posed a significant scientific challenge. This seminar examines differing perspectives on how the hippocampus contributes to cognition and behavior, with the goal of integrating evidence from multiple subfields of psychology and neuroscience.

Fall CLPS1480I S01 18313 MW 3:00-4:20(10) (S. Favila)

CLPS 1492. Computational Cognitive Neuroscience.

We explore neural network models that bridge the gap between biology and cognition. Begins with basic biological and computational properties of individual neurons and networks of neurons. Examines specialized functions of various brain systems (e.g., parietal cortex, frontal cortex, hippocampus, ganglia) and their involvement in various phenomena, including perception, attention, memory, language and higher-level cognition. Includes a lab component in which students get hands on experience with graphical neural network software, allowing deeper appreciation for how these systems work. Prerequisites: CLPS 0040 or CLPS 0200 or NEUR 0010.

Fall CLPS1492 S01 10083 TTh 1:00-2:20(06) (M. Frank)

CLPS 1500. Perception and Action.

The ecological approach treats perceiving and acting as activities of agent-environment system rather than an isolated "mind," and offers an alternative to the prevailing computational/representational view. Topics include inferential and direct perception, perception of the 3D environment, visual control of action, dynamics of motor coordination, and self-organization of behavior. Lecture and discussion. Prerequisite (any one of the following): CLPS 0010 (PSYC 0010), CLPS 0020 (COGS 0010), CLPS 0500 (COGS/PSYC 0440), or CLPS 0510 (COGS 0110).

Spr CLPS1500 S01 20064 TTh 1:00-2:20(08) (W. Warren)

CLPS 1540. Perceiving and Acting in 3D.

How does visual stimulation inform the brain about the three-dimensional structure of the world? What information is important for complex organisms, like humans and other primates, to be able to successfully interact with the surrounding environment? In this course we will examine how different sources of visual information such as stereo, contours, texture gradients, shading, and optic flow contribute to the vivid experience of 3D shape by the human visual system. Moreover, connections will be made to the mechanisms that govern goal directed actions, in order to

unveil the commonalities between 3D processing for conscious perception and visuomotor mappings.

Spr CLPS1540 S01 20051 TTh 2:30-3:50(11) (F. Domini)

CLPS 1560. Visually-Guided Action and Cognitive Processes.

One of the main purposes of encoding visual information is to perform visually-guided actions to directly interact with the external world. This seminar will shed light on the behavioral and underlying neural mechanisms involved in integrating perception and cognitive processes, and converting them into action. We will also explore how visuo-motor behavior can provide a useful tool to study a wide range of conscious and unconscious cognitive processes including the current locus of attention, the nature of language representation, spatial representation of number, and high-level decision-making. Prerequisite: CLPS 0010, CLPS 0020, or NEUR 0010.

Spr CLPS1560 S01 20063 T 4:00-6:30(16) (J. Song)

CLPS 1570. Perceptual Learning.

This course will focus on perceptual learning and visual plasticity. The goal of this course is to understand the mechanisms of visual perceptual learning and visual and brain plasticity. Perceptual learning is defined as long-term performance improvement as a result of visual experiences. Enrollment limited to 20.

Spr CLPS1570 S01 20070 F 3:00-5:30(15) (T. Watanabe)

CLPS 1580C. Visualizing Information.

There has been an explosion of interest in how to present information in a visual way rather than as a bunch of boring numbers. Visualizations can be outstanding at conveying information, but there have also been colossal failures. We will explore the good, the bad, and the ugly and harness knowledge of visual perception to understand why some are more successful than others. Someone interested in how to create effective visual displays (posters, infographics) would benefit from this course. Some background in visual perception is recommended such as a CLPS or NEUR course about vision or familiarity with graphic design.

Spr CLPS1580CS01 26299 MW 8:30-9:50(02) (L. Welch)

CLPS 1650. Child Language Acquisition.

All normally developing children acquire language, yet there is little agreement about how this takes place. This class explores the course of language acquisition from birth to babbling and first words to the use of complex syntax, discussing philosophical, theoretical, and methodological approaches to the problem. Includes practical experience analyzing child language data. Prerequisite: CLPS 0030 (COGS 0410) or CLPS 0800 (COGS 0450), or permission of the instructor.

Spr CLPS1650 S01 26300 TTh 1:00-2:20(08) (J. Morgan)

CLPS 1680A. Topics in Development: Social Learning.

How do we learn from other people? If a child was raised in the absence of any social interaction, what cognitive structures would s/he have? This course will focus on what and how children learn from others, including concepts like language, rituals, religion, biology. Emphasis will also be on "selective trust" - whether we learn from all informants equally or are rational in how we learn from others. Prerequisite: CLPS 0600, 0610, or 0700. Enrollment limited to 20 juniors and seniors.

Fall CLPS1680AS01 18244 Th 4:00-6:30(04) (D. Sobel)

CLPS 1680H. The Developmental Origins of Cooperation.

Cooperation is essential to a thriving and functioning society. Our everyday lives contain examples of strangers making sacrifices for the benefits of others. For instance, humans donate money, blood, or even a kidney to complete strangers in times of need. That being said, it is hard to ignore that many of the problems we face as a society, such as climate change, remain intractable in part because of individuals' lack of willingness to incur monetary costs to benefit others. This class will explore the ways in which humans are and are not cooperative beings. We will do this through a developmental lens with an emphasis on understanding how cooperative impulses can be traced to behaviors in childhood.

Fall CLPS1680HS01 18714 M 3:00-5:30(03) (J. Marshall)

CLPS 1702. Psychological Assessment.

This seminar is designed to provide an overview of the goals and practices of psychological assessment across the lifespan. We will examine different domains of psychological assessment (e.g., clinical and diagnostic evaluations, cognitive testing, risk assessment), discussing

the theoretical and empirical bases for these practices. We will discuss real world applications, with a particular emphasis on the field of clinical psychology. Students will be exposed to a variety of measures (e.g., interviews, surveys, cognitive tasks) and learn basic assessment skills and procedures. Students are expected to read and comment on course readings, participate in weekly discussions and group work, and complete writing assignments and exams throughout the semester.

Fall CLPS1702 S01 18246 MWF 11:00-11:50(16) (E. Thompson)

CLPS 1730. Psychology in Business and Economics.

The goal of this course is to explore emerging themes at the intersection of psychological science, business, and behavioral economics. Psychologists are primarily interested in detecting limits to human rationality, whereas economics tends to proceed within the rational-actor model. In business, questions arise of how theoretical models and empirical findings related to the practice of managerial decision-making. Investigations of power and the psychological impact of money are relatively recent additions to the suite of research topics. New methodologies, such as neuro-imaging have led to advances not represented in the traditional framework of organizational psychology. Enrollment limited to 20 junior and senior Psychology and Behavioral Decision Making concentrators.

Fall CLPS1730 S01 10086 TTh 10:30-11:50(13) (J. Krueger)

CLPS 1741. Social Brain in Context: From Neuroeconomics to Political Polarization.

This course will provide an overview of the field of social neuroscience, and in particular how the subfields of neuroeconomics and political psychology interact. We will consider how social processes are implemented at the neural level, but also how neural mechanisms help give rise to social phenomena and cultural experiences, such as political polarization. Many believe that the large expansion of the human brain evolved due to the complex demands of dealing with social others—competing or cooperating with them, deceiving or empathizing with them, understanding or misjudging them. In this course, we will review core principles, theories, and methods guiding neuroeconomics, and leverage these tools and theories to better understand our current political landscape and polarized attitudes. Overall, this course will introduce students to a multi-level approach to understanding the brain in its social context, through the lens of neuroeconomics.

Fall CLPS1741 S01 18576 M 3:00-5:30(03) (O. FeldmanHall)

CLPS 1755. Moral Psychology.

This course will introduce students to the field of moral psychology, which lies at the intersection of social and cognitive psychology and connects to many other disciplines, from sociology and philosophy to anthropology and law. With an introductory lecture and a discussion seminar each week, students will learn about the broad territory of moral phenomena, from its foundations in norms and values to moral judgments and moral behavior, from considerations of moral emotions and character to forms of moral communication and moral sanctions. Course requirements include exams, work in reading teams, short presentations, seminar contributions, and a final paper.

Fall CLPS1755 S01 18687 TTh 1:00-2:20(06) (B. Malle)

CLPS 1760. The Moral Brain.

How do we learn to cooperate, help others in need, and appropriately respond after being treated unfairly? The human mind strives to resolve the competing pressures of self-interest against the greater good. By drawing upon many disciplines including philosophy, social and affective neuroscience, abnormal psychology, law, and experimental economics, this course covers topics from 18th-century philosophy to modern-day neuroscience. We will examine 1) the philosophical and epistemological foundations of moral thought, 2) the influence of emotion and contextual framing on moral action, 3) the psychopathology of immoral choice, and 4) the underlying cognitive and neurobiological processes that guide moral decision-making. Registration for this course will be determined by the faculty on the first day of class. The final class list is determined by 1) some working knowledge in cognitive neuroscience (evidence by taking at least 1 prior class in the concentration), 2) who shows up to the first class, 3) the student's year (seniority is prioritized) and 4) when people emailed the faculty member to get on the class list.

Spr CLPS1760 S01 20053 M 3:00-5:30(13) (O. FeldmanHall)

CLPS 1770. Stigma and Prejudice.

This seminar focuses on empirical research ranging across several topics in the psychology of prejudice, stereotyping, discrimination, and social stigma. We will read, interpret, and discuss quantitative research in social psychology (i.e., studies that contain statistics in their results) and the implications of these scholarly contributions to our knowledge of the inner workings of intergroup behavior. This includes understanding individual differences and contexts related to exhibiting prejudicial behaviors (prejudice/bias), the implications of this behavior for targets of discrimination (stigma), and contributions of each of these to how groups and group members interact with one another in society (intergroup relations).

Spr CLPS1770 S01 20050 TTh 2:30-3:50(11) (M. Boykin)

CLPS 1791. Laboratory in Social Cognition.

Examines principles of experimental design and analysis in the context of classic and contemporary research in social cognition. Students replicate and extend several studies on topics such as person perception, social stereotyping, or judgment and decision making. Students will participate in the design of these studies, gather their own data, analyze them, and report the findings in oral presentations and written reports. Prerequisites: CLPS 0010 (PSYC 0010), CLPS 0700 (PSYC 0210), and CLPS 0900 (PSYC/COGS 0090). Enrollment limited to 24.

Spr CLPS1791 S01 26301 TTh 9:00-10:20(05) (J. Krueger)

CLPS 1820. Language and the Brain.

This course will examine the neural systems underlying language and its parts – sounds, words, sentences, and meaning. We will examine effects of brain injury on speaking and understanding in individuals with left hemisphere injury, right hemisphere injury, and with the two hemispheres split. We will also study brain plasticity by examining recovery of language in aphasia and the effects on language when there is deprivation to areas of the brain specialized for hearing in the deaf and seeing in the blind. Behavioral, electrophysiological and neuroimaging evidence will be investigated in those with and without brain injury. Prerequisites: one of the following – CLPS0010, CLPS0300, CLPS0450, NEUR0010.

Fall CLPS1820 S01 17309 MWF 12:00-12:50(15) (S. Blumstein)

CLPS 1900. Research Methods And Design.

This course is designed to provide CLPS concentrators (psychology/cognitive science/cognitive neuroscience) with a variety of tools needed to conduct research: sources of data, standard designs (e.g., factorial experimental, correlational, longitudinal), research ethics, and best practices of literature review (e.g., meta-analysis). The course will include lectures, laboratory exercises, data collection, statistical analysis, and presentation of findings in written and oral reports. (Previously CLPS 1091)

Spr CLPS1900 S01 20060 TTh 10:30-11:50(09) (A. Simmons)

CLPS 1901. Research Methods.

This course is designed to provide CLPS concentrators (Cognitive Science/ Cognitive Neuroscience/Psychology) with a variety of tools needed to conduct research: sources of data, standard experimental designs, and research ethics. The course will include lectures, section meetings, data collection, statistical analyses, and written and oral reports. This is a flipped course with content material (lectures) available as videos to be viewed before class meetings. Course includes one 80-min lecture meeting and one 80-min lab section each week, and students are expected to attend both. This course is enrollment capped at 60 students.

Fall CLPS1901 S01 10092 TTh 9:00-10:20(05) (L. Welch)

CLPS 1960. Senior Seminar in Behavioral Decision Sciences.

This is the capstone course for the Behavioral Decision Sciences (BDS) concentration. It entails a research project that serves as a culmination of each student's experience within the concentration. Students should choose a research topic compatible with the three electives that they have taken or will take as part of the concentration. They will also need a faculty advisor for the project. The course entails presentation of your ideas and plans, as well as your final results.

Fall CLPS1960 S01 10119 F 3:00-5:30(11) 'To Be Arranged'

CLPS 1970. Directed Reading in Cognitive, Linguistic and Psychological Sciences.

Independent study or directed research in cognitive science. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

CLPS 1980. Directed Research in Cognitive, Linguistic and Psychological Sciences.

Required of all ScB concentrators and Honors students in psychology. Instructor permission required. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

CLPS 2001. Core Concepts in Cognitive and Psychological Sciences I.

This course is the first of a two-course sequence that provides graduate students with background in the core topics and themes in the cognitive and psychological sciences. Topics include sensory systems, perception, action, evolution and development, phonetics and phonology, attention, learning, memory, and executive function. Students are also introduced to a wide range of approaches and levels of analysis that scientists adopt to study these topics. Weekly topics are addressed in lectures and assigned readings. A separate seminar session involves presentation of current papers by students and discussion with faculty. Open to graduate students only.

Fall	CLPS2001	S02	10095	TTh	1:00-2:20(06)	(D. Badre)

CLPS 2091. Graduate First Year Project Research.

Please check Banner for the correct section number and CRN to use when registering for this course.

CLPS 2092. Graduate First Year Project Research.

Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

CLPS 2095. Practicum in Teaching.

Each student will assist a designated faculty member in teaching a course in cognitive science or related discipline. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

CLPS 2096. Directed Graduate Research.

No description available. Instructor permission required.

CLPS 2450. Exchange Scholar Program.

Fall	CLPS2450	S01	16548	Arranged		'To Be Arranged'

CLPS 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	CLPS2970	S01	16549	Arranged		'To Be Arranged'
Spr	CLPS2970	S01	25213	Arranged		'To Be Arranged'

CLPS 2980. Foundations of Advanced Statistics.

This course lays the foundation of graduate-level statistics concepts for all Ph.D. students in the CLPS Department. The course covers the basic multivariate techniques currently used in social and cognitive sciences: multiple regression, factorial and mixed between/within ANOVA, MANOVA, and linear approaches to categorical data analysis. The course does not cover mixed-effects (multi-level) analysis, covariance structure analysis (PCA, FA, SEM), or Bayesian statistics. The minimum prerequisite statistics knowledge assumed for the course will be undergraduate statistics, as covered in CLPS 0900 or comparable courses. Thus, the course assumes knowledge of such basics as point estimates, confidence intervals, normal distributions, hypothesis testing, t tests, univariate linear regression, and one-way ANOVA. Students will have assigned readings, attend lectures, complete weekly homeworks, and write two take-home exams.

Spr	CLPS2980	S01	20068	TTh	10:30-11:50(09)	(B. Malle)

CLPS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	CLPS2990	S01	16550	Arranged		'To Be Arranged'
Spr	CLPS2990	S01	25214	Arranged		'To Be Arranged'

Humanities**HMAN 1000A. The Cogut Institute for the Humanities Research Seminar.**

This yearlong seminar involves reading and discussing in-progress research by the annual fellows of the Cogut Institute for the Humanities, an interdisciplinary group of faculty, postdoctoral fellows, graduate students, and undergraduates engaged in extended research on a major project or honors thesis. Students read a wide range of works-in-progress, prepare questions and participate in seminar discussions, intervene as first questioners for specific sessions assigned to them in advance, and present their own work twice during the year. Students are required to complete both semesters (HMAN 1000A in the fall and HMAN 1000B in the spring) to receive credit. Admission to the course requires that students have received the Cogut Institute Undergraduate Fellowship for the year in which they enroll. More information about the fellowship and application process may be found at <https://humanities.brown.edu/apply/undergraduate-fellowship>.

Fall	HMAN1000A/S01	16724	T	11:00-1:00	(A. Anderson)

HMAN 1000B. The Cogut Institute for the Humanities Research Seminar.

This yearlong seminar involves reading and discussing in-progress research by the annual fellows of the Cogut Institute for the Humanities, an interdisciplinary group of faculty, postdoctoral fellows, graduate students, and undergraduates engaged in extended research on a major project or honors thesis. Students read a wide range of works-in-progress, prepare questions and participate in seminar discussions, intervene as first questioners for specific sessions assigned to them in advance, and present their own work twice during the year. Students are required to complete both semesters (HMAN 1000A in the fall and HMAN 1000B in the spring) to receive credit. Admission to the course requires that students have received the Cogut Institute Undergraduate Fellowship for the year in which they enroll. More information about the fellowship and application process may be found at <https://humanities.brown.edu/apply/undergraduate-fellowship>.

Spr	HMAN1000B/S01	25393	T	11:00-1:00	(A. Anderson)

HMAN 1973N. Islam in America: A Global History.

This course explores the history of Muslims in America — and American discourses about Islam — from 1492 to the present. We follow five historical contexts bridging Spain and Portugal, West Africa, the Middle East, South Asia, and North America, including: (1) Iberian-Ottoman rivalry from the Mediterranean to the Indian Ocean and European colonization of the Americas; (2) transatlantic slave trade and the roots of African-American Islam; (3) the U.S. Founders' ideas about Muslims and religious freedom, plus diplomatic engagement with Morocco, the Ottoman Empire, and Persia; (4) large-scale immigration of Asian Muslims following the 1965 Civil Rights Act; and (5) racialization of Muslim Americans — and oft-misidentified minorities including Arab, Iranian, Sikh, Jewish, Black, and Latinx Americans — before and after 9/11 and U.S. wars in Afghanistan and Iraq.

Spr	HMAN1973N/S01	25801	M	3:00-5:30(13)	(F. Ahmed)

HMAN 1974L. The Coming Apocalypse: Between the Earth and the World.

A cascading catastrophe threatens to turn the earth uninhabitable and bring our world to its end. How to think, in this context, the relation between our world, the world, and the earth? Are they known, experienced, shared with others, or being destroyed in the same way? How have their differences and convergence been affected by globalization, and affected our understanding of the "Anthropocene"? Following the news on ongoing and future climate catastrophes, the seminar addresses these and related questions through critical readings of theoretical and philosophical texts, including works by Arendt, Latour, Haraway, Povinelli, Yussof, Moore, and Mbembe.

Spr	HMAN1974L/S01	25406	Th	4:00-6:30(17)	(A. Ophir)

HMAN 1976W. Posthuman Latin America: Contemporary Imagination and Visions of the Future (HISP 1371U).

Interested students must register for HISP 1371U.

Fall HMAN1976\S01 18682 Arranged 'To Be Arranged'

HMAN 1977B. Foreign Policy Worlds: Diplomatic Designs and International Governing.

Foreign policy unfolds through carefully crafted encounters and exchanges in both domestic and diplomatic arenas. In public and closed spaces, actors leverage narratives, venues, dress, gestures, images, and soundscapes to sustain relations with others, pursue security goals, and affect the world they live in. At the intersection of the humanities and social sciences, this course foregrounds practices and designs that are constitutive of the international stage and world politics. They encompass everyday interactions as well as protocol-driven scenes, mediated moments, and spectacular occasions. The course draws case studies from a range of historical and global contexts, from the early modern era to the present, to shed light on key forms of international society and worldmaking, from the diplomatic list to the negotiation table to the group portrait.

Fall HMAN1977ES01 17518 TTh 2:30-3:50(12) (D. Mahiet)

HMAN 1990. Independent Study.

HMAN 2300. Introduction to Digital Humanities.

Digital humanities uses digital methodologies and formats to answer humanities research questions, produce and share knowledge, and teach. It encompasses critical studies of digital environments, innovative modes of researching and advancing arguments (including methodologies for constituting archives, analyzing texts and images, and visualizing data), new forms of scholarly and general publications, and digital pedagogy. The digital changes the way we research, understand, and share information in the humanities. This course will introduce students to a range of methodologies and critical lenses. Students will learn to collect resources formatted for machine-actionable research, analyze qualitative and quantitative datasets, and visualize and present their findings. They will consider the ethics of digital work and publication. Each student will plan a digital humanities project. This course is open to all graduate students and fulfills a requirement for the doctoral certificate in digital humanities.

Spr HMAN2300 S01 25309 W 3:00-5:30(10) (T. Nummedal)

HMAN 2301. Digital Humanities Capstone Seminar.

Participants in the Digital Humanities Capstone Seminar will learn how to design and build their own digital humanities project and/or participate as a key member on an already established digital humanities project with a faculty leader through hands-on, step by step instruction. Students will grapple with key methodologies and theoretical frameworks (including critical, Black, Indigenous, and Latinx digital humanities) and consider how to situate their own work within these ideas. Seminar participants will participate in the Digital Humanities Salon, where they will also present their project. Where desired and advisable, the capstone project may build toward dissertation work. Admission in the course is conditional on enrollment in the doctoral certificate in digital humanities, and partial or full completion of the digital tools and methods requirement.

Fall HMAN2301 S01 16735 T 1:00-3:00 (A. Champagne)

HMAN 2401K. Technologies of Memory (ENGL 2901R).

Interested students must register for ENGL 2901R.

Spr HMAN2401K\S01 26613 Arranged 'To Be Arranged'

HMAN 2401L. Postcolonial Theory (ENGL 2900X).

Interested students must register for ENGL 2900X.

Spr HMAN2401LS01 26612 Arranged 'To Be Arranged'

HMAN 2401X. Archive Theory: Imagining Absence Otherwise.

What does it mean to work through archival silences? What archival methods are necessary to mine the gaps? Facilitated by two cultural studies scholars, one located in American Studies and the other in Hispanic studies, this collaborative humanities seminar tackles the archive as an institution, a practice, and a methodology through the tools of queer studies, critical race theory, gender theory, media studies, and postcolonial studies. We will study archive theory through methodological discussions and hands-on practice with Brown's special collections at John Hay Library. We will engage the work of key scholars in the field of archival studies, such as Saidiya Hartman, Anjali Arondekar, Marisa J. Fuentes, and Zeb Totorici. Assignments will consist of short and long essays, responses to archival materials, group presentations, and the organization of a one-day public symposium.

Fall HMAN2401\S01 16943 M 12:00-2:30 (K. Murphy)

HMAN 2401Y. Faces: From Masks to Deepfake.

What is a face? Faces are generally considered unique to the being they belong to — usually a human being, since animals tend to be denied access to faciality. Indeed, face, understood as singularity, is for Emmanuel Levinas what grounds the ethical relation to the other. But faces, as deepfakes have shown, are also utterly replicable: they can be grafted, mimicked, appropriated, forged. Our collaborative humanities seminar will delve into the representations of faces (portraits, self-portraits, selfies, close-ups), the classification of faces (Johann Kaspar Lavater's physiognomy, the iconography of hysteria, Cesare Lombroso's Criminal Man), the staging of faces (pornography), the racial politics of faces (Blackface, facial recognition, Frantz Fanon's notion of mask), and the philosophy of "faceity" (Gilles Deleuze, Jean-Luc Nancy, Giorgio Agamben).

Fall HMAN2401\S01 16938 T 1:00-3:30 (P. Szendy)

HMAN 2402A. Decolonial Futurities: Submerged Perspectives from and within the Americas (POBS 2400/MCM25100)..

Interested must register for POBS 2400 or MCM25100.

Fall HMAN2402A\S01 18491 Arranged 'To Be Arranged'

HMAN 2402B. Empire: Global Perspectives.

Empires — ancient, early modern, and contemporary — have profoundly shaped the distribution of wealth and power in the modern world. However, imperial formations are strikingly diverse, and many of the entities that scholars now call "empires" were not understood as such during their own times. This collaborative humanities graduate seminar explores that diversity and examines how empires rise, fall, and perdure. While taking a global, comparative perspective, we also attend to local processes, analyzing how landscapes, objects, and people were bound up with imperial trajectories in such contexts as the ancient Mediterranean, Persia, China, the Andes, the Early Modern Atlantic, and the contemporary world. We afford particular attention to local peoples' relationships with empires, environmental history, political economy, historiography, and imperial art and material culture.

Spr HMAN2402ES01 26389 F 9:00-11:30 (C. Rice)

HMAN 2402C. Reading the Large Language Models: Artificial Intelligence, Language, and Literary Art.

Recent advances in Artificial Intelligence (AI) have produced systems that can appear human-level in their ability to generate text and images. This technology opens questions concerning the relationships between the art and philosophy of language and computation as cultural infrastructure. This seminar will explore how technology and humans interact via language, and what it means for humans and for AI to read and to write. The format of this collaborative humanities seminar will emphasize in-class discussion. Readings will comprise a mix of literature, including digital literature, theory, and philosophy of language. Participants will not be required to have a background in computer science or technology, but will experience tutorials on key technical concepts in order to enable them to think critically about cutting-edge developments in AI beyond a superficial level.

Spr HMAN2402C\S01 25654 Th 1:00-3:30 (J. Cayley)

HMAN 2500. Project Development Workshop.

In this capstone course, students completing the Doctoral Certificate in Collaborative Humanities pursue individual or collaborative projects, such as a dissertation chapter, an article on method/theory, or a stand-alone essay related to the larger field. The workshop provides a collaborative and supportive space in which students from different disciplines can share their work and receive and give feedback that will broaden and sharpen the framing of their projects. At the end of the semester, participants present in a Collaborative Public Workshop. Admission to the seminar requires a formal application process and the completion of two HMAN 2400 seminars.

Spr HMAN2500 S01 25394 W 3:00-5:30(10) (A. Anderson)

HMAN 2971F. Critique of Political Theology: Ancient Texts, Contemporary Readings.

The seminar examines political theology through critical readings of ancient canonical texts considered foundational in the traditions of Western philosophy, Judaism, and Christianity. Texts from Anaximander,

Sophocles, Euripides, Aristotle, the Hebrew Bible, the New Testament, and the Renaissance musings of Etienne de La Boetie will be read alongside 20th-century thinkers — Carl Schmitt, Pierre Clastres, Cornelius Castoriadis, Regina Schwartz, Jan Assmann, Giorgio Agamben, Judith Butler, Bonnie Honig, and others. Can readings of ancient canons be both non-anachronistic and critical? Must critique be secular? Or Gnostic? Can the political be separated from the theological? What can formations of ancient theo-political imagination teach us about the limits of ours?

Fall HMAN2971FS01 17685 Th 4:00-6:30(04) (A. Ophir)

Comparative Literature

COLT 0510K. The 1001 Nights.

Explores the origins, performance, reception, adaptation, and translation of the *1001 Nights*, one of the most beloved and influential story collections in world literature. We will spend the semester in the company of genies, princes, liars, slaves, mass murderers, orientalist, and Walt Disney, and will consider the *Nights* in the context of its various literary, artistic, and cinematic afterlives.

Spr COLT0510K S01 26350 MWF 1:00-1:50(06) (E. Muhanna)

COLT 0611E. Banned Books.

When are reading and writing dangerous activities? Who gets to decide? And what are the consequences, for individuals and societies? In this seminar, we will explore works of fiction, poetry, autobiography and children's literature that have been banned, redacted or put on trial in the modern period; and think critically about the ideas of decency, protection and security that underlie such censorship. As we consider the role book bans play in public life today, we will explore anti-censorship practices in the arts, journalism, law and grassroots advocacy.

Fall COLT0611E S01 18846 TTh 1:00-2:20(06) (E. Whitfield)

COLT 0710Q. The Odyssey in Literature and Film.

Examines reincarnations of the Homeric figure of Odysseus in contemporary literatures and film as modernist figure, postcolonial subject, and existentialist hero. How is the Odysseus myth altered from culture to culture (Greece, Rome, Ireland, the Caribbean)? How is it re-visioned in different historical periods and from different perspectives (feminist, marxist, postcolonial) and genres (epic, poetry, the novel, film, drama)? Major authors include Homer, Virgil, Tennyson, Joyce, Kazantzakis, Cavafy, Seferis, Atwood, Walcott; criticism by Bakhtin, Edith Hall, Adorno, Derrida. Films include works by Angelopoulos, the Coen brothers; Singer's *Usual Suspects*, Mendes' *James Bond* offering *Skyfall*, and Kubrick's 2001: *Space Odyssey*.

Spr COLT0710QS01 26483 MWF 12:00-12:50(01) (V. Calotychos)

COLT 0710X. Fan Fiction.

What is imitation (sincerest form of flattery) to literary canons? Vergil's *Aeneid* appropriated Aeneas from the *Iliad*, Joyce's *Ulysses* modernized the *Odyssey*. Admiration as a source of inspiration is a major force in the evolution of fiction. "Fan Fiction" explores intriguing characters in greater detail and new contexts, allowing them new lives in contemporary imagination. This course presents pairs or sets of works that are explicitly linked by the intimate relation of imitation. Classic readings will be paired with their mostly contemporary updates, including *Pride and Prejudice*/*Murder at Pemberley*, *Heart of Darkness/State of Wonder*, and *Monkey/Tripmaster Monkey*.

Spr COLT0710XS01 26351 TTh 1:00-2:20(08) (D. Levy)

COLT 0711R. Writing and Resistance in Indigenous America (1500–1700).

Material extraction, forced religious conversion, and physical brutality were but a few of the oppressive acts imposed on the Indigenous populations of the Americas by Western colonialism. However, those under Iberian and British Rule—in Peru, Mexico and New England—found ways to resist and negotiate the terms of domination by adopting, and therefore adapting, European forms and norms. This class takes an interdisciplinary approach that combines historiography, literature, and art, to analyze the mechanisms of Indigenous resistance within the developing structures of colonialism: race, religion, geography, and gender. We will read a variety of texts that originate from Aztec, Inca, Algonquian, Spanish, Brazilian, and British contexts. All readings available in English, but students are welcome to read any in the original language.

Fall COLT0711RS01 18845 MWF 12:00-12:50(15) 'To Be Arranged'

COLT 0810H. How Not to Be a Hero.

One of Shakespeare's greatest plays is about a character who was an irredeemable failure: Coriolanus. What can failure teach us? What kind of strength does a language of failure possess? We will read the ancient sources themselves (Livy, Lucian, Plutarch), and modern adaptations of these stories (Bertolt Brecht, T. S. Eliot, Günter Grass). We will also look at other "exemplary" failures who inspired Shakespeare and later literature, including Lucullus and Timon.

Fall COLT0810HS01 18347 TTh 9:00-10:20(05) (K. Haynes)

COLT 0810L. The Pursuit of Happiness.

This course will study the emergence of the modern concept of happiness from the ancient ideal of the "good life" to the notion of "pursuit of happiness" as an "inalienable right." We will trace the development of this concept in the early modern period and read representations of the search for happiness in a variety of literary, philosophical, and political texts (including the American and the Haitian Declarations of Independence and the French Declaration of Rights). Readings will include oriental and fairly tales, novels, and essays (by Mme d'Aulnoy, Mme du Chatelet, Montesquieu, Johnson, Fielding, Voltaire, and Rousseau, among others). Enrollment limited to 19 first year students.

Fall COLT0810L S01 18357 TTh 2:30-3:50(12) (O. Mostefai)

COLT 0811Z. Islands in the Western Imaginary: Paradise, Periphery, Prison.

Paradise, periphery, or prison? The representation of the island has been described as imaginary and not actual, mythological and not geographical. Examines the fascination with islands in the western cultural imaginary. Selective readings from literature, film and historical texts focus on ways in which island spaces have been represented in diverse social, national, imperial contexts as well as the effect of such projections on the native islanders, their visitors and often subjugators. Authors may include Homer, Plato, Marco Polo, Mandeville, Darwin, Defoe, Tournier, Kincaid, Kafka, Durrell, Seferis; theoretical works drawn from critical geography, postcolonialism, and the field of island studies.

Fall COLT0811Z S01 18507 T 4:00-6:30(07) (V. Calotychos)

COLT 0812X. Culture, Climate, and the Anthropocene's Others.

Using the theoretical framework of the Anthropocene, this course considers a wide array of aesthetic codes—from Ovidian elegy and Shakespearean tragicomedy to zombie narrative and postcolonial ghost stories—to investigate how distinct cultural forms contest, recast, and, at times, reinstate the (often-hierarchical) boundaries between human and nature, human and animal, and human and human. Through a sampling of poetry, narrative, and film, we will explore the uneven terrain of the Anthropocene, in which the feedback loops of race, class, gender, and other forms of social difference, along with geography itself, continue to separate humans, even as evidence mounts for the inseparability of humans from the rest of the planet, including its nonhuman inhabitants. Course materials will be provided in English and include works from Ishirō Honda, Octavia Butler, Colson Whitehead, Tommy Orange, J.M. Coetzee, and Bong Joon-Ho, among others.

Spr COLT0812XS01 26584 TTh 10:30-11:50(09) 'To Be Arranged'

COLT 1210. Introduction to the Theory of Literature.

An historical introduction to problems of literary theory from the classical to the postmodern. Issues to be examined include mimesis, rhetoric, hermeneutics, history, psychoanalysis, formalisms and ideological criticism (questions of race, gender, sexuality, postcolonialism). Primarily for advanced undergraduates. Lectures, discussions; several short papers.

Spr COLT1210 S01 26352 MWF 11:00-11:50(04) (S. Bernstein)

COLT 1310G. Silk Road Fictions.

The course introduces students to cross-cultural comparative work, and to critical issues in East-West studies in particular. We will base our conversations on a set of texts related to the interconnected histories and hybrid cultures of the ancient Afro-Eurasian Silk Roads. Readings will include ancient travel accounts (e.g., the Chinese novel *Journey to the West*, Marco Polo); modern fiction and film (e.g., Inoue Yasushi, Wole Soyinka); and modern critical approaches to the study of linguistic and literary-cultural contact (e.g., Lydia Liu, Emily Apter, Mikhail Bakhtin, Edward Said). Topics will include bilingual texts, loanwords, race and

heritage, Orientalism. No prior knowledge of the topic is expected and all texts will be available in English.

Fall COLT1310GS01 18349 M 3:00-5:30(03) (T. Chin)

COLT 1310J. The Arab Renaissance.

Explores the 19th-century Arabic cultural renaissance known as the Nahda. Topics include intellectual encounters between Europe and the Middle East, the birth of the Arabic novel, and the rise of Islamic modernism. We will read selections from the works of Shidyaq, Tahtawi, Zaydan, Shawqi, Bustani, and others, alongside historiographical and theoretical texts. At least three years of Arabic required.

Spr COLT1310J S01 26353 W 3:00-5:30(10) (E. Muhanna)

COLT 1310U. History of Romance Languages (FREN 1020B)..

Interested students must register for FREN 1020B.

Fall COLT1310U S01 18960 Arranged 'To Be Arranged'

COLT 1421V. Modernisms North and South: Ulysses in Dublin, Paris, and Buenos Aires.

James Joyce's *Ulysses* (Ireland, 1922), André Breton's *Nadja* (Paris, 1928), and Julio Cortázar's *Hopscotch* (Argentina, 1963): key texts of modernism, the avant-garde, and post-modernism, from different moments and outpost of literary modernity, but in intimate conversation with one another about the place of the human in art, and of art in politics. Join Stephen Dedalus, Leopold and Molly Bloom, Nadja, Horacio Oliveira, and a cast of minor characters on a journey through the hearts, minds, memories, and nervous systems of various modern metropolises.

Fall COLT1421V S01 18355 MWF 11:00-11:50(16) (M. Clayton)

COLT 1422M. Reading the Short Story.

This course invites students to explore the pleasurable challenges of close reading within the context of a compressed form, the modern short story. Select works from the nineteenth century on wards—many of them masterpieces, some hidden gems from around the world—will help us question what we think they mean and how we know this. We will develop practices and techniques for articulating such quandaries even as we observe how sociocultural themes, theories of interpretation, and literary movements intertwine with expressions of the self and the politics of identity.

No prerequisites. Open to all undergraduates.

Fall COLT1422MS01 18506 MWF 1:00-1:50(08) (V. Calotychos)

COLT 1430I. Poetry of Europe: Montale, Celan, Hill.

The fifty years between the Second World War and the formation of the European Union was a period in which the meaning of "Europe" was placed under great strain. The class will examine the strains and debates about Europe within the lyric poetry of several literary traditions. It will take the form of close historical, formal, and critical readings of three books of poems in their entirety: Montale's *The Storm and Others* (1956), Celan's *No-One's Rose* (1963), and Hill's *Canaan* (1997). Enrollment limited to 25.

Spr COLT1430I S01 26354 Th 4:00-6:30(17) (K. Haynes)

COLT 1431J. Anti Poetry.

Hating on poetry is a time-honored tradition. From Plato to the Dadaists, thinkers and writers across the world have questioned the reigning poetics, or the value of poetry altogether. This course examines a range of theoretical arguments about the value and nature of poetry from the premodern period to the present. At the same time, we will closely read materials from literary projects that have explored the permissible limits of the poetic, defined themselves against poetry, or have been accused of failing to meet the standards of poetry. Focusing on case studies like the Latin American anti-poetry movement, the Arabic prose poem and the work of the LANGUAGE poets, we will familiarize ourselves with debates in lyric theory and a variety of poetic traditions.

Fall COLT1431J S01 18843 MWF 10:00-10:50(14) (M. Pabon)

COLT 1440U. The Listener (Literature, Theory, Film).

Listening is not only the supposedly peaceful, welcoming activity that verges on mere receptive passivity. Listening or not listening also has to do with the exercise of power and this is the reason why we have a responsibility as listeners. In order to explore what could be described as the politics of listening, we will follow multiple paths that will lead us from the strategies of listening in concert venues to the medical practice of auscultation and the generalization of surveillance techniques. Our seminar will interweave readings in literature or theory (Kafka, Nietzsche,

Calvino, Foucault, Chekhov, Freud, Deleuze. . .) and screenings of selected filmic scenes.

Spr COLT1440U S01 26355 Th 4:00-6:30(17) (P. Szendy)

COLT 1441. Colonialisms on Trial.

Inspired by the movie *Bamako* (Abderrahmane Sissako) in which capitalism is put on trial, this seminar asks: How can we draw from the study of and opposition to colonialism the law that one should enact against it? In the name of what colonialism ought to be rejected? Can we imagine justice, freedom, or rights beyond Western liberal values? The seminar explores how colonialism has been put on trial by generations of anti-colonial activists and thinkers such as Abd el-Kader or Fanon. Putting colonialisms on trial means also putting history itself on trial alongside archives, reparations, museums, the subterranean, capital, religion, and the very notion of a court in its globalized liberal hegemonic form. A laboratory for collective investigation, this seminar will draw on our respective works. This dialogue will engage students in researching their own traces of colonialism's violence.

Fall COLT1441 S01 18848 Th 4:00-6:30(04) (A. Azoulay)

COLT 1710C. Literary Translation Workshop.

The primary focus of this course is the practice of literary translation as an art. Using the workshop format, each student will complete a project by the end of the semester. Examples and theoretical texts will illuminate the historical, ethical, cultural, political, and aesthetic values that underlie every translation, keeping an eye towards opening up the field beyond inherited practices to consider the contemporary implications of our choices, intentions, and purposes in translation. Open to all levels. Heritage speakers are welcome, collaboration is permitted, and an open-spirited approach to this developing and fascinating practice is strongly recommended.

Fall COLT1710CS01 18356 M 3:00-5:30(03) (S. Nakayasu)

COLT 1810G. Fiction and History.

How the historical fiction that has flourished over the past four decades challenges the notions of objectivity and totalization, while providing alternative viewpoints for the reconstruction and reinterpretation of the past. Authors considered include Grass, Doctorow, Delillo, García-Márquez, Allende, Danticat and Gordimer. Theoretical texts by White, LaCapra, Benjamin, Ricoeur, and Chartier. Films such as *The Official Story* and *Europa, Europa* will be viewed and incorporated into the discussions. Prerequisite: two previous courses in literature. Enrollment limited to 19. Instructor permission required.

Spr COLT1810GS01 26356 M 3:00-5:30(13) (L. Valente)

COLT 1813O. Adventures of the Avant-Garde.

In the early years of the twentieth century, a series of artistic movements rippled across the Western hemisphere, exploding conceptions of art and culture while reconfiguring international relations. Explores those movements, from their predecessors (Baudelaire, Rimbaud, Mallarmé), through overlapping -isms (Cubism, Futurism, Constructivism, Vorticism, Expressionism, Dada, Surrealism), to avatars in the Americas. In keeping with the avant-garde's cross-pollinating spirit, we study texts from a variety of traditions, forms, and genres: from poetry through prose to manifestoes, from painting and photography to film, music, and dance, touching on questions of translation and translatability between languages, cultures, and art-forms. Enrollment limited to 25.

Spr COLT1813OS01 26504 TTh 2:30-3:50(11) (M. Clayton)

COLT 1815F. Memory, Commemoration, Testimony.

In this course we will study problems of remembering and forgetting in a variety of texts including poetry, philosophy, psychoanalysis, memoirs, public monuments, memory studies and trauma theory. We will explore the roles of language and representation in dealing with the past, the temporality of the self, the operation of the unconscious, the memorial and the monument. We will also look at the politics of memory in relation to the cultural traumas of slavery, the Holocaust, Viet Nam and 9/11. Readings from Rousseau, Hegel, Wordsworth, Proust, Derrida and de Man; Freud, Caruth, Saidiya Hartman, Segalen; Arendt and Reznikoff.

Spr COLT1815F S01 26357 MWF 1:00-1:50(06) (S. Bernstein)

COLT 1970. Individual Independent Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

COLT 1980. Group Independent Study.

Section numbers vary by instructor. Please see the registration staff for the correct section number to use when registering for this course.

COLT 1990. Senior Thesis Preparation.

Special work or preparation of honors theses under the supervision of a member of the staff. Open to honors students and to others. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

COLT 2450. Exchange Scholar Program.

Fall	COLT2450	S01	16551	Arranged	'To Be Arranged'
Spr	COLT2450	S01	25215	Arranged	'To Be Arranged'
Spr	COLT2450	S02	25216	Arranged	'To Be Arranged'

COLT 2650Y. Walter Benjamin Around 1921.

In 1921 Walter Benjamin was working simultaneously on three significant and interrelated essays: "Toward the Critique of Violence," "The Task of the Translator," and "Goethe's Elective Affinities." The seminar will focus on this set of writings as providing insights into Benjamin's criticism as a whole. After examining closely Benjamin's essays on violence and on translation we will read Goethe's novel and Benjamin's study of it using the new translation and critical edition, *Writings on Goethe* (Stanford University Press), that will be appearing at the end of this year. Works will be read and discussed in English with attention to the German (seminar participants with knowledge of German are encouraged to read the texts in the original language).

Fall	COLT2650Y	S01	18847	W	3:00-5:30(10)	(K. McLaughlin)

COLT 2720C. Literary Translation.

Study and practice of translation as art and a potent form of literary criticism. Translation is an act of interpretation, which informs the language of the translator and the text as a whole: context, intent, and language. Discussion will include the impact of cultural difference, tone and time on translation, and the role of analytical as well as intuitive understanding of the original in the translator's endeavor.

Spr	COLT2720C	S01	26358	W	3:00-5:30(10)	(D. Levy)

COLT 2822T. Book-Objects (HISP 2351E).

Interested students must register for HISP 2351E.

Fall	COLT2822T	S01	18908	Arranged	'To Be Arranged'

COLT 2830Q. Augustan Literature and Egypt (LATN 2090I)..

Interested students must register for LATN 2090I.

Fall	COLT2830Q	S01	18909	Arranged	'To Be Arranged'

COLT 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

COLT 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	COLT2990	S01	16552	Arranged	'To Be Arranged'
Spr	COLT2990	S01	25217	Arranged	'To Be Arranged'

Computer Science

CSCI 0020. The Digital World.

Removes the mystery surrounding computers and the ever-growing digital world. Introduces a range of topics and many aspects of multimedia, along with explanations of the underlying digital technology and its relevance to our society. Other topics include artificial intelligence, IT security, ethics and the economics of computing as well as the effects of its pervasiveness in today's world. Introductory programming and analytic skills are developed through Excel, HTML, CSS, Javascript, and Python assignments. CSCI0020 is a good introduction to a wide range of CS topics that have broad relevance in our society. No prerequisites. Cannot be taken to fulfill CS Concentration.

Fall	CSCI0020	S01	18023	TTh	9:00-10:20(05)	(D. Stanford)

CSCI 0081. TA Apprenticeship: Full Credit.

Being an undergraduate TA is a learning experience: one not only gets a deeper understanding of the course material, but gains management and social skills that are invaluable for one's future. Students taking this course must first be selected as an undergraduate TA for a Computer

Science course, a course the student has taken and done well in. Students will work with the course's instructor on a variety of course-related topics, including preparation of material and development of assignments.

Whether CSCI 0081 or its half-credit version (CSCI 0082) is taken is up to the professor of the course being TA'd. Instructor permission required.

Fall	CSCI0081	S01	18048	Arranged	(K. Fisler)

CSCI 0082. TA Apprenticeship: Half Credit.

Being an undergraduate TA is a learning experience: one not only gets a deeper understanding of the course material, but gains management and social skills that are invaluable for one's future. Students taking this course must first be selected as an undergraduate TA for a Computer Science course, a course the student has taken and done well in. Students will work with the course's instructor on a variety of course-related topics, including preparation of material and development of assignments.

Whether CSCI 0082 or its full-credit version (CSCI 0081) is taken is up to the professor of the course being TA'd. Instructor permission required.

Fall	CSCI0082	S01	18050	Arranged	(K. Fisler)

CSCI 0111. Computing Foundations: Data.

An introduction to computing and programming that focuses on understanding and manipulating data. Students will learn to write programs to process both tabular and structured data, to assess programs both experimentally and theoretically, to apply basic data science concepts, and to discuss big ideas around the communication, use, and social impacts of digital information. Designed for both concentrators and non-concentrators, this is the first course in either a two- or three-course introductory sequence leading into advanced CS courses. Programming assignments will be smaller scale than in CSCI 0150/0170, thus allowing students time to practice programming and discuss computational ideas in a broader context.

Fall	CSCI0111	S01	18056	MWF	10:00-10:50(14)	(M. Zizyte)

Fall	CSCI0111	S02	18060	Arranged	(M. Zizyte)

CSCI 0112. Computing Foundations: Program Organization.

Explores how organization of programs, data, and algorithms affects metrics such as time performance, space usage, social impacts, and data privacy. Students will learn how to choose between candidate data structures for a problem, how to write programs over several standard data structures, how to assess the quality of programs (from theoretical, practical, and social perspectives), and how to apply their skills to computational problems that could arise in a variety of fields. The course will teach object-oriented programming, in combination with basic functional and imperative programming concepts. The course is designed for both concentrators and non-concentrators. Prerequisite: CSCI 0111

Fall	CSCI0112	S01	18062	MWF	1:00-1:50(08)	(T. Nelson)

CSCI 0150. Introduction to Object-Oriented Programming and Computer Science.

Introduces programming in Java (a modern, widely-used programming language), interactive 2D computer graphics, and some fundamental data structures and algorithms. Students learn by programming a sequence of interactive graphics programs which gradually increase in complexity, including Doodle Jump, Tetris (<http://bastilleweb.techhouse.org/>), and a significant final project. Lectures are supplemented by skits performed by the UTAs (Undergraduate Teaching Assistants) to teach course concepts and for a bit of added entertainment! This course is intended for both potential concentrators and those who may take only a single course. There are NO prerequisites, and no prior knowledge of programming is required, though students who do have prior programming experience are also encouraged to take the course!

Fall	CSCI0150	S01	18063	TTh	2:30-3:50(12)	(A. van Dam)

CSCI 0170. Computer Science: An Integrated Introduction.

CSCI 0170 is a computer science introduction suitable for students with no prior experience. It focuses on functional programming, which provides a new experience for students who have already done some programming and a solid foundation for students who have never programmed at all. Students learn to design solutions to computational problems, solutions that are compact, elegant, and efficient. Over the course of the semester, the computational problems addressed grow in complexity, from simple (e.g. long addition) to moderate (e.g. implementation of one programming language in another) to sophisticated (e.g. an implementation of an AI game player for two-person games of complete information). We study

clear and precise formulation of computational problems, use of recursion, and rudimentary analysis of algorithms. The emphasis is on problem solving and insight and crafting beautiful things rather than on coding.

Fall CSCI0170 S01 18064 MW 3:00-4:20(10) (P. Klein)

CSCI 0190. Accelerated Introduction to Computer Science.

A one-semester introduction to CS, similar to the two-course introductory sequences (CSCI 0150-0200 and CSCI 0170-0200).

All interested students, irrespective of background, must pass online placement assignments during the summer. Though placement is most appropriate for students with some prior programming experience, it is self-contained so all are welcome to try learning the provided material and attempting placement. Information will be available by June 1st at <https://cs.brown.edu/courses/csci0190/>.

Please do not request override codes. Override requests made through CAB will be ignored. The only way to get into the class is through placement. Students who do not successfully pass the placement process won't be allowed to register. Students who do pass will be sent registration instructions by course staff; you do not need to contact them (nor make requests through CAB).

Fall CSCI0190 S01 18065 MWF 9:00-9:50(09) (S. Krishnamurthi)

CSCI 0200. Program Design with Data Structures and Algorithms.

Students extend their program-design skills while learning multiple data structures, common graph algorithms, different forms of societal impacts from programs, how to analyze programs for performance, and how to work effectively with multiple styles of programming languages. Examples and course projects draw from several areas of computer science to help students identify their broader interests within the field. There will be a required weekly lab session involving hands-on work with course material. Prerequisite: CSCI 0112, CSCI 0150, 0170, or CSCI 0190. In addition, CSCI 0111 can be used with both additional work and the instructor's permission. The first two weeks of the course will be taught as at least two parallel tracks based on which prerequisite course a student has taken. CSCI 0200 will be offered every semester (fall and spring).

Fall CSCI0200 S01 18076 MWF 2:00-2:50(01) (N. DeMarinis)

Fall CSCI0200 S02 18082 Arranged (N. DeMarinis)

CSCI 0320. Introduction to Software Engineering.

Focuses on designing, building, testing, and maintaining systems collaboratively. It covers programming techniques (using Java and TypeScript with various frameworks), object-oriented design, advanced testing (e.g., fuzz testing), debugging approaches, and tools such as source control systems. The course concludes with a major group project that students gather requirements for, then design and implement themselves. Prerequisite: CSCI 0160, 0180, CSCI 0190 or CSCI 0200; CSCI 0220 is recommended.

Fall CSCI0320 S01 18090 TTh 1:00-2:20(06) (T. Nelson)

Fall CSCI0320 S02 18164 Arranged (T. Nelson)

CSCI 0330. Introduction to Computer Systems.

High-level computer architecture and systems programming. The course covers the organization of computer systems (in terms of storage units, caches, processors, and I/O controllers) and teaches students assembly-language programming and C-language programming. Extensive programming exercises introduce students to systems-level programming on Unix systems, as well as to multi-threaded programming with POSIX threads. Students will be introduced to the functions of operating systems. Prerequisite: CSCI 0160, 0180, 0190, or 0200.

Fall CSCI0330 S01 18099 MWF 2:00-2:50(01) (T. Doeppner)

Fall CSCI0330 S02 18103 Arranged (T. Doeppner)

CSCI 1010. Theory of Computation.

The course introduces basic models of computation including languages, finite-state automata and Turing machines. Proves fundamental limits on computation (incomputability, the halting problem). Provides the tools to compare the hardness of computational problems (reductions). Introduces computational complexity classes (P, NP, PSPACE and others). Prerequisite: CSCI0220 or CSCI1450 or CSCI1550 or APMA1650/1655 or CSCI1570

Fall CSCI1010 S01 18104 TTh 10:30-11:50(13) (L. De Stefani)

Fall CSCI1010 S02 18105 Arranged (L. De Stefani)

CSCI 1230. Introduction to Computer Graphics.

Fundamental concepts in 2D and 3D computer graphics, e.g., 2D raster graphics techniques and simple image processing. Focuses on geometric transformations, and 3D modeling, viewing and rendering. A sequence of assignments in C++ culminates in a simple geometric modeler and ray tracer. Prerequisite: CSCI 0160, CSCI 0180, CSCI 0190, or CSCI 0200. Some knowledge of basic linear algebra is helpful but not required. Strong object-oriented programming ability (e.g., in C++, Java or Python) is required.

Fall CSCI1230 S01 18106 TTh 10:30-11:50(13) (D. Ritchie)

Fall CSCI1230 S02 18223 Arranged (D. Ritchie)

CSCI 1250. Introduction to Computer Animation.

Introduction to 3D computer animation production including story writing, production planning, modeling, shading, animation, lighting, and compositing. The first part of the course leads students through progressive exercises that build on each other to learn basic skills in 2D and 3D animation. At each step, student work is evaluated for expressiveness, technical correctness and aesthetic qualities. Students then work in groups creating a polished short animation. Emphasis on in-class critique of ongoing work which is essential to the cycle of visually evaluating work in progress, determining improvements, and implementing them for further evaluation.

Please see course website for application procedure.

Fall CSCI1250 S01 18148 MW 12:00-1:50 (B. Meier)

CSCI 1260. Compilers and Program Analysis.

Lexical analysis, syntactic analysis, semantic analysis, code generation, code optimization, translator writing systems. Prerequisites: CSCI 0220, or CSCI 0320, or CSCI 0300, or CSCI 0330, or CSCI 1310, or CSCI 1330.

Fall CSCI1260 S01 18795 MW 3:00-4:20(10) (R. Lewis)

Fall CSCI1260 S02 18796 Arranged (R. Lewis)

CSCI 1270. Database Management Systems.

Introduction to database systems internals, design and implementation. Includes data models and structures, languages, query processing and optimization, concurrency control and recovery algorithms. Coverage of relational distributed and parallel databases as well as noSQL big data systems. Prerequisites: One of CSCI 0300, 0330 (or equivalent coursework).

Fall CSCI1270 S01 18107 TTh 1:00-2:20(06) (U. Cetintemel)

Fall CSCI1270 S02 18109 Arranged (U. Cetintemel)

CSCI 1330. Computer Systems.

High-level computer architecture and systems programming. The course covers the organization of computer systems (in terms of storage units, caches, processors, and I/O controllers) and teaches students assembly-language programming and C-language programming. Extensive programming exercises introduce students to systems-level programming on Linux systems, as well as to multi-threaded programming with POSIX threads. Students will be introduced to the functions of operating systems. Enrollment limited to Master's students only.

Fall CSCI1330 S01 18111 MWF 2:00-2:50(01) (T. Doeppner)

CSCI 1340. Introduction to Software Engineering.

CSCI 1340 focuses on designing, building, testing, and maintaining systems collaboratively. It covers programming techniques (using Java and TypeScript with various frameworks), object-oriented design, advanced testing (e.g., fuzz testing), debugging approaches, and tools such as source control systems. The course concludes with a major group project that students gather requirements for, then design and implement themselves.

Note: CSCI 1340 is for Master's students only (they may not register for CSCI 0320). It is identical to 0320 but with the addition of supplemental work for each sprint. Prerequisite: CSCI 0160, CSCI 0180, CSCI 0190 or CSCI 0200; CSCI 0220 is recommended.

Fall CSCI1340 S01 18813 TTh 1:00-2:20(06) (T. Nelson)

Fall CSCI1340 S02 18814 Arranged (T. Nelson)

CSCI 1360. Human Factors in Cybersecurity.

This course is designed to push you to think about cybersecurity as an idea with both physical and virtual elements. Throughout the course, we will examine the value of information, the importance of users, and the

difficult balance between security and usability. The ultimate goal of this course is to give you the intellectual and scientific framework you need to create systems that are both secure and efficient to use. The course focuses on usable security practices, but also looks deeply at the way our society influences security.

Fall	CSCI1360	S01	18174	W	3:00-5:30(10)	(E. Zaldivar)
Fall	CSCI1360	S02	18175	Arranged		(E. Zaldivar)

CSCI 1430. Computer Vision.

How can we program computers to understand the visual world? This course treats vision as inference from noisy and uncertain data and emphasizes probabilistic and statistical approaches. Topics may include perception of 3D scene structure from stereo, motion, and shading; segmentation and grouping; texture analysis; learning, object recognition; tracking and motion estimation. Strongly recommended: basic linear algebra, calculus, and probability.

Fall	CSCI1430	S01	18540	TTh	9:00-10:20(05)	(S. Sridhar)

CSCI 1460. Computational Linguistics.

The application of computational methods to problems in natural-language processing. In particular we examine techniques due to recent advances in deep learning: word embeddings, recurrent neural networks (e.g., LSTMs), sequence-to-sequence models, and generative adversarial networks (GANs). Programming projects include sentiment classification, topic modelling and machine translation. Prerequisites are not strictly required, but the course will assume some knowledge of machine learning and deep learning, and will involve programming assignments in Python and PyTorch.

Fall	CSCI1460	S01	18113	TTh	2:30-3:50(12)	(E. Pavlick)

CSCI 1510. Introduction to Cryptography and Computer Security.

This course studies the tools for guaranteeing safe communication and computation in an adversarial setting. We develop notions of security and give provably secure constructions for such cryptographic objects as cryptosystems, signature schemes and pseudorandom generators. We also review the principles for secure system design. Prerequisites: CSCI 0220, and either CSCI 0510 or CSCI 1010.

Fall	CSCI1510	S01	18114	TTh	10:30-11:50(13)	(P. Miao)

CSCI 1570. Design and Analysis of Algorithms.

A single algorithmic improvement can have a greater impact on our ability to solve a problem than ten years of incremental improvements in CPU speed. We study techniques for designing and analyzing algorithms. Typical problem areas addressed include hashing, searching, dynamic programming, graph algorithms, network flow, and optimization algorithms including linear programming. Prerequisites: CSCI 0160, CSCI 0180, or CSCI 0190, and one of CSCI 0220, CSCI 1010, CSCI 1450, MATH 0750, MATH 1010, MATH 1530.

Fall	CSCI1570	S01	18115	TTh	2:30-3:50(12)	(L. De Stefani)

CSCI 1600. Real-Time and Embedded Software.

Comprehensive introduction to the design and implementation of software for programmable embedded computing systems, in applications such as Internet of Things, transportation, and mobile. Includes the overall embedded real-time software design and development processes, with a focus on engineering for reliability. Major project component. Prerequisites: one of CSCI 0300, CSCI 0320, CSCI 0330, CSCI 1310, or CSCI 1330

Fall	CSCI1600	S01	18116	MWF	12:00-12:50(15)	(M. Zizyte)

CSCI 1650. Software Security and Exploitation.

CSCI 1650 covers software exploitation techniques and state-of-the-art mechanisms for hardening software. The course begins with a summary of prevalent software defects, typically found in applications written in memory unsafe languages, like C/C++, and proceeds with studying traditional and modern exploitation techniques, ranging from classical code injection and code reuse up to the latest goodies (e.g., JIT-ROP). For the most part, it focuses on defenses against certain vulnerability classes and the way(s) to bypass them. Students will be introduced to advanced software exploitation techniques and countermeasures, and study (in depth) the boundaries and effectiveness of standard hardening mechanisms, such as address space randomization and stack and heap protections.

Fall	CSCI1650	S01	18120	MW	3:00-4:20(10)	(V. Kemerlis)

CSCI 1680. Computer Networks.

Covers the technologies supporting the Internet, from Ethernet and WiFi through the routing protocols that govern the flow of traffic and the web technologies that are generating most of it. A major concern is understanding the protocols used on the Internet: what the issues are, how they work, their shortcomings, and what improvements are on the horizon. Prerequisite: CSCI 0300, 0330, 1310, 1330 or consent of instructor.

Fall	CSCI1680	S01	18122	TTh	9:00-10:20(05)	(N. DeMarinis)
Fall	CSCI1680	S02	18123	Arranged		(N. DeMarinis)

CSCI 1730. Design and Implementation of Programming Languages.

Explores the design principles of modern programming languages through implementation, comparison, and reflection. Examines a variety of linguistic features that impact both control and data. Topics vary by year; more information on the course home page. Prerequisite: CSCI 0160, CSCI 0180 or CSCI 0190.

Fall	CSCI1730	S01	18124	MWF	11:00-11:50(16)	(S. Krishnamurthi)

CSCI 1760. Multiprocessor Synchronization.

This course examines the theory and practice of multiprocessor synchronization. Subjects covered include multiprocessor architecture, mutual exclusion, wait-free and lock-free synchronization, spin locks, monitors, load balancing, concurrent data structures, and transactional synchronization. Prerequisites: CSCI 0330

Fall	CSCI1760	S01	18127	TTh	1:00-2:20(06)	(M. Herlihy)

CSCI 1805. Computers, Freedom and Privacy.

Who is the Big Brother that we most fear? Is it the NSA -- or is it Google and Facebook? Rapidly changing social mores and the growing problem of cybersecurity have all contributed to a sense that privacy is dead. Laws protecting privacy and civil liberties are stuck in the analog age, while the capabilities for mass digital surveillance continue to advance rapidly. This course will examine a variety of informational privacy and technology issues. A major theme: the historical and contemporary struggle to bring surveillance under democratic control to protect against abuses of privacy, civil liberties and human rights.

Fall	CSCI1805	S01	18129	TTh	9:00-10:20(05)	(T. Edgar)

Fall	CSCI1805	S02	18131	Arranged		(T. Edgar)

CSCI 1810. Computational Molecular Biology.

High-throughput experimental approaches now allow molecular biologists to make large-scale measurements of DNA, RNA, and protein, the three fundamental molecules of the cell. The resulting datasets are often too large for manual analysis and demand computational techniques. This course introduces algorithms for sequence comparison and alignment; molecular evolution and phylogenetics; DNA/RNA sequencing and assembly; recognition of genes and regulatory elements; and RNA and protein structure. The course demonstrates how to model biological problems in terms of computer science.

Prerequisites: CSCI 0160, CSCI 0180 or CSCI 0190, or consent of instructor.

Fall	CSCI1810	S01	18133	TTh	2:30-3:50(12)	(S. Istrail)

CSCI 1860. Cybersecurity Law and Policy.

Course description: Cybersecurity and cyber conflict pose unique legal and policy challenges for governments, companies and citizens. The way those problems are resolved will shape the future of the internet. This course will examine cybersecurity as a legal and policy problem. How can government and society address network and computer insecurity while upholding privacy, civil liberties and other fundamental values?

Fall	CSCI1860	S01	18135	Arranged		(T. Edgar)

CSCI 1870. Cybersecurity Ethics.

This timely, topical course offers a comprehensive examination of ethical questions in cybersecurity. These issues pervade numerous, diverse aspects of the economy and society in the Information Age, from human rights to international trade. Students will learn about these topics, beginning first with acquaintance with the dominant ethical frameworks of the 20th and 21st centuries, then employing these frameworks to understand, analyze, and develop solutions for leading ethical problems in cybersecurity. The things that you learn in this course will stay with you and inform your personal and professional lives.

Fall	CSCI1870	S01	18136	M	3:00-5:30(03)	(D. Hurley)
Fall	CSCI1870	S02	18137	Arranged		(D. Hurley)

CSCI 1950N. 2D Game Engines.

2D Game Engines covers core techniques used in the development of the software that drives computer games and other interactive software. Projects involve building different varieties of 2D game engines as well as games that require use of the features implemented in the engines. Topics include high-level engine design, vector and raster graphics, animation, collision detection, physics, content management, and game AI. Prerequisite: CSCI 0160, 0180, or 0190. This course has also been offered as DISP CSCI1971. Students interested in an override should request on through Courses@Brown. Priority will be given to both seniors and juniors.

Fall	CSCI1950N	S01	18156	TTh	6:40-8:00PM(02)	(J. Tompkin)

CSCI 1951X. Formal Proof and Verification.

Proof assistants are tools that are used to check the correctness of programs. Unlike tools like model checkers and SAT solvers, proof assistants are highly interactive. Machine-checked formal proofs lead to trustworthy programs and fully specified reliable mathematics. This course introduces students to the theory and use of proof assistants, using the system Lean. We will use Lean to verify properties of functional programs and theorems from pure mathematics. We will learn the theory of deductive reasoning and the logic that these tools are based on. Text: "The Hitchhiker's Guide to Logical Verification" by Blanchette et al. Prereqs: CSCI 1710 Logic for Systems or a proof-based mathematics course. Basic familiarity with functional programming (e.g. Haskell, ML) is helpful but not required.

Fall	CSCI1951X	S01	18797	MW	9:30-10:50(09)	(R. Lewis)

CSCI 1970. Individual Independent Study.

Independent study in various branches of Computer Science. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

CSCI 1971. Independent Study in 2D Game Engines.

2D Game Engines covers core techniques used in the development 2D game engines. Projects involve building different varieties of 2D game engines as well as games that require use of the features implemented in the engines. Topics include high-level engine design, vector and raster graphics, animation, collision detection, physics, content management, and game AI. Prerequisite: CSCI 0160, 0180, or 0190.

CSCI 1972. Topics in 3D Game Engine Development.

Covers core techniques in 3D game development with an emphasis on engine architecture. Students independently develop their own engines using C++, OpenGL, and the Qt framework, then work in groups to create a polished game. Topics include: spatial subdivision, player representation, collision detection and response, game networking, GPUs, and OpenGL. Prerequisite: CSCI 1230 and one of the following CSCI 0320, CSCI 0330, CSCI 1950N, OR CSCI 1971.

CSCI 1973. Independent Study.**CSCI 2002. Privacy and Personal Data Protection.**

If you tried to live for one day without generating any digital personal data, how would you spend it? In the Information Age, the use of personal data has proliferated and is pervasive. This course offers a comprehensive examination of protection of privacy and personal data, which is central to autonomy, dignity, and liberty. Topics include identity, financial, health, educational, and other data. Students will learn about: Fair Information Practices; the development of modern privacy rules in the United States and around the world; Fourth Amendment privacy and the autonomy of the individual in relation to the state; key US laws (HIPAA, FERPA, GLBA, GINA, COPPA, etc.); significant international rules (European Union's General Data Protection Regulation (GDPR), etc.); important institutions (Federal Trade Commission, Data Protection Authorities, etc.); standards; Privacy by Design and Default; and emerging issues.

Fall	CSCI2002	S01	19014	Arranged		(D. Hurley)

CSCI 2230. Computer Graphics.

This course offers an in-depth exploration of fundamental concepts in 2D and 3D computer graphics. It introduces 2D raster graphics techniques, including simple image processing. The bulk of the course is devoted to

3D modeling, geometric transformations, and 3D viewing and rendering.

A sequence of assignments culminates in a simple geometric modeler and ray tracer. C++ and the graphics library OpenGL are used throughout the course, as is shader programming on the GPU. The final project is typically a small group project spec'd and implemented by the group using shaders or ray tracing to create special effects.

Fall	CSCI2230	S01	18216	TTh	10:30-11:50(13)	(D. Ritchie)
Fall	CSCI2230	S02	18220	Arranged		(D. Ritchie)

CSCI 2340. Software Engineering.

Topics in the design, specification, construction and validation of programs. Focus will be on tools to support each of these stages. Course will pay special attention to the concerns raised by the properties of modern software systems including distribution, security, component-based decomposition and implicit control. A basic software engineering course such as CSCI0320 or CSCI1340 or extensive industrial programming experience is required. Knowledge of system programming such as CSCI0300, CSCI0330, CSCI1310, or CSCI1330 is highly recommended.

Fall	CSCI2340	S01	18242	TTh	1:00-2:20(06)	(S. Reiss)

CSCI 2370. Interdisciplinary Scientific Visualization.

Learn how to do research on using computer graphics, visualization, and interaction applied to scientific problems. Working in small multidisciplinary groups, students identify scientific problems, propose solutions involving computational modeling and visualization, design and implement the solutions, apply them to the problems, and evaluate their success. Prerequisites: programming experience, some graphics experience, problem ideas.

Fall	CSCI2370	S01	18159	TTh	10:30-11:50(13)	(D. Laidlaw)

CSCI 2450. Exchange Scholar Program.

Fall	CSCI2450	S01	16553	Arranged		'To Be Arranged'

CSCI 2470. Deep Learning.

Deep Learning belongs to a broader family of machine learning methods. It is a particular version of artificial neural networks that emphasizes learning representation with multiple layers of networks. Deep Learning, plus the specialized techniques that it has inspired (e.g. convolutional neural networks, recurrent neural networks, and transformers), have led to rapid improvements in many applications, such as computer vision, machine learning, sound understanding, and robotics. This course gives students an overview of the prominent techniques of Deep Learning and its applications in computer vision, language understanding, and other areas. It also provides hands-on practice of implementing deep learning algorithms in Python. A final project will implement an advanced piece of work in one of these areas. Students may take CSCI 2470 or CSCI 1470 but not both.

Fall	CSCI2470	S01	18910	TTh	1:00-2:20(06)	'To Be Arranged'

CSCI 2810. Advanced Computational Molecular Biology.

High-throughput experimental approaches now allow molecular biologists to make large-scale measurements of DNA, RNA, and protein, the three fundamental molecules of the cell. The resulting datasets are often too large for manual analysis and demand computational techniques. This course introduces algorithms for sequence comparison and alignment; molecular evolution and phylogenetics; DNA/RNA sequencing and assembly; recognition of genes and regulatory elements; and RNA and protein structure. The course demonstrates how to model biological problems in terms of computer science. CSCI 0160, 0180, 0190, or 0200. Recommended: CS 220, or some other course that introduces concepts from discrete math and probability. Course overrides are available at the instructor's discretion.

Fall	CSCI2810	S01	18913	TTh	2:30-3:50(12)	(S. Istrail)

CSCI 2890. Comprehensive Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	CSCI2890	S01	16554	Arranged		'To Be Arranged'
Spr	CSCI2890	S01	25218	Arranged		'To Be Arranged'

CSCI 2951E. Topics in Computer Systems Security.

This course explores advanced topics and highlights current research in computer security and privacy. Recent research papers will be presented and discussed. Also, projects will provide an opportunity for creative work. Class attendance is required and active participation in class discussions is essential. The course has two sections, each with a different focus and prerequisites. Section S01 (Networks, Software, and Systems) addresses computer security and privacy from the perspective of networks, software, and systems. Section S02 (Human Factors, Law, and Policy) addresses computer security and privacy from the perspective of law, policy, and human factors. Either section of the course can be used toward satisfying the capstone requirement for the ScB degree in Computer Science. Instructor permission is required to register.

Fall	CSCI2951E	S01	18154	W	3:00-5:30(10)	(R. Tamassia)

CSCI 2951I. Computer Vision for Graphics and Interaction.

Computer vision reconstructs real world information from image and video data; computer graphics synthesizes dynamic virtual worlds; interaction lets us explore these worlds; and machine learning allows us to map between domains across vision, graphics, and interaction. In visual computing, these fields converge to exploit both models of visual appearance and databases of examples to generate and interact with new images. This enables applications from the seemingly simple, like semantic photo editing, to the seemingly science fiction, like mixed reality. In this seminar, we will discover the state-of-the-art algorithmic contributions in computer vision which make this possible. Please join us!

Fall	CSCI2951I	S01	18153	MW	3:00-4:20(10)	(J. Tompkin)

CSCI 2952Q. Robust Algorithms for Machine Learning.

As machine learning systems start to make more important decisions in our society, we need learning algorithms that are reliable and robust. In this course, we will (1) cover basic tools in linear algebra, matrix calculus, and statistics that are useful in theoretical machine learning, (2) explore different adversarial models and examine whether existing algorithms are robust in these models, and (3) design and analyze provably robust algorithms for fundamental tasks in machine learning. In particular, we will focus on the research areas of high-dimensional robust statistics, non-convex optimization, learning with strategic agents, and spectral graph theory. This is a research-oriented course where students are asked to read and present sophisticated papers in top machine learning conferences. Knowledge of basic linear algebra, algorithms, data structures, probability and statistics is essential. Prior experience with machine learning is required.

Fall	CSCI2952Q	S01	18150	M	3:00-5:30(03)	(Y. Cheng)

CSCI 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

CSCI 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	CSCI2990	S01	16555	Arranged		'To Be Arranged'
Spr	CSCI2990	S01	25219	Arranged		'To Be Arranged'

CSCI XLIST. Courses of Interest to Concentrators in Computer Science.**Data Science****DATA 0080. Data, Ethics and Society.**

A course on the social, political, and philosophical issues raised by the theory and practice of data science. Explores how data science is transforming not only our sense of science and scientific knowledge, but our sense of ourselves and our communities and our commitments concerning human affairs and institutions generally. Students will examine the field of data science in light of perspectives provided by the philosophy of science and technology, the sociology of knowledge, and science studies, and explore the consequences of data science for life in the first half of the 21st century. Fulfills requirement for Certificate in Data Fluency

Fall	DATA0080	S01	18218	MWF	9:00-9:50(09)	'To Be Arranged'

DATA 0150. Data Detectives: How to Think Like a Data Scientist.

What is data? Where does it come from? How do we use data? In this First Year Seminar, students will delve into the fundamentals of data

science, critically examine its history, and practice the art of effective data communication. The course will culminate in a practical application of data science in each student's field of interest. Students will engage in hands-on activities such as exploring existing datasets and creating their own, while developing skills in data literacy, ethical analysis, and data visualization. Open to students of all disciplines, no prior experience is required!

Fall	DATA0150	S01	19146	TTh	9:00-10:20(05)	'To Be Arranged'

DATA 0200. Data Science Fluency.

As data science becomes more visible, are you curious about its unique amalgamation of computer programming, statistics, and visualizing or storytelling? Are you wondering how these areas fit together and what a data scientist does? This course offers all students regardless of background the opportunity for hands-on data science experience, following a data science process from an initial research question, through data analysis, to the storytelling of the data. Along the way, you will learn about the ethical considerations of working with data, and become more aware of societal impacts of data science. Course does not count toward CS concentration requirements.

Spr	DATA0200	S01	26366	TTh	1:00-2:20(08)	(L. Clark)

DATA 1030. Hands-on Data Science.

Develops all aspects of the machine learning pipeline: data acquisition and cleaning, handling missing data, exploratory data analysis, visualization, feature engineering, modeling, interpretation, presentation in the context of real-world datasets. Fundamental considerations for data analysis are emphasized (the bias-variance tradeoff, training, validation, testing). Classical models and techniques for classification and regression are included (linear and logistic regression with regularization, support vector machines, decision trees, random forests, XGBoost). Uses the Python data science ecosystem (e.g., sklearn, pandas, matplotlib). Prerequisites: A course equivalent to CSCI 0050, CSCI 0150 or CSCI 0170 are strongly recommended.

Fall	DATA1030	S01	18121	TTh	10:30-11:50(13)	(A. Zsom)

DATA 1050. Data Engineering.

The course will cover the storage, retrieval, and management of various types of data and the computing infrastructure (such as various types of databases and data structures) and algorithmic techniques (such as searching and sorting algorithms) and query languages (such as SQL) for interacting with data, both in the context of transaction processing (OLTP) and analytical processing (OLAP). Students will be introduced to measures for evaluating the efficacy of different techniques for interacting with data (such as 'Big-Oh' measure of complexity and the number of I/O operations) and various types of indexes for the efficient retrieval of data. The course will also cover several components of the Hadoop ecosystem for the processing of 'big data.' Additional topics include cloud computing and NoSQL databases. Introduction to concepts and techniques of computer science essential for data science will also be covered.

Fall	DATA1050	S01	18222	MWF	11:00-11:50(16)	(S. Pradhan)

DATA 1150. Data Science Fellows.

DATA 1150 for juniors and seniors possessing data science skills, seeking to apply these skills and collaborate with faculty to integrate data science content into Brown courses. The course teaches communication, teaching and learning strategies, and determining project requirements. Qualified students have a combination of programming experience (intermediate level or above in R or Python), statistical knowledge (intermediate level or above) and knowledge of how data and computing can be used in applied fields. Students in the data fluency certificate must have DATA 0200 prior to DATA 1150. Students need to complete the application (url below) no later than August 1st for consideration. Qualified students must participate in an interview with the instructor and override requests will be granted only to students by instructor approval. <https://forms.gle/Je3Przs3NDEo4eG9>

Fall	DATA1150	S01	18117	TTh	1:00-2:20(06)	(L. Clark)

DATA 1450. Text Analytics.

This course will first cover techniques for compiling textual corpora from web pages, pdfs, scanned pdfs, images, audio clips, etc. Secondly, it will look at processes for extracting some common types of information from these corpora. In particular, we will cover extracting named entities (persons, locations, organizations, etc.), relations between entities, events,

transactions, topics, document summaries, abstracts, legal clauses, etc. This course is different from standard courses in Natural Language Processing and Computational Linguistics in that we will spend significant amount of course time on compiling textual corpora from documents in a variety of formats and our emphasis will be on extracting information that can be fed to analytics pipelines.

Spr DATA1450 S01 26368 TTh 2:30-3:50(11) (S. Pradhan)

DATA 2020. Statistical Learning.

A modern introduction to inferential methods for regression analysis and statistical learning, with an emphasis on application in practical settings in the context of learning relationships from observed data. Topics will include basics of linear regression, variable selection and dimension reduction, and approaches to nonlinear regression. Extensions to other data structures such as longitudinal data and the fundamentals of causal inference will also be introduced.

Spr DATA2020 S01 26362 TTh 10:30-11:50(09) (R. DeVito)

DATA 2050. Data Science Practicum.

This course is a requirement for master's students in Data Science and is only open to them. The course includes a semester-long capstone project as well as instruction on topics that prepare students for working as data scientists, such as requirements gathering, version control, bug tracking, software deployment, and other professional development. Capstone projects will be sourced from entities in Brown (departments, labs, researchers, etc.) as well as external entities (companies, nonprofits, etc.) and will engage most of the core components of data science: Data sculpting (data cleaning, formatting, feature selection, etc.), exploratory data analysis, data modeling, and data visualization. Students will also address any social and ethical issues raised by their project. Students will usually work in teams of 3 - 4.

Fall DATA2050 S01 18362 TTh 2:30-3:50(12) (S. Pradhan)

Spr DATA2050 S01 26364 W 3:00-5:30(10) (S. Pradhan)

DATA 2060. Machine Learning: from Theory to Algorithms.

Data science techniques and tools are all around us. Machine learning is a term used across many different disciplines, and often people use machine learning tools without a thorough understanding of how and why the tools work. This course will provide a foundation of machine learning grounded in the mathematical models behind the techniques. We will cover the theory, computational methods, and visualization inherent in the application of machine learning models. Students will learn the statistical learning framework, common assumptions in the data generation process, the mathematics behind machine learning models, including supervised and unsupervised techniques, as well as how to implement machine learning models in Python from scratch. For DSI and CS master's students, no prerequisites required. Prerequisites for others are: MATH0520 (linear algebra) and one of APMA 1650, 1655, CSCI 1450, or DATA1030. Equivalencies will be considered by the instructor.

Fall DATA2060 S01 18227 MW 3:00-4:20(10) (A. Zsom)

DATA 2980. Research in Data Science.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Early Cultures

ERLY 1970. Individual Study Project.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ERLY 1990. Thesis Preparation.

Required of seniors in the honors program. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Center for the Study of the Early Modern World

EMOW 1120G. Reading Humanist Latin Texts (LATN 1120G).

Interested students must register for LATN 1120G.

Fall EMOW1120S01 19152 Arranged 'To Be Arranged'

EMOW 1266C. English History, 1529-1660 (HIST 1266C).

Interested students must register for HIST 1266C.

Fall EMOW1266 S01 19039 Arranged 'To Be Arranged'

EMOW 1825F. Nature, Knowledge, and Power in Early Modern Europe (HIST 1825F).

Interested students must register for HIST 1825F.

Fall EMOW1825 S01 19040 Arranged 'To Be Arranged'

EMOW 1825H. Science, Medicine and Technology in the 17th Century (HIST 1825H).

Interested students must register for HIST 1825H.

Fall EMOW1825 S01 19057 Arranged 'To Be Arranged'

EMOW 1964I. England Without a Monarchy: Regicide and Republic, 1649-1660.

Interested students must register for HIST 1964I.

Fall EMOW1964 S01 19034 Arranged 'To Be Arranged'

EMOW 1980. Independent Study in EMOW.

Tutorial instruction on a topic in the Renaissance or early modern period, supervised by a member of the core faculty. This number may be used by concentrators for the required Independent Project undertaken in the junior or senior year. Section numbers vary by professor; instructor permission required.

East Asian Studies Chinese

CHIN 0100. Basic Chinese.

A year-long introduction to Standard Chinese (Mandarin). Speaking, reading, writing, and grammar. Five classroom meetings weekly. This is the first half of a year-long course whose first semester grade is normally a temporary one. Neither semester may be elected independently without special written permission. The final grade submitted at the end of course work in CHIN 0200 covers the entire year and is recorded as the final grade for both semesters.

Fall CHIN0100 S01 16924 MWF 9:00-9:50(09) (L. Hu)

Fall CHIN0100 S01 16924 TTh 9:30-10:20(09) (L. Hu)

Fall CHIN0100 S02 16925 MWF 10:00-10:50(14) (L. Hu)

Fall CHIN0100 S02 16925 TTh 10:30-11:20(14) (L. Hu)

Fall CHIN0100 S03 16926 MWF 1:00-1:50(08) (L. Hu)

Fall CHIN0100 S03 16926 TTh 1:30-2:20(08) (L. Hu)

Fall CHIN0100 S04 16927 MWF 2:00-2:50(01) (L. Hu)

Fall CHIN0100 S04 16927 TTh 2:30-3:20(01) (L. Hu)

CHIN 0200. Basic Chinese.

A year-long introduction to Standard Chinese (Mandarin). Speaking, reading, writing, and grammar. Five classroom meetings weekly. This is the second half of a year-long course. Students must have taken CHIN 0100 to receive credit for this course. The final grade for this course will become the final grade for CHIN 0100. If CHIN 0100 was taken for credit then this course must be taken for credit; if taken as an audit, this course must also be taken as an audit. Exceptions to this policy must be approved by both the academic department and the Committee on Academic Standing.

Spr CHIN0200 S01 25679 MWF 9:00-9:50(02) (L. Jiao)

Spr CHIN0200 S01 25679 TTh 9:30-10:20(02) (L. Jiao)

Spr CHIN0200 S02 25680 MWF 10:00-10:50(03) (L. Jiao)

Spr CHIN0200 S02 25680 TTh 10:30-11:20(03) (L. Jiao)

Spr CHIN0200 S03 25681 MWF 1:00-1:50(06) (L. Jiao)

Spr CHIN0200 S03 25681 TTh 1:30-2:20(06) (L. Jiao)

Spr CHIN0200 S04 25682 MWF 2:00-2:50(07) (L. Jiao)

Spr CHIN0200 S04 25682 TTh 2:30-3:20(07) (L. Jiao)

CHIN 0300. Intermediate Chinese.

An intermediate course in Standard Chinese designed to further communicative competence and to develop reading and writing skills. Five classroom meetings weekly. Prerequisite: CHIN 0200 or permission of instructor.

Fall CHIN0300 S01 16929 MWF 12:00-12:50(15) (W. Chen)

Fall CHIN0300 S01 16929 TTh 12:00-12:50(15) (W. Chen)

Fall CHIN0300 S02 16930 MWF 1:00-1:50(08) (W. Chen)

Fall CHIN0300 S02 16930 TTh 1:00-1:50(08) (W. Chen)

Fall	CHIN0300	S03	16931	MWF	2:00-2:50(01)	(W. Chen)
Fall	CHIN0300	S03	16931	TTh	2:30-3:20(01)	(W. Chen)

CHIN 0350. Elementary to Intermediate Chinese for Advanced Beginners.

This course is designed to enhance listening, speaking, reading, and writing skills for Chinese heritage students who have some prior knowledge of Chinese. Five classroom meetings weekly. Placement interview required.

Fall	CHIN0350	S01	16937	TTh	12:00-12:50(14)	(L. Hu)
Fall	CHIN0350	S01	16937	MWF	10:00-10:50(14)	(L. Hu)

CHIN 0400. Intermediate Chinese.

An intermediate course in Standard Chinese designed to further communicative competence and to develop reading and writing skills. Five classroom meetings weekly. Prerequisite: CHIN 0300 or permission of instructor.

Spr	CHIN0400	S01	25683	MWF	12:00-12:50(01)	(W. Chen)
Spr	CHIN0400	S01	25683	TTh	12:00-12:50(01)	(W. Chen)
Spr	CHIN0400	S02	25684	MWF	1:00-1:50(06)	(W. Chen)
Spr	CHIN0400	S02	25684	TTh	1:00-1:50(06)	(W. Chen)
Spr	CHIN0400	S03	25685	MWF	2:00-2:50(07)	(W. Chen)
Spr	CHIN0400	S03	25685	TTh	2:30-3:20(07)	(W. Chen)

CHIN 0450. Advanced Chinese for Heritage Learners.

This course is primarily designed for Chinese heritage students who have successfully completed CHIN 0350. If you have not taken CHIN0350, please contact the instructor for a proficiency evaluation. Upon completing this course, you can take CHIN 0700 or equivalent, i.e. courses that have a prerequisite of CHIN 0600. This is an advanced-level course offering comprehensive work on all four language skills, with a focus on developing your ability to use sophisticated grammatical structures, vocabulary, and improving your reading and speaking skills. Materials used in this course will include a textbook, supplementary articles, and video clips.

Spr	CHIN0450	S01	25691	TTh	12:00-12:50(03)	(L. Hu)
Spr	CHIN0450	S01	25691	MWF	10:00-10:50(03)	(L. Hu)

CHIN 0500. Advanced Modern Chinese I.

An advanced course designed to enable students to read authentic materials. Students enhance their listening, speaking, reading, and writing skills; improve their narrative and descriptive abilities; and learn to express abstract ideas both orally and in writing. Five classroom meetings weekly. Prerequisite: CHIN 0250 or CHIN 0400 or permission of instructor.

Fall	CHIN0500	S01	16932	MWF	9:00-9:50(09)	(J. Huang Hsieh)
Fall	CHIN0500	S01	16932	TTh	9:00-9:50(09)	(J. Huang Hsieh)
Fall	CHIN0500	S02	16933	MWF	11:00-11:50(16)	(J. Huang Hsieh)
Fall	CHIN0500	S02	16933	TTh	11:00-11:50(16)	(J. Huang Hsieh)
Fall	CHIN0500	S03	16934	MWF	12:00-12:50(15)	(J. Huang Hsieh)
Fall	CHIN0500	S03	16934	TTh	12:00-12:50(15)	(J. Huang Hsieh)

CHIN 0600. Advanced Modern Chinese I.

An advanced course designed to enable students to read authentic materials. Students enhance their listening, speaking, reading, and writing skills; improve their narrative and descriptive abilities; and learn to express abstract ideas both orally and in writing. Five classroom meetings weekly. Prerequisite: CHIN 0500 or permission of instructor.

Spr	CHIN0600	S01	25686	MWF	9:00-9:50(02)	(L. Su)
Spr	CHIN0600	S01	25686	TTh	9:00-9:50(02)	(L. Su)
Spr	CHIN0600	S02	25687	MWF	11:00-11:50(04)	(L. Su)
Spr	CHIN0600	S02	25687	TTh	11:00-11:50(04)	(L. Su)
Spr	CHIN0600	S03	25688	MWF	12:00-12:50(01)	(L. Su)
Spr	CHIN0600	S03	25688	TTh	12:00-12:50(01)	(L. Su)

CHIN 0700. Advanced Modern Chinese II.

This course is designed to enhance the Chinese proficiency of those who have taken Advanced Modern Chinese I (CHIN 0600) or the equivalent. All four language skills are emphasized through selected authentic materials. At the end of the year, students should be able to express their ideas with sophistication and nuance. Drills on complex sentence patterns will be conducted when necessary. Prerequisite: CHIN 0600 or permission of instructor.

Fall	CHIN0700	S01	16935	MWF	10:00-10:50(14)	(Y. Wang)
Fall	CHIN0700	S02	16936	MWF	11:00-11:50(16)	(Y. Wang)

CHIN 0800. Advanced Modern Chinese II.

See Advanced Modern Chinese II (CHIN 0700) for course description. Prerequisite: CHIN 0700 or permission of instructor.

Spr	CHIN0800	S01	25689	MWF	10:00-10:50(03)	(Y. Wang)
Spr	CHIN0800	S02	25690	MWF	11:00-11:50(04)	(Y. Wang)

CHIN 1010. Stories from the Chinese Empire: Scholars, Demons and Swindlers.

This bilingual course introduces the culture and society of late imperial China by reading short stories, novels, prose essays between 1368 and 1911. To maintain students' language skills, the lecture is primary in mandarin aided by English explanation. Students can choose to complete the assignments in either English or Chinese. The course explores the interwoven spectacular fantasy and societal reality of the imperial China. A chronological exposure to different cultural practice and social structures is organized under three rubrics, namely, scholar-official as social elite; merchants and courtesans as mobile agents; and criminals and demons as outcast.

Spr	CHIN1010	S01	25642	TTh	1:00-2:20(08)	(K. Chen)

CHIN 2450. Exchange Scholar Program.

Fall	CHIN2450	S01	16544	Arranged	'To Be Arranged'	

East Asian Studies

EAST 0140. Childhood and Culture in Japan.

This seminar offers students an interdisciplinary look at how children became central to social life in modern Japan. What set of historical and philosophical conditions made childhood newly visible in the late 19th century? How has the relationship between the marketplace and childhood evolved over the past hundred years? How have class, gender, ethnicity and sexuality inflected the ways childhood has been experienced? Students will analyze different cultural texts for and about children (early fairy tales, comic books, propaganda, film) in relation to critical essays drawn from a variety of disciplines.

Fall	EAST0140	S01	17232	TTh	9:00-10:20(05)	(S. Perry)

EAST 0304. Words on Things: Literature and Material Culture in Early Modern China.

This course examines Chinese literary representation of artifacts written between 1000 to 1900 CE. Our discussion will highlight international trade and the transforming science and technology in early modern China. The course aims to guide students to conduct inter-artistic analysis as a means to decipher the political, religious, gendered, and technical significance embedded in literary representation of material objects. To emphasize a comparative perspective, we will also draw on scholarship outside of the field of Chinese literature. We will explore artifacts in the following categories: illustration, painting and calligraphy, seals, ceramics, furniture, and textile.

Spr	EAST0304	S01	25641	TTh	10:30-11:50(09)	(K. Chen)

EAST 0305. China Modern: An Introduction to the Literature of Twentieth-Century China.

A general introduction to modern and contemporary Chinese literature from the May Fourth Movement to contemporary Taiwan and the People's Republic of China. Emphasizes reading of literary works in relation to topics such as cultural tradition, modernity, nationalism, revolution, class, gender, region, cultural commodification, and literary innovations. Readings in English. No previous knowledge of Chinese required.

Spr	EAST0305	S01	25632	TTh	2:30-3:50(11)	(L. Wang)

EAST 0703. Confucianism and Its Critics.

This course confronts the changing historical phenomenon we call "Confucianism" on its own terms, as represented by its advocates, as well as from the perspective of its interlocutors and critics. It is an opportunity to become familiar not only with the Confucian canon and its main commentarial traditions, which undergirded education in East Asia into the nineteenth century, but also with the ways in which these ideas were rejected, adjusted, and reconfigured in early Daoist discussions, Neo-Confucian debates with Buddhists, and modern disputes over their socioeconomic, political, and/or gender impact. Readings are drawn from primary Chinese, Korean, and Japanese texts in translation, and from

modern interpretations of Confucianism and its legacy. The course format is primarily discussion and short lecture. No prerequisites. Counts for concentration credit in East Asian Studies and Religious Studies.

Fall EAST0703 S01 19016 TTh 1:00-2:20(06) (J. Sawada)

EAST 1304. Crafting Early Modern China: Handicraft, Witchcraft and Statecraft.

This course examines how Chinese cultural industry was shaped by socio-political institutions and religious practice between 1400 and 1900 CE. The course highlights the concept of craft, broadly understood as the ways of making artifacts and building social community by using environmental resources and through micro-political negotiations in everyday life. The course aims to equip students in ways to decipher the political, religious and gendered significance embedded in cultural products, including literature and decorative arts. We will explore artifacts from the following categories: literary illustration, painting and calligraphy, seals, ceramics, furniture, and textiles. Prerequisites: None.

Fall EAST1304 S01 17223 M 3:00-5:30(03) (K. Chen)

EAST 1501. Korean Culture and Film.

This course aims to introduce and explore various aspects of Korean history, culture and society. Students are expected to develop a comprehensive understanding of Korean culture by examining contemporary films that pertain to issues such as national identity, history, international relations, religion, Korean life style, and family life. Enrollment limited to 20.

Spr EAST1501 S01 25631 W 3:00-5:30(10) (H. Wang)

EAST 1505. Two Koreas.

This course aims to look beyond larger regional politics and the security issues to the "invisible" North Korea – its culture, everyday life, films, and literature, within the general parameters of peninsular Korean history. We will begin with a detailed look into the formation of the North and South Korean states, and will continue on, focusing on the cultural and political history of North Korea. Most effort will be given, however, to dismantling conventional media coverage and representations, and to understanding how symbols, propaganda and media have affected the lives of millions of North Koreans in their everyday lived experiences.

Fall EAST1505 S01 18976 F 3:00-5:30(11) 'To Be Arranged'

EAST 1510. Chinese: A History of the Language.

This course traces the historical evolution of modern Chinese, commonly known as Mandarin. We will examine the uniqueness of Chinese characters, and explore their relationship to other features of the language, including word formation, phonology, grammar, and dialects. The goal will be to understand the manner by which the written script has become so central to the development of Chinese civilization.

Fall EAST1510 S01 17233 W 3:00-5:30(10) (Z. Li)

Spr EAST1510 S01 25644 T 4:00-6:30(16) (Z. Li)

EAST 1910. Independent Study.

Sections numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EAST 1931. Market Economy, Popular Culture, and Mass Media in Contemporary China.

Course focuses on mainland Chinese cultural and media production since the mid 1980's, when China began transforming itself culturally and economically into a capitalist society with socialist characteristics. Traditional values, socialist legacy, commercial forces, and globalization have all played significant roles in the ongoing transformation. The goal of the course is to examine the complex interactions among diverse historical forces in a rapidly changing China. Course taught in Mandarin Chinese.

Spr EAST1931 S01 25629 M 3:00-5:30(13) (L. Wang)

EAST 1941. Translating Japanese: Short Fiction, Poetry, Film and Manga.

This seminar/workshop discusses a broad range of narrative arts produced over the past 100 years in Japan, and practices the art of translating them. Drawing rigor from the field of linguistics and translation theory, we shall make central to our effort of analyzing Japanese cultural productions an attentiveness to the historicity of language and a self-consciousness of our roles as cultural interpreters. While the course will focus on mid-20th century Japanese short fiction, we will also work on poetry, music, manga, animation, and film, depending on the interests

of enrolled students. Pre-requisites: JAPN 0600 or equivalent. Instructor permission required.

Fall EAST1941 S01 17224 Th 4:00-6:30(04) (S. Perry)

EAST 1942. Queer Japan: Culture, History and Sexuality.

This seminar investigates cultural practices enacted by Japanese gays and lesbians, or otherwise related to same-sex attraction. How have sexual identities traditionally been constructed in Japan, and how has the modern period transformed them? How has same-sex sexuality become figured in the Japanese art, literature and popular culture of the 20th century; and how have the forces of a global LGBT culture interacted with the specific experiences of a same-sex community in Japan? This class explores questions about queer history, writing and cultural practice by looking at particular moments in the Japanese past and present.

Spr EAST1942 S01 25640 F 3:00-5:30(15) (S. Perry)

EAST 1980. Reading and Writing of the Honors Thesis.

Prior admission to honors candidacy required. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EAST 2450. Exchange Scholar Program.

Fall EAST2450 S01 16556 Arranged 'To Be Arranged'

Spr EAST2450 S01 25220 Arranged 'To Be Arranged'

EAST XLIST. Courses of Interest to Concentrators.

Japanese

JAPN 0100. Basic Japanese.

Introduction to Japanese language. Emphasizes the attainment of good spoken control of Japanese and develops a foundation of literacy. No prerequisites. This is the first half of a year-long course whose first semester grade is normally a temporary one. Neither semester may be elected independently without special written permission. The final grade submitted at the end of the course work in JAPN 0200 covers the entire year and is recorded as the final grade for both semesters. The East Asian Studies department wishes to provide language instruction to all interested students. If you are unable to register for this course due to enrollment limits but are dedicated to learning Japanese, please contact the instructor via email.

Fall JAPN0100 S01 16980 MWF 9:00-9:50(09) (N. McPherson)

Fall JAPN0100 S01 16980 TTh 9:00-10:30(09) (N. McPherson)

Fall JAPN0100 S02 16981 MWF 10:00-10:50(14) (N. McPherson)

Fall JAPN0100 S02 16981 TTh 10:30-12:00(14) (N. McPherson)

Fall JAPN0100 S03 16982 MWF 11:00-11:50(16) (N. McPherson)

Fall JAPN0100 S03 16982 TTh 1:00-2:30(16) (N. McPherson)

Fall JAPN0100 S04 16983 MWF 1:00-1:50(08) (N. McPherson)

Fall JAPN0100 S04 16983 TTh 2:30-4:00(08) (N. McPherson)

Fall JAPN0100 S05 16984 MWF 5:40-6:30(02) (N. McPherson)

Fall JAPN0100 S05 16984 TTh 6:40-8:00PM(02) (N. McPherson)

JAPN 0200. Basic Japanese.

Introduction to Japanese language. Emphasizes the attainment of good spoken control of Japanese and develops a foundation of literacy. This is the second half of a year-long course. Students must have taken JAPN 0100 to receive credit for this course. The final grade for this course will become the final grade for JAPN 0100. If JAPN 0100 was taken for credit then this course must be taken for credit; if taken as an audit, this course must also be taken as an audit. Exceptions to this policy must be approved by both the academic department and the Committee on Academic Standing. The East Asian Studies department wishes to provide language instruction to all interested students. If you are unable to register for this course due to enrollment limits but are dedicated to learning Japanese, please contact the instructor via email.

Spr JAPN0200 S01 25712 MWF 9:00-9:50(02) (A. Borgmann)

Spr JAPN0200 S01 25712 TTh 9:00-10:20(02) (A. Borgmann)

Spr JAPN0200 S02 25713 MWF 10:00-10:50(03) (A. Borgmann)

Spr JAPN0200 S02 25713 TTh 10:30-11:50(03) (A. Borgmann)

Spr JAPN0200 S03 25714 MWF 11:00-11:50(04) (A. Borgmann)

Spr JAPN0200 S03 25714 TTh 1:00-2:20(04) (A. Borgmann)

Spr JAPN0200 S04 25715 MWF 1:00-1:50(06) (A. Borgmann)

Spr JAPN0200 S04 25715 TTh 2:30-3:50(06) (A. Borgmann)

Spr	JAPN0200	S05	25716	MWF	5:30-6:20(18)	(A. Yamakawa)
Spr	JAPN0200	S05	25716	TTh	6:40-8:00PM(18)	(A. Yamakawa)

JAPN 0300. Intermediate Japanese.

Further practice of patterns and structures of the language. Readings are introduced on aspects of Japanese culture and society to develop reading and writing skills, enhance vocabulary, and provide points of departure for conversation in Japanese. Prerequisite: JAPN 0200 or equivalent. The East Asian Studies department wishes to provide language instruction to all interested students. If you are unable to register for this course due to enrollment limits but are dedicated to learning Japanese, please contact the instructor via email.

Fall	JAPN0300	S01	17159	MWF	11:00-11:50(16)	(N. Tatsumi)
Fall	JAPN0300	S01	17159	TTh	11:00-11:50(16)	(N. Tatsumi)
Fall	JAPN0300	S02	17160	MWF	12:00-12:50(15)	(N. Tatsumi)
Fall	JAPN0300	S02	17160	TTh	12:00-12:50(15)	(N. Tatsumi)
Fall	JAPN0300	S03	17161	MWF	3:00-3:50	(N. Tatsumi)
Fall	JAPN0300	S03	17161	TTh	3:00-3:50	(N. Tatsumi)

JAPN 0400. Intermediate Japanese.

See Intermediate Japanese (JAPN 0300) for course description. Prerequisite: JAPN 0300 or equivalent. Enrollment limited to 18.

Spr	JAPN0400	S01	25717	MWF	11:00-11:50(04)	(N. Tatsumi)
Spr	JAPN0400	S01	25717	TTh	11:00-11:50(04)	(N. Tatsumi)
Spr	JAPN0400	S02	25718	MWF	12:00-12:50(01)	(N. Tatsumi)
Spr	JAPN0400	S02	25718	TTh	12:00-12:50(01)	(N. Tatsumi)
Spr	JAPN0400	S03	25719	MTWThF	3:00-3:50	(N. Tatsumi)

JAPN 0500. Advanced Japanese I.

Continued practice in reading, writing, and speaking. Emphasizes the development of reading proficiency and speaking in cultural contexts. Students read actual articles and selections from Japanese newspapers. Course includes translation, with writing and discussion in Japanese. Films and video tapes are shown as supplementary materials. Prerequisite: JAPN 0400 or equivalent.

Fall	JAPN0500	S01	17218	MWF	10:00-10:50(14)	(A. Yamakawa)
Fall	JAPN0500	S01	17218	TTh	12:00-12:50(14)	(A. Yamakawa)
Fall	JAPN0500	S02	17219	MWF	1:00-1:50(08)	(A. Yamakawa)
Fall	JAPN0500	S02	17219	TTh	1:00-1:50(08)	(A. Yamakawa)

JAPN 0600. Advanced Japanese I.

See Advanced Japanese I (JAPN 0500) for course description.

Spr	JAPN0600	S01	25720	MWF	10:00-10:50(03)	(A. Yamakawa)
Spr	JAPN0600	S01	25720	TTh	12:00-12:50(03)	(A. Yamakawa)
Spr	JAPN0600	S02	25721	MWF	1:00-1:50(06)	(A. Yamakawa)
Spr	JAPN0600	S02	25721	TTh	1:00-1:50(06)	(A. Yamakawa)

JAPN 0700. Advanced Japanese II.

Reading of articles from Japan's press with discussion in Japanese. Focuses on explanations and drills on the fine points in grammar and vocabulary as well as on the practice of writing in various styles. Movies and video tapes are used as supplementary materials. Prerequisite: JAPN 0600 or equivalent.

Fall	JAPN0700	S01	17220	MWF	2:00-2:50(01)	(S. Hiramatsu)

JAPN 0800. Advanced Japanese II.

See Advanced Japanese II (JAPN 0700) for course description.

Spr	JAPN0800	S01	25722	MWF	2:00-2:50(07)	(S. Hiramatsu)

JAPN 0811. Business Japanese.

Designed to teach post-advanced level Japanese language, with the focus on effective oral and written communication in business situations, this course emphasizes vocabulary building in the areas of business and economics, use of formal expressions, business writing, and conversation and presentation skills, as well as familiarizing students with Japanese corporate culture, protocol, and interpersonal relationships. Prerequisite: JAPN 0700 or equivalent. Enrollment limited to 20. Instructor permission required.

Fall	JAPN0811	S01	17222	TTh	1:00-2:20(06)	(A. Borgmann)

JAPN 0812. Japanese Language and Society through Contemporary Film.

This course aims at further development of your linguistic proficiency and broadening your knowledge of Japanese language, culture, and society by studying contemporary Japanese film through the lens of social justice. Films are selected from a wide range of genres: mainstream blockbusters, documentaries, and anime. Our discussions will focus on the cinematic treatment of diversity and social justice in Japan, including issues related to racial/ethnic and sexual minorities in Japan (Ainu, burakumin, Okinawan, Zainichi, "Half", LGBTQ), gender discrimination, economic inequality, and mental/physical disability. Prerequisites: JAPN 0700 or equivalent, Japanese heritage language speakers with instructor's consent.

Spr	JAPN0812	S01	25724	TTh	2:30-3:50(11)	(N. McPherson)

Korean**KREA 0100. Korean.**

Begins with an introduction to the Korean writing system (Hangul) and focuses on building communicative competence in modern Korean in the four language modalities (listening, speaking, reading, writing). Provides a foundation for later work in spoken and written Korean. Five classroom hours per week. No prerequisite. Enrollment limited to 18. This is the first half of a year-long course whose first semester grade is normally a temporary one. Neither semester may be elected independently without special written permission. The final grade submitted at the end of the course work in KREA 0200 covers the entire year and is recorded as the final grade for both semesters.

Fall	KREA0100	S01	16972	MWF	9:00-9:50(09)	(K. Moon)
Fall	KREA0100	S01	16972	TTh	9:30-10:50(09)	(K. Moon)
Fall	KREA0100	S02	16973	MWF	11:00-11:50(16)	(K. Moon)
Fall	KREA0100	S02	16973	TTh	11:00-11:50(16)	(K. Moon)
Fall	KREA0100	S03	16974	MWF	2:00-2:50(01)	(K. Moon)
Fall	KREA0100	S03	16974	TTh	2:00-2:50(01)	(K. Moon)

KREA 0200. Korean.

Begins with an introduction to the Korean writing system (Hangul) and focuses on building communicative competence in modern Korean in the four language modalities (listening, speaking, reading, writing). Provides a foundation for later work in spoken and written Korean. Six classroom hours per week. Enrollment limited to 18. This is the second half of a year-long course. Students must have taken KREA 0100 to receive credit for this course. The final grade for this course will become the final grade for KREA 0100. If KREA 0100 was taken for credit then this course must be taken for credit; if taken as an audit, this course must also be taken as an audit. Exceptions to this policy must be approved by both the academic department and the Committee on Academic Standing.

Spr	KREA0200	S01	25636	MWF	9:00-9:50(02)	(K. Moon)
Spr	KREA0200	S01	25636	TTh	9:00-9:50(02)	(K. Moon)
Spr	KREA0200	S02	25637	MWF	11:00-11:50(04)	(K. Moon)
Spr	KREA0200	S02	25637	TTh	11:00-11:50(04)	(K. Moon)
Spr	KREA0200	S03	25638	MWF	2:00-2:50(07)	(K. Moon)
Spr	KREA0200	S03	25638	TTh	3:20-4:10(07)	(K. Moon)

KREA 0300. Intermediate Korean.

An intermediate course in Korean designed to further communicative competence in spoken Korean and to provide additional reading practice in stylistically higher level materials that are progressively integrated into the given dialogues. Discussions on various aspects of Korean culture and society. Five classroom hours per week. Prerequisite: KREA 0200 or instructor permission.

Fall	KREA0300	S01	16975	MWF	12:00-12:50(15)	(H. Jung)
Fall	KREA0300	S01	16975	TTh	12:00-12:50(15)	(H. Jung)
Fall	KREA0300	S02	16976	MWF	1:00-1:50(08)	(H. Jung)
Fall	KREA0300	S02	16976	TTh	1:00-1:50(08)	(H. Jung)

KREA 0400. Intermediate Korean.

See Intermediate Korean (KREA 0300) for course description.

Prerequisite: KREA 0300 or equivalent.

Spr	KREA0400	S01	25634	MWF	12:00-12:50(01)	(H. Jung)
Spr	KREA0400	S01	25634	TTh	12:00-12:50(01)	(H. Jung)

Spr	KREA0400	S02	25635	MWF	1:00-1:50(06)	(H. Jung)
Spr	KREA0400	S02	25635	TTh	1:00-1:50(06)	(H. Jung)

KREA 0500. Advanced Korean.

Aims to help students develop an advanced level of communicative competence, with special focus on enhancing their reading comprehension, essay writing, and discourse (discussion and presentation) skills. Authentic reading materials from a variety of sources will be used to introduce various topics and issues pertaining to Korean society and culture, thus students' cultural understanding will also be enhanced. Prerequisite: KREA 0400 or equivalent or permission of instructor.

Fall	KREA0500	S01	16977	MWF	12:00-12:50(15)	(H. Wang)

KREA 0600. Advanced Korean.

See Advanced Korean (KREA 0500) for course description. Prerequisite: KREA 0500 or equivalent or permission of instructor.

Spr	KREA0600	S01	25633	MWF	12:00-12:50(01)	(H. Wang)

Vietnamese**VIET 0100. Beginning Vietnamese.**

This course is the first half of a year-long introduction to Vietnamese designed for absolute beginners or students with very little prior of Vietnamese. It aims to build up a solid foundation of pronunciation and grammar for your Vietnamese language studies and allow you to feel confident in communicating about everyday situations. This course will get you speaking, listening, writing, reading, and understanding aspects of Vietnamese culture through authentic conversations, language presentation, and extensive practice and review.

Fall	VIET0100	S01	17327	TTh	1:00-1:50(08)	(T. Tran)

Fall	VIET0100	S01	17327	MWF	1:00-1:50(08)	(T. Tran)

VIET 0200. Beginning Vietnamese.

VIET 0200 is the second half of a year-long introduction to Vietnamese designed for absolute beginners or students with very little prior knowledge of Vietnamese. It aims to build up a solid foundation of pronunciation and grammar for your Vietnamese language studies and allow you to feel confident in communicating about everyday situations. This course will get you speaking, listening, writing, reading, and understanding aspects of Vietnamese culture through authentic conversations, language presentation, and extensive practice and review.

Spr	VIET0200	S01	25770	TTh	1:00-1:50(06)	(T. Tran)

Spr	VIET0200	S01	25770	MWF	1:00-1:50(06)	(T. Tran)

VIET 0300. Intermediate Vietnamese.

This course is designed for students who have completed the second semester of Vietnamese VIET 0200 or have an equivalent level of proficiency. This course will expand your structures and knowledge of the Vietnamese language and multifaceted culture through idioms, proverbs, dialogues, and stories. Classroom activities and practices will help you communicate effectively and absorb meaning through speaking, listening, reading, and writing.

Fall	VIET0300	S01	17328	TTh	12:00-12:50(16)	(T. Tran)

Fall	VIET0300	S01	17328	MWF	11:00-11:50(16)	(T. Tran)

VIET 0400. Intermediate Vietnamese.

VIET 0400 is designed for students who have completed the third semester of Vietnamese VIET 0300 or have an equivalent level of proficiency. This course will expand your structures and knowledge of the Vietnamese language and multifaceted culture through idioms, proverbs, dialogues, and stories. Classroom activities and practices will help you communicate effectively and absorb meaning through speaking, listening, reading, and writing.

Spr	VIET0400	S01	25771	TTh	12:00-12:50(04)	(T. Tran)

Spr	VIET0400	S01	25771	MWF	11:00-11:50(04)	(T. Tran)

Earth, Environmental and Planetary Sciences**EEPS 0010. Face of the Earth.**

This course covers the fundamental processes that have created and sculpted the Earth's surface, from the highest mountains to the deepest oceans; from the hottest deserts, to the coldest glaciers. These processes include plate tectonics, volcanism, earthquakes, glaciation and erosion.

The goals are to provide an understanding of how our planet works and provide experience in interpreting geologic information. This will provide student with a deeper understanding of important issues such as climate change, pollution, natural resources, land use, and geologic hazards. For nonscience concentrators. Geoscience concentrators should take EEPS 0220.

Spr	EEPS0010	S01	26305	MWF	1:00-1:50(06)	(Y. Liang)

EEPS 0050. Mars, Moon, and the Earth.

Space exploration has revealed an astonishing array of surface features on the planets and their satellites. Why are atmospheres on the planets different from Earth's atmosphere? Do other planets represent our past or future environment? Is there life on other planets? The planets and their histories are compared to gain insight and a new perspective on planet Earth.

Fall	EEPS0050	S01	16691	MWF	2:00-2:50(01)	(A. Evans)

EEPS 0070. Introduction to Oceanography.

Examines the ocean's role in Earth's global environment, emphasizing the dynamical interaction of the ocean with the atmosphere, biosphere, cryosphere, and lithosphere. Focus on physical/chemical/biological systems' interconnections needed to understand natural and anthropogenic variability on various time and space scales, from El Niño to global warming. Three lectures, written exercises on oceanographic problems; two field trips to study estuarine and coastal processes.

Fall	EEPS0070	S01	16695	MWF	1:00-1:50(08)	(S. Clemens)

EEPS 0160K. Geology of Star Wars.

A long time ago, in a galaxy far, far away, there was a universe filled with volcanic worlds, vast deserts hiding Kyber crystals, lush jungles teeming with life, and enchanting water worlds. Journey through the heart of Star Wars, where science fiction meets science fact. Join us as we assess the realism of these fictional realms, drawing comparisons with Earth, our planet's history, and other celestial bodies. It takes you beneath the surface, relating geologic systems with key environmental issues. Climate change, mineral mining, water management, and the quest for energy resources are all on the agenda. You get to choose your path, diving deeply into your favorite Star Wars planet and unraveling its connections to these crucial challenges. It promises an exhilarating ride through the Star Wars galaxy, where the Force of geology intersects with the thrill of storytelling.

Fall	EEPS0160KS01	18988	TTh	2:30-3:50(12)	(E. Cooperdock)

EEPS 0160M. Natural Disasters.

This First Year Seminar will explore natural disasters: the physical processes that cause them, and their effects on human life. Types of natural disasters covered include earthquakes, volcanoes, tsunamis, hurricanes, tornadoes, and floods. We will explore how and why natural disasters disproportionately affect low-income and minority communities. The focus of the course will be case studies of specific disasters, allowing us to discuss both the science of natural hazards and the vulnerability of human populations to those hazards.

Fall	EEPS0160MS01	16693	TTh	10:30-11:50(13)	(C. Dalton)

EEPS 0160R. Geollywood: Geosciences in Hollywood.

This course explores how Earth, environmental and planetary sciences are perceived by the public through Hollywood movies and TV shows. In this First Year Seminar, students will learn about basic geologic/environmental principles and how they are portrayed in popular culture. Students will critically analyze the depiction of geological processes, space exploration, and environmental issues in movies and explore how these portrayals influence public perception of these fields and the scientists who study them. This course aims to bridge the gap between scientific concepts and public engagement through the lens of popular culture, fostering a deeper appreciation for the geosciences and the role of media in shaping scientific knowledge of the general public.

Fall	EEPS0160RS01	19159	TTh	1:00-2:20(06)	(L. Perez-Angel)

EEPS 0220. Understanding Earth and Environmental Processes.

How does plate tectonics create mountains, earthquakes and volcanoes? What processes drive climate change? How do humans exacerbate flooding? This course provides an introduction to the processes that shape the Earth's surface, govern the structure of its interior, cause natural hazards, contribute to climate change and affect the human environment.

Topics include interior processes (plate tectonics, mountain building, volcanism, earthquakes, flow of solid rocks), environmental processes (climate change, atmospheric and oceanic circulation, flow of rivers, glaciers, groundwater, water and energy resources), and the connections between them. Lectures are complemented by three labs, informal small-group study sessions, and field trips. Collaborative learning is encouraged. Enrollment is limited to 100.

Fall EEPS0220 S01 16694 TTh 10:30-11:50(13) (K. Fischer)

EEPS 0230. Geochemistry: Earth and Planetary Materials and Processes.

This course is an introduction to the formation of minerals and rocks, and the physico-chemical processes acting during planetary evolution. Topics include: Earth formation and differentiation, determination of age and origin of volcanic, crustal and mantle rocks using their elemental compositions and radiogenic and stable isotopes. Weekly laboratory. Intended for science concentrators. Lab times TBD

Spr EEPS0230 S01 26304 TTh 1:00-2:20(08) (S. Parman)

EEPS 0240. Earth: Evolution of a Habitable Planet.

Introduces Earth's surface environment evolution - climate, chemistry, and physical makeup. Uses Earth's carbon cycle to understand solar, tectonic, and biological cycles' interactions. Examines the origin of the sedimentary record, dating of the geological record, chemistry and life on early Earth, and the nature of feedbacks that maintain the "habitable" range on Earth. Two field trips; five laboratories arranged.

Spr EEPS0240 S01 26309 MWF 11:00-11:50(04) (T. Herbert)

EEPS 0810. Planetary Geology.

This introductory level course will examine the evolution of our Solar System and the geology of planetary bodies, including Mercury, Venus, the Moon, Mars, asteroids, and the moons of Jupiter and Saturn. We will discuss the origin of the Solar System from a geological perspective and explore how scientists combine observations from extraterrestrial samples such as meteorites with data returned by satellites and rovers to develop and test hypotheses related to planetary evolution. Emphasis will be on comparing geologic processes on these bodies to well-understood processes on Earth, results from past, current, and upcoming planetary missions, and the future of human and robotic exploration of space.

Spr EEPS0810 S01 26303 MWF 10:00-10:50(03) (R. Milliken)

EEPS 0830. Water in Our World.

This course will focus on understanding natural and societal dimensions of the water cycle. The coming century will see substantial pressure on global water resources owing to increasing human demand, alteration of river systems, and climate change. The first half of the course introduces fundamental concepts in physical hydrological science, and the second explores human modifications and environmental problems associated with a perturbed water cycle. The topical sequence of the class will progress first through different components of the water cycle (e.g. precipitation, evaporation, runoff), followed by different ways in which humans use and depend upon freshwater resources.

Fall EEPS0830 S01 18319 MW 1:00-2:20 (L. Smith)

EEPS 1240. Stratigraphy and Sedimentation.

Introduction to depositional environments and processes responsible for formation of sedimentary rocks. Major sedimentary environments in the Recent are discussed, general models are proposed, and stratigraphic sequences in older sediments are examined in the light of these models. The Phanerozoic stratigraphic record is examined from the perspective of Earth system history. Laboratory arranged. Prerequisites: EEPS 0220 or 0240, or instructor permission.

Fall EEPS1240 S01 16699 TTh 10:30-11:50(13) 'To Be Arranged'

EEPS 1300. Terrestrial Biogeochemistry, Ecosystems and the Global Carbon Cycle.

This course will explore the fundamental interactions between the biotic and abiotic components of the surface Earth system. Life on Earth depends on biogeochemical cycling of elements - primary production provides the energy for all secondary growth, and the availability of rock and air derived nutrients, light, and water fundamentally constrain primary production across the biosphere. We will explore the ways in which the biogeochemistry of Earth's surface and ecosystems varies in space

and time, and how dramatically humans are altering the planet's major biogeochemical cycles, with a focus on the carbon cycle.

Fall EEPS1300 S01 18756 MWF 10:00-10:50(14) (D. Ibarra)

EEPS 1310. Global Water Cycle.

The goal of this class is to understand the physical principles and processes of the global water cycle. Topics include the climatic importance of water, circulation of atmospheric water vapor, formation of rain and snow, availability of soil water, plant-water relations, mass balance of glaciers, and ongoing and expected changes in the water cycle. Additional goals: become familiar with the current research literature, practice clear and concise science writing, and to use simple programming in Python to plot and analyze actual data sets.

Students are expected to have taken at least one geology-related course. Programming experience recommended, but not necessary.

Spr EEPS1310 S01 26308 TTh 2:30-3:50(11) (J. Lee)

EEPS 1320. Introduction to Geographic Information Systems for Environmental Applications.

This class serves as an introduction to Geographic Information Science (GIS). This innovative field explores the relationships between spatial information and a vast array of spatial data types. Through lab work and foundational lectures, this course covers the guiding principles behind various facets of GIS including the nature of spatial data, map projections, spatial model building, spatial analysis, and cartographic production. You will have the opportunity to explore cutting-edge GIS techniques and apply them to real-world problems across multiple disciplines. Throughout the course, you will be challenged to think spatially and practice basic GIS concepts and theory to enable you to make useful and meaningful contributions to various disciplines through spatial analysis and techniques. By evaluating the relationship between different spatial information, you'll develop a better understanding of how the world interacts and gain tools to make a difference.

Fall EEPS1320 S01 18323 TTh 1:00-2:20(06) (S. Salap-Ayca)

EEPS 1340. Machine Learning for the Earth and Environment.

This course introduces science students to modern data science tools for exploratory data analysis, predictive modeling with machine learning, and scalable algorithms for big data. The course will familiarize students with a cross-section of common machine learning models and algorithms with an emphasis on developing practical skills for working with data. Topics covered in the course may include dimensionality reduction, clustering, time series modeling, linear regression, regularization, linear classifiers, ensemble methods, neural networks, model selection and evaluation, scalable algorithms for big data, and data ethics. The course will present case studies of these tools applied to problems in the Earth sciences. The intended audience for this course is advanced undergraduate and graduate students in Earth, Environmental and Planetary Sciences or other physical science disciplines. Students will practice and develop their skills in data science through a hands-on project on a topic of their choice. This course is taught using the Python programming language.

Spr EEPS1340 S01 26306 TTh 10:30-11:50(09) (K. Bergen)

EEPS 1370. Environmental Geochemistry.

The course will examine the biogeochemical cycling, fate and transport of chemicals in the atmospheric and aquatic environments. Topics such as chemical weathering, natural water pollution and remediation, acid deposition, global warming and air pollution will be examined through natural ecosystem examples from rivers, lakes, estuaries, and ocean. Field trips and laboratory arranged. Prerequisites: CHEM 0100 or 0330, or instructor permission.

Fall EEPS1370 S01 16696 TTh 9:00-10:20(05) (Y. Huang)

EEPS 1380. Environmental Stable Isotopes.

Introduction to the concepts, analytical methods, theory and environmental applications of stable H, O, C, N and S isotopes. In addition, there will be an introduction to non-traditional stable isotopes of Li, Ca, Si and Mg as well as an introduction to clumped isotopes, mass fractionation laws and mass-independent isotope effects. Emphasis will be placed on theory and applications of light isotopes in paleoclimate studies, environmental hydrogeology and biogeochemistry. Prerequisites: CHEM 0100, EEPS 0220 or 0230 recommended, or instructor permission.

Spr EEPS1380 S01 26310 TTh 9:00-10:20(05) (D. Ibarra)

EEPS 1400. Climate Modeling I.

An introduction to climate modeling, focusing on the fundamental principles of climate dynamics and the techniques used to simulate and understand the climate system of Earth and other planets. Students will learn about the underlying physics, concepts, and computational methods involved in climate modeling. The course will explore the challenges and uncertainties associated with climate models and their role in predicting future climate change. The course has two tracks: quantitative and qualitative. Students in the quantitative track will gain hands-on experience with analyzing climate modeling output and software tools to do so and will be assessed with problem sets. Students in the qualitative track will focus on interpretation of model results and modeling concepts and have additional reading assignments and will be assessed with writing assignments.

Fall EEPS1400 S01 18788 MWF 2:00-2:50(01) (M. Freilich)

EEPS 1430. Principles of Planetary Climate.

This course provides the physical building blocks for understanding planetary climate. Topics include thermodynamics applied to planetary atmosphere, basic radiative transfer, energy balance in the atmosphere, and climate variability. In-class exercises and homework problems are designed to strengthen the understanding of basic concepts and to improve problem-solving skills.

Fall EEPS1430 S01 16698 TTh 2:30-3:50(12) (J. Lee)

EEPS 1510. Dynamic Meteorology.

The objective of EEPS 1510 is to understand the fundamental physical principles that govern the motion of the atmosphere. Students will explore the dynamics of the atmosphere and the mathematical laws governing weather and climate. Topics include the fundamental equations of motion in rotating fluids, hydrostatic, geostrophic and thermal wind balance, and vorticity, as applied to phenomena, including sea breezes, planetary waves, midlatitude cyclones, fronts, and the global general circulation. The emphasis will be on physical interpretation of the equations but facility with vector calculus is critical. Enrollment limited to 30.

Spr EEPS1510 S01 25395 TTh 1:00-2:20(08) (A. Lynch)

EEPS 1520. Ocean Circulation and Climate.

Examines physical characteristics, processes, and dynamics of the global ocean to understand circulation patterns and how they relate to ocean biology, chemistry, climate change. Assignments address ocean's role in the climate system; ocean observations and models; the origin, distribution, and dynamics of large-scale ocean circulation and water masses; energy and freshwater budgets; and variability of the coupled system on seasonal to centennial timescales e.g. El Niño. Intended for geological and physical sciences undergraduate and graduate students with quantitative skills and an interest in oceans, climate, paleoclimate. Pre-requisites: EEPS 0250, EEPS 0350, PHYS 0720, or APMA 0180. Offered alternate years.

Spr EEPS1520 S01 26307 TTh 1:00-2:20(08) (B. Fox-Kemper)

EEPS 1615. Climate Change, Human Rights, and the Policy Process.

The diminishing quality of Earth's systems and resources carries profound implications for the fulfillment of human rights and aspirations. But even as Western knowledge systems understand better the intrinsic interdependencies between humans and the non-human, policy gridlock persists. Indeed, scientific findings are regularly contested on political grounds. The purpose of this course is to learn how to apply diverse knowledges from Indigenous to Modern to map the relevant policy in problems at the intersection of human rights and environmental integrity, and to develop approaches to address them in ways that are creative, effective, responsible and just.

Fall EEPS1615 S01 18950 TTh 10:30-11:50 (A. Lynch)

EEPS 1690. Introduction to Methods in Data Analysis.

This class will be an overview of different ways one can quantitatively analyze data. Topics will include linear regression, least squares inversion, principal component analysis, and Bayesian methods. Emphasis will be on both a theoretical understanding of these methods and on practical applications to geophysical and earth science problems. Exercises will include using MATLAB to analyze data.

Fall EEPS1690 S01 16697 TTh 1:00-2:20(06) (V. Tsai)

EEPS 1710. Remote Sensing of Earth and Planetary Surfaces.

Geologic applications of remotely sensed information derived from interaction of electromagnetic radiation (X-ray, gamma-ray, visible, near-IR, mid-IR, radar) with geologic materials. Applications emphasize remote geochemical analyses for both terrestrial and extraterrestrial environments. Several spectroscopy and image processing labs. EEPS 1410 (Mineralogy), PHYS 0060, or equivalent recommended.

Fall EEPS1710 S01 16690 TTh 9:00-10:20(05) (R. Milliken)

EEPS 1970. Individual Study of Geologic Problems.

One semester is required for seniors in Sc.B. and honors program. Course work includes preparation of a thesis. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Enrollment is restricted to undergraduates only.

EEPS 2410. Kinetics of Geochemical Processes.

Emphasizes kinetic theories and their geological applications. Topics include: rate laws of chemical reaction, rates of chemical weathering; fundamentals of diffusion, nucleation, crystal growth, and dissolution; transport theory. Recommended prerequisite: EEPS 2460 or equivalent.

Fall EEPS2410 S01 16692 TTh 10:30-11:50(13) (Y. Liang)

EEPS 2450. Exchange Scholar Program.**EEPS 2980. Research in Geological Sciences.**

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Enrollment is restricted to graduate students only.

EEPS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall EEPS2990 S01 16562 Arranged 'To Be Arranged'

Spr EEPS2990 S01 25224 Arranged 'To Be Arranged'

Economics**ECON 0110. Principles of Economics.**

This course offers an extensive coverage of economic issues, institutions, and vocabulary, plus an introduction to economic analysis and its application to current social problems. It is required for all economics concentrators and it is a prerequisite for ECON 1110, 1130, 1210 and 1620. It also serves as a general course for students who will take no other economics courses and want a broad introduction to the discipline.

Fall ECON0110 S01 10187 MWF 9:00-9:50(09) (R. Friedberg)

Spr ECON0110 S01 20196 MWF 10:00-10:50(03) (R. Friedberg)

ECON 0160. Intro to Finance - Money, Markets and You.

References to business, accounting, and financial markets are ubiquitous in our daily lives but are often intimidating to the outsider due to the specialized vocabulary and extensive use of abbreviations and acronyms (S&P 500, Fed Funds rate, EBITDA, EPS, P/E, DCF, EVA, etc.). However, regardless of our career choices, business and the financial markets play a role in our lives. All of us are consumers of financial services and we are all directly and indirectly impacted by capital allocation and market movements - it behooves us to be educated consumers, employees, business owners, and citizens.

Spr ECON0160 S01 26511 MWF 9:00-9:50(02) (B. Gibbs)

ECON 0170. Essential Mathematics for Economics.

This course teaches the mathematical skills useful for upper level Economics classes. Emphasis is on acquisition of tools, problem solving, intuition, and applications rather than proofs.

This course satisfies the mathematics requirement for the Economics concentration, but does not serve as a prerequisite for upper level courses in Math, Applied Math, or other departments. Students planning further courses in those areas should take MATH 0100 or MATH 0170 (which also satisfy the Economics concentration requirement) instead. Ideally, ECON 0170 should be taken before ECON 1110, or at least simultaneously.

Fall ECON0170 S01 10188 MWF 12:00-12:50(15) (K. Mallory)

Spr ECON0170 S01 20197 MWF 12:00-12:50(01) (K. Mallory)

ECON 0400. Race and Inequality in America.

This seminar examines the social disadvantage of African American in the United States from the perspectives of economics, though with due

attention to sociology, politics and history. The course takes a holistic view of the relevant issues, ranging broadly. Quantitative economic analysis is used, but mastery of technique is not our primary focus. Issues to be examined include: Persistent racial disparities and their structural/historical origins Racial stereotypes, racial stigma, and racial justice Affirmative action policies Reparations for slavery, segregation and discrimination Race, Incarceration and American Values Race, crime, and urban policing Race and American politics

Spr ECON0400 S01 25975 TTh 1:00-2:20(08) (G. Loury)

ECON 0600. Gender in the Economy.

What determines the division of labor in a household? Why is the employment to population ratio for men lower today than it was in the 1950s? Why is it higher for women? What is the cause of the gender wage gap and how has it changed over time? These are some of the questions addressed in this course. We will cover economic theories, empirical research, and trends associated with: marriage, divorce, cohabitation, labor supply decisions, division of labor in the household, gender inequality, and fertility choices.

Fall ECON0600 S01 18574 MWF 12:00-12:50(15) (K. Forrester)

ECON 0710. Financial Accounting.

This comprehensive course covers the basics of accounting theory and practice. Students learn about the accounting procedures for various forms of business organizations, and the tools used to record, analyze, and communicate financial data within an organization. In addition, students learn how to interpret, decipher, and understand financial information and its role within the financial statements. Whether you're pursuing a career in accounting, finance, or any business-related field, this course equips you with the essential skills to navigate the complex world of financial reporting and analysis. This course is completely asynchronous and will be taught virtually. Students will use readings, assigned problems, video content, class forums, and the textbook platform (CNOW2) to learn content. Optional meetings administered via Zoom will be offered weekly to help solidify material and problems. Please refer to the schedule below for these dates.

Fall ECON0710 S01 10189 TTh 2:30-3:50(12) (M. Correia)

Fall ECON0710 S02 10190 MWF 10:00-10:50(14) 'To Be Arranged'

Spr ECON0710 S01 20215 Th 4:00-6:30(17) (M. Correia)

Spr ECON0710 S02 20216 MWF 12:00-12:50(01) 'To Be Arranged'

ECON 1050. Environmental Economics and Policy.

This course considers environmental issues through an economic lens. It is loosely arranged around four questions: why are markets so powerful? Why do markets frequently fail to deliver environmental goods? Can markets be harnessed to deliver environmental goods? If so, why don't we do that? This course was previously listed as ENVS 1350 and ECON 1350; ECON 1350 had ECON 1110 as a prerequisite, and had problem sets and exams requiring calculus. The only prerequisite for this course is ECON 0110. By the end of the course, student will be able to articulate answers to all four questions, and use mathematical models to explore these issues further in depth.

Fall ECON1050 S01 19139 MWF 2:00-2:50(01) (A. Poterack)

ECON 1070. Race, Crime, and Punishment in America.

This new course will use the perspectives of economics to examine the causes and consequences of high levels of incarceration in the United States, especially as it relates to the social disadvantage of African Americans. Quantitative analysis will be used sparingly. Students will be evaluated based on three short writing assignments. Issues examined include: racial disparities in punishment; the impact of crime on communities; policing and race relations in American cities; stereotypes and the economics of crime; the governing of prisons and the limits of punishment.

Fall ECON1070 S01 17618 TTh 1:00-2:20(06) (G. Loury)

ECON 1090. Introduction to Game Theory.

This course offers an introduction to game theory, which studies strategic interactive decision-making. A more detailed (tentative) plan of what we will cover is available as an appendix to this syllabus (see the end of the document). Upon successful completion of the course, students will • Have experienced thinking like an economist (reasoning through models), • Recognize key strategic variables in interactive decision-making, and

gain the ability to communicate them effectively to others, • Understand the tension that exists between individual and collective incentives, and ways to mitigate it, • Appreciate the role of information in strategic thinking, • Better understand behavior in key applications covering business, economics, political science among others, • Master central solution concepts in game theory, with a critical understanding of their meaning and limitation

Fall ECON1090 S01 17619 MWF 10:00-10:50(14) (G. De Clippel)

Spr ECON1090 S01 25953 MW 8:30-9:50(02) (G. De Clippel)

ECON 1110. Intermediate Microeconomics.

Tools for use in microeconomic analysis, with some public policy applications. Theory of consumer demand, theories of the firm, market behavior, welfare economics, and general equilibrium.

Fall ECON1110 S01 10193 TTh 10:30-11:50(13) (T. Mekonnen)

Fall ECON1110 S02 10194 TTh 1:00-2:20(06) (T. Mekonnen)

Fall ECON1110 S03 10195 TTh 2:30-3:50(12) 'To Be Arranged'

Spr ECON1110 S01 20198 MWF 10:00-10:50(03) (A. Poterack)

Spr ECON1110 S02 20199 TTh 10:30-11:50(09) (P. Dal Bo)

Spr ECON1110 S03 20200 TTh 2:30-3:50(11) (P. Dal Bo)

ECON 1130. Intermediate Microeconomics (Mathematical).

Microeconomic theory: Theories of the consumer and firm, competitive equilibrium, factor markets, imperfect competition, game theory, welfare economics, general equilibrium. May not be taken in addition to ECON 1110.

Fall ECON1130 S01 10196 MW 8:30-9:50(09) (R. Vohra)

Spr ECON1130 S01 20201 TTh 1:00-2:20(08) (R. Vohra)

ECON 1200. History of Economic Thought.

This course covers the history of modern (20th century) economics and economic thinking from the marginal revolution through the first half of the 20th century. The aim will be to develop an understanding of the origin and evolution of central concepts in economic theory, including subjective utility, marginal analysis, competitive markets, examine methodological disputes over positivism and formalism, and the development of general competitive equilibrium. We will consider the emergence of certain subfields in modern economics, and end with a discussion of the relevance of these ideas for economics in the 21st century.

Spr ECON1200 S01 25955 Th 4:00-6:30(17) (E. Skarbek)

ECON 1210. Intermediate Macroeconomics.

This course introduces students to various topics in macroeconomics giving an overview of the foundations of the economy. Concepts such as output, consumption, investment, unemployment, inflation, and economic growth will be addressed in this course. The course work emphasizes both the theoretical and practical content of the course material and its connection to various economic issues. Knowledge of macroeconomics prepares students for other courses and is a good general foundation for understanding the economy we live in.

Fall ECON1210 S01 10197 MWF 11:00-11:50(16) (K. Forrester)

Fall ECON1210 S03 10199 MWF 12:00-12:50(15) (F. Duarte)

Spr ECON1210 S01 20202 MWF 12:00-12:50(01) (K. Forrester)

Spr ECON1210 S02 20203 MW 8:30-9:50(02) (A. Gaillard)

Spr ECON1210 S03 20204 MWF 1:00-1:50(06) (A. Gaillard)

ECON 1310. Labor Economics.

Labor supply, human capital, income inequality, discrimination, immigration, unemployment.

Spr ECON1310 S01 25956 TTh 10:30-11:50(09) (K. Chay)

ECON 1350. Environmental Economics and Policy.

This course considers environmental issues through an economic lens. It is loosely arranged around four questions: why are markets so powerful? Why do markets frequently fail to deliver environmental goods? Can markets be harnessed to deliver environmental goods? If so, why don't we do that?

Spr ECON1350 S01 25985 Arranged 'To Be Arranged'

ECON 1355. Environmental Issues in Development Economics.

Examines environmental issues in developing countries, including air and water pollution, land use change, energy use, and the extraction of natural resources. Uses microeconomic models of households and firms, linking

household/firm decision-making on environmental issues to choices in labor, land, and product markets. Develops basic empirical techniques through exercises and a project. For readings, relies exclusively on recent research to illustrate the roles of econometrics and economic theory in confronting problems at the nexus of the environment, poverty, and economic development.

Spr ECON1355 S01 25959 W 3:00-5:30(10) (A. Foster)

ECON 1360. Health Economics.

This course introduces students to the issues, theory and practice of health economics in the US. Topics include the economic determinants of health, the market for medical care, the market for health insurance and the role of the government in health care. Course work includes data analyses using the program STATA.

Fall ECON1360 S01 17620 TTh 2:30-3:50(12) (K. Chay)

ECON 1390. Inequality of Income, Wealth, and Health in the United States.

Inequality of income, wealth, and health, with a focus on the United States. Topics include measurement of inequality, mobility, and poverty; the mapping from individual characteristics to income and wealth; transmission of economic status between generations; the division of national income between capital and labor; factors causing the rise in inequality in the United States since 1980, including technological change and globalization; differential trends in life expectancy, morbidity, and health behaviors among income groups; government policies that impact inequality, including progressive taxation, the minimum wage, support of unionization, public education, and immigration policy; and the political economy of redistributive policies.

Fall ECON1390 S01 17621 TTh 9:00-10:20(05) (D. Weil)

ECON 1410. Urban Economics.

The first part of the course covers the set of conceptual and mathematical models widely used to understand economic activity both between and within cities. The second part of the course examines various urban policy issues including urban transportation, housing, urban poverty, segregation and crime. The course makes extensive use of empirical evidence taken primarily from the United States.

Spr ECON1410 S01 25960 MWF 12:00-12:50(01) (M. Turner)

ECON 1420. Industrial Organization.

A study of industry structure and firm conduct and its economic/antitrust implications. Theoretical and empirical examinations of strategic firm interactions in oligopolistic markets, dominant firm behaviors, and entry deterrence by incumbents. Economics of innovation: research and development activities and government patent policies. Network effects, and why market share critical mass matters for firm survival in certain markets.

Fall ECON1420 S01 17622 TTh 9:00-10:20(05) 'To Be Arranged'

Spr ECON1420 S01 25961 TTh 10:30-11:50(09) 'To Be Arranged'

ECON 1430. The Economics of Social Policy.

This course will cover research topics in the economics of social policy. The course will focus on understanding the context for key social policies in health, education, social welfare and other areas as well as understanding the methods that economists use to generate causal impacts of these policies.

Spr ECON1430 S01 25962 TTh 10:30-11:50(09) (E. Oster)

ECON 1450. Economic Organizations and Economic Systems.

Positive and normative study of the organizations that comprise and the institutional structures that characterize a modern mixed market economy. Theoretical efficiency and potential limitations of private enterprises and markets including (a) why some market actors are organizations (e.g., companies), (b) effort elicitation problems in organizations, (c) the problem of cooperation in traditional versus behavioral economics, and (d) alternative kinds of organization (including proprietorships, corporations, nonprofits, government agencies). Roles of government, and problems of government failure, including the collective action problem of democracy. State-market balance and contemporary controversies over the economic system in light of the 2008 financial crisis.

Fall ECON1450 S01 17623 TTh 10:30-11:50(13) (L. Putterman)

ECON 1480. Public Economics.

What is the appropriate role for government in a market economy? How can public policy help or hinder economic outcomes? How do governments choose what policies to pursue? These are the sorts of questions addressed in Public Economics, which uses the tools of economic theory to analyze a wide range of topics, including taxation, public goods, healthcare policy, zoning, voting behavior, and more.

Fall ECON1480 S01 17624 TTh 9:00-10:20(05) (E. Skarbek)

Spr ECON1480 S01 25963 MWF 2:00-2:50(07) (A. Poterack)

ECON 1487. Translating Evidence into Economic Policy.

The objective of this course is, precisely, to offer those insights to students interested in a career in policymaking by providing case studies of the most important and challenging policy questions of our lifetimes. By the end of the course students will have deepened their understanding of the most important policy challenges from an array of different contexts and the evidence around them, with a special focus on quantitative methods useful to analyze those questions. This class is particularly designed for students that have already studied some of the basic econometric methods, but feel they could get a better understanding of them when looking at them in the context of actual, real-life, policy challenges.

Fall ECON1487 S01 17625 M 3:00-5:30(03) (D. Bahar)

ECON 1490. Theory of Market Design.

How can we use economic theory to better design economic markets? This course studies various theoretical models that help understand important design features in many real-world markets. Topics include market entry, pricing, search, auctions, matching, reputation, and peer-to-peer platform design. We will develop theoretical "case studies" of several real-world markets (egs. eBay, Airbnb, Google advertising, Uber, Tinder, TaskRabbit). Prerequisites: ECON 1110 or ECON 1130. While ECON 1870 is not a prerequisite, you may benefit from familiarity with this course material.

Fall ECON1490 S01 17777 TTh 9:00-10:20(05) (B. Pakzad-Hurson)

Spr ECON1490 S01 25964 TTh 10:30-11:50(09) (B. Pakzad-Hurson)

ECON 1500. Current Global Macroeconomic Challenges.

We will study some of the most important macroeconomic challenges that the world faces today including secular stagnation, inequality, COVID-19, climate change, fiscal sustainability. This course aspires to make you a better economist and a better citizen of the world. We will talk about the "big stuff" that really matters, the economic forces that shape the lives of billions of people – including your own. By the end of the course, you will feel more comfortable evaluating economic policy aimed at tackling complex real-world economic issues that are riddled with tradeoffs and uncertainty.

Spr ECON1500 S01 25965 MWF 2:00-2:50(07) (F. Duarte)

ECON 1530. Health, Hunger and the Household in Developing Countries.

Microeconomic analysis of household behavior in low income societies emphasizing the economic determinants of health and nutrition and the evaluation of policy. The relationship among health, nutrition, fertility, savings, schooling, labor productivity, wage determination, and gender-based inequality. Emphasizes theoretically-based empirical research.

Fall ECON1530 S01 17778 W 3:00-5:30(10) (A. Foster)

ECON 1540. International Trade.

Theory of comparative advantage, trade, and income distribution. Welfare analysis of trade: gains from trade, evaluation of the effects of trade policy instruments-tariffs, quotas, and subsidies. Trade under imperfect competition. Strategic trade policy. Trade, labor markets, preferential trade agreements, and the world trading systems.

Spr ECON1540 S01 25966 MWF 11:00-11:50(04) (K. Forrester)

ECON 1550. International Finance.

The balance of payments; identification and measurement of surpluses and deficits; international monetary standards; the role of gold and paper money; government policies; free versus fixed exchange rates; international capital movements; war and inflation; the International Monetary Fund.

Fall ECON1550 S01 17628 MWF 2:00-2:50(01) (F. Duarte)

ECON 1620. Introduction to Econometrics.

This course introduces the statistical methods used to analyze economic data. Economists often need to test the validity of competing theories and to analyze government and business policies. Econometrics provide them with the necessary tools. The course starts with an exposition of descriptive statistics and essential probability concepts. Then, students will be introduced to statistical inference, estimation and hypothesis testing. The second half of the course will be devoted to regression analysis. Theory will always be illustrated with examples, and emphasis will be placed on the connection between the theory and actual data processing. This practice will be reinforced by computer lectures, where students will go over homework, and familiarize themselves with RStudio, a computer software commonly used by economists for data analysis. This course is a prerequisite for many applied economics courses at Brown and for higher level econometrics

Fall	ECON1620	S01	10200	TTh	9:00-10:20(05)	(B. Knight)
Spr	ECON1620	S01	20205	TTh	1:00-2:20(08)	(S. Kwon)
Spr	ECON1620	S02	20206	TTh	2:30-3:50(11)	(E. Macchi)

ECON 1629. Applied Research Methods for Economists.

This class will cover the basics of applied research in economics. We will cover how we use economic theory to formulate a hypothesis to test and how we use data to test our hypothesis. As part of the coursework, students will be exposed to topics across multiple fields of applied economic research (eg, health, labor, political economy, urban economics, development, etc.) that can be explored in greater detail in more advanced classes. Students will read and discuss papers published in professional journals and perform data analysis.

Fall	ECON1629	S01	10202	TTh	10:30-11:50(13)	(A. Aizer)
Fall	ECON1629	S02	10203	TTh	1:00-2:20(06)	(M. Pecenco)
Spr	ECON1629	S01	20207	MW	8:30-9:50(02)	(L. Lagos)
Spr	ECON1629	S02	20208	TTh	2:30-3:50(11)	'To Be Arranged'

ECON 1630. Mathematical Econometrics I.

Advanced introduction to econometrics with applications in finance and economics. How to formulate and test economic questions of interest. The multivariate linear regression model is treated in detail, including tests of the model's underlying assumptions. Other topics include: asymptotic analysis, instrumental variable estimation, and likelihood analysis. Convergence concepts and matrix algebra are used extensively.

Fall	ECON1630	S01	10239	TTh	2:30-3:50(12)	(A. Norets)
Fall	ECON1630	S02	10240	TTh	1:00-2:20(06)	(T. Kitagawa)
Spr	ECON1630	S01	20209	TTh	9:00-10:20(05)	(A. Norets)

ECON 1670. Advanced Topics in Econometrics.

This class will present advanced topics in Econometrics. The focus will be on cross-sectional methods; the class will start with some basic results needed for any advanced econometrics work, before giving an introduction to asymptotic and identification techniques and concepts, with some applications.

Spr	ECON1670	S01	25968	TTh	2:30-3:50(11)	(A. Norets)

ECON 1710. Investments I.

The function and operation of asset markets; the determinants of the prices of stocks, bonds, options, and futures; the relations between risk, return, and investment management; the capital asset pricing model, normative portfolio management, and market efficiency.

Fall	ECON1710	S01	10242	MWF	11:00-11:50(16)	(S. Kuo)
Fall	ECON1710	S02	10243	MWF	1:00-1:50(08)	(S. Kuo)
Spr	ECON1710	S01	20211	MWF	11:00-11:50(04)	(S. Kuo)
Spr	ECON1710	S02	20212	MWF	1:00-1:50(06)	(S. Kuo)

ECON 1720. Corporate Finance.

A study of theories of decision-making within corporations, with empirical evidence as background. Topics include capital budgeting, risk, securities issuance, capital structure, dividend policy, compensation policy, mergers and acquisitions, leveraged buyouts and corporate restructuring.

Fall	ECON1720	S01	10244	MWF	10:00-10:50(14)	(B. Gibbs)
Spr	ECON1720	S01	20213	MWF	10:00-10:50(03)	(B. Gibbs)

ECON 1730. Venture Capital, Private Equity, and Entrepreneurship.

This course will use a combination of lectures and case discussions to prepare students to make decisions, both as entrepreneurs and venture

capitalists, regarding the financing of rapidly growing firms. The course will focus on the following five areas:

1. Business valuation
2. Financing
3. Venture Capital Industry
4. Employment
5. Exit

Fall	ECON1730	S01	17629	TTh	9:00-10:20(05)	(R. La Porta)

ECON 1750. Investments II.

Individual securities: forwards, futures, options and basic derivatives, pricing conditions. Financial markets: main empirical features, equity premium and risk-free rate puzzles, consumption based asset pricing models, stock market participation, international diversification, and topics in behavioral finance.

Fall	ECON1750	S01	17630	TTh	2:30-3:50(12)	(S. Kwon)

ECON 1760. Financial Institutions.

This course analyzes the role of financial institutions in allocating resources, managing risk, and exerting corporate governance over firms. After studying interest rate determination, the risk and term structure of interest rates, derivatives, and the role of central banks, it takes an international perspective in examining the emergence, operation, and regulation of financial institutions, especially banks.

Fall	ECON1760	S01	17631	MWF	1:00-1:50(08)	(B. Gibbs)

ECON 1770. Crisis Economics.

This course analyzes the economics of financial crises, starting from the preceding run-up and credit market froth, to how crises are initially triggered, amplified, and propagated to the broader macroeconomy. We will devote considerable time to the workings of the financial system, especially financial intermediation and the role of the central bank. The course aims to ground this in economic theory and empirical analyses: as such, many of the readings will be recent journal articles and working papers. By the end of this course, students will be familiar with the systematic forces that drive financial fragility, and the tradeoffs that policy makers face before, during, and after the crises. They will be able to apply the framework to analyze real world scenarios and current events.

Spr	ECON1770	S01	26124	TTh	1:00-2:20(08)	(S. Kwon)

ECON 1805. Economics in the Laboratory.

There is a growing literature on experimental economics, which sheds light on whether the predictions of economic theory materialize in controlled, laboratory settings. We will start by studying the methodology of experimental economics. We then examine a range of classic and more recent topics that have been taken to the laboratory. Topics of interest will include fairness, bargaining, behavior in games and the impact of repeated interactions, rationality of decision-making, and the impact of communication, among others.

Spr	ECON1805	S01	25970	TTh	2:30-3:50(11)	(K. Rozen)

ECON 1820. Theory of Behavioral Economics.

This course provides a formal introduction to behavioral economics, focusing mostly on individual decision making. For different choice domains, we start by analyzing the behavior implied by benchmark models used by economists (e.g. rational choice, expected utility, exponential discounting). Experimental and empirical evidence is then used to highlight some limitations of these models, and to motivate new models that have been introduced to account for these violations. We will cover, for instance, models of limited attention, non-expected utility, and hyperbolic discounting.

Fall	ECON1820	S01	17632	MW	8:30-9:50(09)	(G. De Clippel)

ECON 1830. Behavioral Finance.

Over the past several decades, the field of finance has developed a successful paradigm based on the notions that investors and managers are generally rational and that the prices of securities are generally "efficient." In recent years, however, theoretical and empirical research has shown this paradigm to be insufficient in describing the various features of actual financial markets. In this course we will examine how the insights of behavioral finance complement the traditional paradigm and shed light on the behavior of asset prices, corporate finance, financial crises, and other phenomena.

Spr	ECON1830	S01	25972	TTh	9:00-10:20(05)	(R. La Porta)

ECON 1850. Theory of Economic Growth.

This course explores the origins of wealth and inequality across the globe. It examines: (i) the determinants of the growth process since the emergence of Homo sapiens, (ii) the roots of the dramatic transformation in living standards in the past two centuries, and (iii) the role of deeply rooted geographical, institutional, and cultural characteristics as well as human diversity in the uneven development across the countries and regions. The analysis proposes a resolution for some of the most fundamental mysteries of the journey of humanity: What trapped humankind in poverty for most of human existence? What sparked the massive metamorphosis in living standards over the past two centuries? And what led to the emergence of immense inequality across nations?

Spr ECON1850 S01 25973 TTh 9:00-10:20(05) (O. Galor)

ECON 1870. Game Theory and Applications to Economics.

Study of the elements of the theory of games. Non-cooperative games. Repeated games. Cooperative games. Applications include bargaining and oligopoly theory.

Fall ECON1870 S01 17633 MW 8:30-9:50(09) (R. Serrano)

ECON 1960. Honors Tutorial for Economics Majors.

Students intending to write an honors thesis in economics must register for this class. The goal is to help students with the process of developing and writing their thesis. Particular focus will be on data analysis, identifying appropriate literature and testing hypotheses. Each student must find a thesis advisor with interests related to their topic. Students will plan to enroll in this course in both semesters.

Note this course does not count toward Economics concentration credit.

Fall ECON1960 S01 10245 Arranged 'To Be Arranged'

Spr ECON1960 S01 20214 Arranged 'To Be Arranged'

ECON 1970. Independent Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ECON 2010. Mathematics for Economists.

Techniques of mathematical analysis useful in economic theory and econometrics. Linear algebra, constrained maximization, difference and differential equations, calculus of variations.

Fall ECON2010 S01 17931 MW 10:30-11:50 (A. Poterack)

ECON 2020. Applied Economics Analysis.

This course introduces students to basic concepts in software engineering and scientific computing as preparation for conducting frontier research in all fields of economics. Topics in software engineering will include version control, automation, abstraction, parallel processing, and object-oriented programming. Topics in scientific computing and numerical methods will include programming basics, floating-point arithmetic, numerical differentiation and integration, equation-solving, and numerical optimization. Coding will be in Python and applications will focus on topics likely to arise in economics research. Key concepts will be introduced in interactive lectures and reinforced in in-class group work and at-home assignments.

Spr ECON2020 S01 26106 MW 10:30-11:50 'To Be Arranged'

ECON 2030. Introduction to Econometrics I.

The probabilistic and statistical basis of inference in econometrics.

Fall ECON2030 S01 17932 TTh 9:00-10:20(05) (S. Schennach)

ECON 2040. Econometric Methods.

Applications of mathematical statistics in economics. The nature of economic observations, cross-section and time series analysis, the analysis of variance and regression analysis, problems of estimation.

Spr ECON2040 S01 26107 TTh 10:30-11:50(09) (S. Kwon)

ECON 2050. Microeconomics I.

Decision theory: consumer's and producer's theory; general competitive equilibrium and welfare economics: the Arrow-Debreu-McKenzie model; social choice and implementation.

Fall ECON2050 S01 17933 MW 2:30-3:50 (R. Serrano)

ECON 2060. Microeconomics II.

Economics of imperfect information: expected utility, risk and risk aversion, optimization under uncertainty, moral hazard, and self-selection problems. Economics of imperfect competition: monopoly; price discrimination;

monopolistic competition; market structure in single shot, repeated and stage games; and vertical differentiation.

Spr ECON2060 S01 26108 TTh 1:00-2:20(08) (P. Dal Bo)

ECON 2070. Macroeconomics I.

Consumption and saving, under both certainty and uncertainty; theory of economic growth; real business cycles; investment; and asset pricing.

Fall ECON2070 S01 17934 TTh 10:30-11:50(13) (O. Galor)

ECON 2080. Macroeconomics II.

Money, inflation, economic fluctuations and nominal rigidities, monetary and fiscal policy, investment, unemployment, and search and coordination failure.

Spr ECON2080 S01 26109 MW 1:30-2:50 'To Be Arranged'

ECON 2150. Market Design.

This is a theoretical course in market design, specifically studying the theory and applications of matching. It is designed for students interested in market and mechanism design, and may also be of interest to students interested in utilizing applied theory in their research. The course will begin with an overview of matching markets, but will quickly move to recent advances and open research topics.

Fall ECON2150 S01 17935 W 9:30-11:50 (B. Pakzad-Hurson)

ECON 2190C. Topics in Economic Theory.

This edition of the theory topics course will consist of the presentation of recent papers in different areas of economic theory, including axiomatic treatments of risk and information, modern consumer and revealed-preference theories with connections with bounded rationality, implementation theory and mechanism design, and information and institution design. The course will be targeted to second- and third-year graduate students, with the goal of initiating their own research. The active participation of students will be required.

Spr ECON2190C S01 26110 W 1:00-3:20 (R. Serrano)

ECON 2260. Political Economy I.

This first course in political economy provides theoretical and empirical coverage of the application of economic analysis to political behavior and institutions. This course is designed for students wishing to specialize in political economy but may also be useful for students specializing in related areas, such as development economics and macroeconomics. After starting with a basic overview of candidates and voters, we then turn to specific topics in the areas of electoral systems, legislatures and legislative bargaining, the role of the media, local public finance, and fiscal federalism.

Fall ECON2260 S01 17936 TTh 2:30-3:50(12) (B. Knight)

ECON 2310. Labor Economics.

This course teaches core topics in labor economics including labor supply, labor demand, simple search models, and a series of additional selected topics. The primary focus will be on linking theoretical models to tests in the empirical literature. We will typically cover papers and topics in detail, rather than survey the literature. When required, we also cover tools in applied econometrics.

Fall ECON2310 S01 17937 W 3:00-5:30(10) (M. Pecenco)

ECON 2340. Labor Economics II.

This is the second course in a two-course, graduate-level sequence in labor economics. The course will focus on covering theory and evidence on wage structures, skill demands, inequality, employment and job loss. Particular areas of focus are: (1) wage determination, equalizing wage differentials, and models of discrimination; and (2) the roles played by supply, demand, labor market institutions, and technology in the evolving distribution of earnings.

Spr ECON2340 S01 26111 MW 2:30-3:50 (L. Lagos)

ECON 2380. The Economics of Children and Families.

We will consider the current research in economic behavior related to children, child health, and child economic and social well-being. We begin with the model of human capital development and the technology of skill formation and then proceed to empirical work. Individual topics covered will include: models of human capital and the technology of skill formation, the fetal origins of disease, non-marital and teen fertility, the evolution of gaps in human capital, models of parental investment, pre-school

environments, the impact of income and in-kind transfer programs on child health and well-being, neighborhood influences, adolescent risky behavior.
Fall ECON2380 S01 18966 TTh 1:00-2:20(06) (A. Aizer)

ECON 2390. Applied Econometrics I.

The main focus of this course is on econometrics methods for causal inference, program evaluations, and evidence-based policy design, which has become essential tools for empirical work in economics. This course covers a variety of empirical study designs, and for each design, introduces suitable econometric methods. They include randomized control trials, observational studies with unconfoundedness, instrumental variable methods, regression discontinuity designs, panel data designs and difference-in-differences, empirical welfare maximization methods, etc. The course assumes knowledge of statistics and econometrics at the level of first-year Ph.D econometrics courses such as ECON 2030 and ECON 2040.

Fall ECON2390 S01 17939 TTh 9:00-10:20(05) (T. Kitagawa)

ECON 2400. Applied Econometrics II.

This is the second half of a two-semester graduate-level course on applied econometrics, which builds on core material from econometric theory as well as second-year applied microeconomics field courses. We will focus on the "sensible" application of various econometric methods to empirical problems in economics and policy research, primarily in non-experimental data. By the end of the course, students should have a firm grasp of the research designs and methods that are commonly used to address selection/endogeneity problems in empirical economics and be comfortable working with large-scale data sets. The primary assignment in the course is the production of an original research paper, with an in-class presentation. Other assignments will include a replication exercise and a referee report.

Spr ECON2400 S01 26112 TTh 1:00-2:20(08) (K. Chay)

ECON 2410. Urbanization.

The first part of the course covers social interactions, productivity spillovers, systems of cities models, urban growth, and rural-urban migration. The second part of the course covers topics such as durable housing, land market regulation and exclusion, and local political economy. Besides covering basic theoretical models, emphasis is placed on working through recent empirical papers on both the USA and developing countries. Prerequisites: ECON 2050 and 2060.

Spr ECON2410 S01 26113 MW 9:00-10:20 (M. Turner)

ECON 2450. Exchange Scholar Program.

Fall ECON2450 S01 16557	Arranged	'To Be Arranged'
Fall ECON2450 S02 16558	Arranged	'To Be Arranged'
Fall ECON2450 S03 16559	Arranged	'To Be Arranged'
Spr ECON2450 S01 25221	Arranged	'To Be Arranged'

ECON 2510. Economic Development I.

This course covers issues related to labor, land, and natural resource markets in developing countries, in partial and general equilibrium settings. Topics covered include: The agricultural household model, under complete and incomplete market assumptions; household and individual labor supply, migration, self-employment, and the informal sector; rental market frictions and sharecropping arrangements; and environmental externalities (e.g., pollution, water usage, etc.), and sustainable development. The two development courses (2510 and 2520) may be taken in any order. Students doing development as a major field are expected to complete both.

Fall ECON2510 S01 17940 T 4:00-6:30(07) (E. Macchi)

ECON 2520. Economic Development II.

This course explores questions around history, learning, industry, infrastructure, credit, savings, and behavioral economics in developing societies. It also considers how large, new datasets ("big data") can be used to understand and improve the lives of the poor. The two development courses (2510 and 2520) may be taken in any order. Students doing development as a major field are expected to complete both.

Spr ECON2520 S01 26114 TTh 2:30-3:50(11) (B. Steinberg)

ECON 2600. Bayesian and Structural Econometrics.

This course will cover a number of topics in Bayesian econometrics and estimation of structural dynamic discrete choice models. The Bayesian econometrics part of the course will start with introductory textbook material (Geweke, 2005, Contemporary Bayesian Econometrics and Statistics, denoted by G). A list of 11 topics with corresponding readings is given below. Topics 1-5 will be covered. If time permits, a subset of topics 6-11 determined by interests of the course participants will be covered as well. Readings marked with asterisk * are not required.

Fall ECON2600 S01 17941 TTh 10:30-11:50(13) (A. Norets)

ECON 2630. Econometric Theory.

Standard and generalized linear models, simultaneous equations, maximum likelihood, Bayesian inference, panel data, nonlinear models, asymptotic theory, discrete choice, and limited dependent variable models.

Spr ECON2630 S01 26115 T 9:00-11:20 (S. Schennach)

ECON 2830. Economic Growth and Comparative Development.

This course explores the origins of wealth and inequality across the globe. It examines: (i) the determinants of the growth process since the emergence of Homo sapiens, (ii) the roots of the dramatic transformation in living standards in the past two centuries, and (iii) the role of deeply rooted geographical, institutional, and cultural characteristics as well as human diversity in the uneven development across the countries and regions. The analysis proposes a resolution for some of the most fundamental mysteries of the journey of humanity: What trapped humankind in poverty for most of human existence? What sparked the massive metamorphosis in living standards over the past two centuries? And what led to the emergence of immense inequality across nations?

Fall ECON2830 S01 17943 F 9:30-11:50 (O. Galor)

ECON 2840. Empirical Analysis of Economic Growth.

Examines economic growth, focusing on the effects of technological change, fertility, income inequality, and government policy.

Spr ECON2840 S01 26117 MW 10:30-11:50 (D. Weil)

ECON 2930. Workshop in Applied Economics.

No description available.

Fall ECON2930 S01 18501 Th 4:00-5:30 'To Be Arranged'

Spr ECON2930 S01 26500 Th 4:00-5:30 'To Be Arranged'

ECON 2950. Workshop in Econometrics.

No description available.

Fall ECON2950 S01 18502 T 4:00-5:30 'To Be Arranged'

Spr ECON2950 S01 26501 T 4:00-5:30 'To Be Arranged'

ECON 2960. Workshop in Macroeconomics and Related Topics.

No description available.

Fall ECON2960 S01 18503 W 4:00-5:30 'To Be Arranged'

Spr ECON2960 S01 26502 W 4:00-5:30 'To Be Arranged'

ECON 2970. Workshop in Economic Theory.

No description available.

Fall ECON2970 S01 18504 M 12:00-1:15 'To Be Arranged'

Spr ECON2970 S01 26503 M 12:00-1:15 'To Be Arranged'

ECON 2980. Reading and Research.

Individual research projects. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ECON 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall ECON2990 S01 16560 Arranged 'To Be Arranged'

Spr ECON2990 S01 25222 Arranged 'To Be Arranged'

Education

EDUC 0300. Introduction to Education and Society: Foundations of Opportunity and Inequality.

This course examines the purpose, structure, and challenges of the American educational system as well as the experiences of the diverse learners and teachers within the system. It also explores how educational institutions have served to create social mobility and opportunity, but also

to perpetuate inequality across race, class, gender, and other axes of difference. The course requires no prior knowledge.

Fall EDUC0300 S01 17188 MWF 10:00-10:50(14) (J. Papay)

EDUC 0425. The Power of Translanguaging: Sustaining Multilingualism in Schools.

This seminar course will first investigate the theoretical foundations of translanguaging practices and policy implications for translanguaging pedagogies. Then students will learn how to design culturally-responsive mini-curriculum units with strategies and resources to support translanguaging. Students will reflect on their own language practices and experiences as monolingual, bilingual, or multilingual individuals within their communities and will research connections to US schooling. We will consider translanguaging from a teaching and advocacy lens for multilingual learners and build translanguaging curriculum units that will be made accessible to teachers who work with culturally and linguistically diverse students in local schools. Proficiency in a language other than English is not a requirement; however, bilingual students and/or students studying foreign languages who would like to support our local multilingual educational community are especially encouraged to enroll in this course.

Fall EDUC0425 S01 18842 M 3:00-5:30(03) (T. Kelly)

EDUC 0515. Teaching LGBTQIA History.

What could a high school U.S. history class look, sound, and feel like when taught through the experiences of LGBTQIA people and communities? Students will answer this question by engaging with the theories and practices of teaching LGBTQIA history in secondary social studies and humanities classrooms. Students will be trained in curriculum design, culturally relevant pedagogies, and LGBTQIA history. Students will then create their own unit plans on a topic in LGBTQIA history that could be taught to local Providence high school students. Those interested in the humanities, teaching, and American LGBTQIA history should take this class.

Fall EDUC0515 S01 19156 W 3:00-5:30(10) (J. Palella)

Spr EDUC0515 S01 25596 TTh 2:30-3:50(11) (J. Palella)

EDUC 0520. Adolescent Literature.

This introductory seminar presents an overview of the historical, socio-cultural, academic, and political issues that provide context for the use and availability of adolescent literature today. Ideas that figure prominently in the course are: connections between reading and democracy and decolonizing the school curriculum. Particular attention focuses on reading engagement for adolescents, the availability of "own voices" texts, access to literacy and fluency through adolescent literature, and issues of censorship in American public school classrooms and libraries. Students in this course will develop an understanding of the place of adolescent literature in today's curriculum debates as well as a background in choosing, reading, and analyzing the literature itself. Students design curriculum for new texts. Assignments include short weekly assignments, discussion board posts, multimedia assignments, curriculum development projects, and final paper and exhibition.

Fall EDUC0520 S01 17192 MWF 2:00-2:50(01) (L. Snyder)

EDUC 0560. Cultivating STEM Identities: Teaching for Equity in the Math and Science Classrooms.

This course will explore how educational experiences and beliefs about identity and power influence how we learn and teach mathematics and science. We will examine equitable, culturally responsive and sustaining teaching practices in secondary mathematics and science classrooms and how these can be utilized to cultivate students' STEM identities. You will have an opportunity to tutor in a STEM classroom, develop and teach a lesson in our class and create a unit plan that could be implemented in a variety of contexts. This course is designed to help you gain a greater understanding of the complexities that surround teaching and learning mathematics and science in the United States.

Fall EDUC0560 S01 17193 Th 4:00-6:30(04) (I. Gil)

EDUC 0610. Brown v. Board of Education and the History of School Desegregation.

Using primary and secondary sources in history, education, and law this course will explore the landmark Supreme Court case of Brown v. Board of Education which ruled school segregation was unconstitutional and the legal and policy efforts to desegregate schools and promote educational equity that followed it. We will consider the meaning, successes, and

failures of school integration, the legacy of Brown for education, and consider the meaning of "equal educational" opportunity in the past and present.

Spr EDUC0610 S01 25600 M 3:00-5:30(13) (T. Steffes)

EDUC 0750. Evidence and Method in Education Research.

Understanding evidence is critical to engaging as citizens and leaders the 21st century. This is particularly true in education research, policy, and practice. Recent years have seen an explosion of empirical education research, requirements that policies be evidence-based, and rapid expansion of the use of evidence in school settings. This course will introduce students to a range of methods used to generate evidence in education. It is a required course in the Education concentration.

Fall EDUC0750 S01 17189 TTh 10:30-11:50(13) (E. Qazilbash)

EDUC 0800. Introduction to Human Development and Education.

Introduces students to the study of human development and education from infancy through young adulthood. This course provides a broad overview of scientific and theoretical understanding of how children develop and how research is generated in the field. Major topics include biological foundations, cognition, language, emotion, social skills, and moral understanding based on developmental theories and empirical research. We will attend to variations in cultural, ethnic, gender, socioeconomic, and other forms of human diversity in social contexts (e.g., family and schools) and how the person-context fit may influence children's developmental trajectories. The course also covers educational contexts, processes, and outcomes.

Fall EDUC0800 S01 17195 MWF 1:00-1:50(08) (J. Li)

EDUC 0820. Politics and Public Education.

Who exercises power in public education? This course examines the key institutions (e.g. school districts, states, Congress, and the courts) and actors (e.g. parents, teachers, interest groups, and the general public) shaping American K-12 education in order to understand recent policy trends and their consequences for students. Major policies discussed include school finance, textbook adoption, school accountability, and school choice. Particular attention is given to the federal No Child Left Behind Act of 2001 and debates over its reauthorization. Previous coursework in American politics or public policy is suggested but not required.

Fall EDUC0820 S01 17194 MWF 12:00-12:50(15) 'To Be Arranged'

EDUC 0870. Perspectives on Multilingual Learners in US Schools.

Students in Rhode Island's public schools report speaking over 100 different languages and, in our urban core public schools, nearly 30% of students are designated as Multilingual Learners (MLLs). How are their languages integrated into school? This course investigates how school programs, pedagogies, and practices can either build upon or limit home languages that are inherently present in the classroom. By focusing on the experiences of MLLs in Rhode Island and the broader US public school system, we will consider these essential questions: Who are MLLs? How do historical milestones, federal laws, state policies, and pedagogical practices affect their experiences in school? What are current promising practices for MLLs? What are perspectives of students, families, educators, and policymakers concerning challenges and opportunities for Multilingual Learners?

Spr EDUC0870 S01 25599 TTh 1:00-2:20(08) (T. Kelly)

EDUC 1190. Family Engagement in Education.

How do families from diverse backgrounds support their children's schooling? What does research tell us about how families influence their children's development and educational processes? Students in this course will examine theories and research findings related to family engagement in education drawing from various social science studies. The course offers an in-depth look at focal topics across diverse groups, such as parental beliefs and practices, family processes in sociocultural contexts, immigrant families, and elements and programs that promote family-school partnerships. This course involves students' fieldwork and engagement in the community.

Fall EDUC1190 S01 17196 T 4:00-6:30(07) (Y. Yamamoto)

EDUC 1220. The History of American Education.

This course is an introduction to the history of American education with an emphasis on K-12 public schooling. Using primary and secondary sources,

we will explore the development of public schools and school systems, debates over aims and curriculum, conflicts over school governance and funding, and struggles for equity and inclusion over time. We will analyze the relationship between schooling, capitalism, and democracy. Finally, in exploring how different generations have defined and tried to solve educational dilemmas, we'll consider how this history might help us approach education today.

Fall EDUC1220 S01 19150 TTh 2:30-3:50(12) (T. Steffes)

EDUC 1230. Applied Statistics for Ed Research and Policy Analysis.

This course provides an accelerated introduction to applied statistics for conducting quantitative research in the social sciences, with a focus on education policy. Students will become acquainted with the fundamentals of probability, statistical inference, data visualization, and multivariate regression. Concepts and methods are taught using real-world examples with multiple opportunities for students to apply these methods in practice. The course uses the statistical software program, STATA.

Spr EDUC1230 S01 25601 MWF 11:00-11:50(04) (P. De Galbert)

EDUC 1240. Using Qualitative Research Methods.

Designed for sophomores or juniors concentrating in education studies, but also open to other undergraduates interested in qualitative research methods. Through readings, class exercises and discussions, and written assignments, examines issues related to the nature of the qualitative research methods that are commonly used in education, psychology, anthropology, and sociology.

Spr EDUC1240 S01 25602 TTh 10:30-11:50(09) (I. Gil)

EDUC 1310. Inside Higher Ed: Sex, Class, and Admissions.

This course introduces students to the sociological study of higher education in the United States. In this seminar, our primary focus will be to engage with the current debates, issues, and problems associated with higher education. Among the questions we will explore are: What is hook-up culture, and can you "opt-out"? What is the purpose of higher education, and how does our background impact how we answer this question? Who are the biggest beneficiaries of affirmative action? Are legacy students and athletes advantaged in the admissions process? Which students are most likely to participate in class discussion? And how does gender matter for who does and does not participate? Who is best served by higher education institutions?

This class is not just about reading research. You will be required to actively discuss and reflect on your collegiate experiences with your classmates.

Fall EDUC1310 S01 17197 TTh 9:00-10:20(05) (D. Rangel)

EDUC 1645. Moral Development and Education.

This course focuses on the acquisition of moral values within the home, school, and peer groups. We will examine contending approaches to moral development and its fostering. Topics include the philosophical underpinnings of moral theory, the cognitive and behavioral dynamics of moral growth, the values climate of contemporary American society, and the role of education in the moral development of children. We will also consider cultural, ethnic, and gender differences. Prerequisite of one of the following courses: EDUC0300, EDUC0400, EDUC0620, EDUC0800, EDUC0850, EDUC0880, EDUC1289, EDUC1660, EDUC1670, EDUC1675, CLPS0610, CLPS0620, or equivalent. Enrollment is limited to 20 students.

Fall EDUC1645 S01 17435 M 3:00-5:30(03) (J. Li)

EDUC 1655. Human Development and Education in East Asia.

This course examines human development and education in East Asia, mainly China, Japan, and South Korea, using comparative and sociocultural perspectives. Topics include cultural beliefs and practices related to learning; school and students' educational experiences; academic and socioemotional development; family socialization; globalization and educational systems. Students will also examine diversity, inequality, and marginalization in educational processes across and within these countries. The course draws on a range of contemporary studies from interdisciplinary social science fields, such as psychology, sociology, and anthropology.

Spr EDUC1655 S01 25603 T 4:00-6:30(16) (Y. Yamamoto)

EDUC 1675. The Psychology of Teaching and Learning.

This seminar course surveys and critically appraises foundational theories of teaching and learning. As we learn about various theories and the theorists behind them, we consider their effect on our construction of students' learning and teachers' practice. Through reading research in educational psychology and other disciplines, we will examine topics such as learning- and teaching-related beliefs and behaviors, cognitive and socioemotional processes, and motivation that can be applied to teaching approaches and classroom environments. Special attention will be given to sociocultural contexts that affect learning processes and experiences of diverse students. In doing so, we see how these theoretical paradigms are refined with respect to difference, diversity, and intersectionality.

Spr EDUC1675 S01 25593 M 3:00-5:30(13) (K. Rieser)

EDUC 1765. Education Policy and Program Evaluations in Low- and Middle-Income Countries.

While tremendous progress has been made around the world toward universal access to primary school in low- and middle-income countries, student learning and progress in secondary school remains an important challenge for many countries.

In the last two decades, governments have implemented many education policies and programs incorporating evaluations using novel methods to estimate their causal impact. Findings have improved our understanding of the effect and cost-effectiveness of a wide range of programs and greatly influenced policy. This course will explore the evidence available, question the theories that motivated the programs, ethics related to evaluation, and the lessons learned.

This course is a seminar and designed for students interested in international education policy and development economics. We will explore education policies around the world, but the main geographical focus will be on countries classified as low- or middle-income. Students should have completed an introductory data and research methods course equivalent to EDUC 0750.

Spr EDUC1765 S01 25604 W 3:00-5:30(10) (P. De Galbert)

EDUC 1900. Senior Seminar.

Required of and reserved for seniors of the Education Studies Concentration as a culminating experience of your Concentration. Our foundational and methodological courses introduced you to the basic themes and research in the field, and upper-level courses typically focused on particular topics in greater depth. Your decision to be an Education Studies concentrator was likely related to one or more of the central themes of the field of education (e.g., human development, education policy and history, culture, race/ethnicity, gender, social justice, etc.). We hope to build on these learning experiences, broadening and deepening your learning across different areas of education.

Fall EDUC1900 S01 17190 MWF 11:00-11:50(16) (D. Silva Pimentel)

EDUC 1970. Independent Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EDUC 1990. Independent Reading and Research.

Supervised reading and/or research for education concentrators who are preparing an honors thesis. Written permission from the honors advisor required. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EDUC 1991. Independent Reading and Research.

Supervised reading and/or research for education concentrators who are preparing an honors thesis. Written permission from the honors advisor required. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EDUC 2350. Economic Analysis and Urban Education Policy.

This course introduces students to the main economic theories and related applied work that inform education policy analysis by combining economic theory, econometric studies, and education and institutional literature in an examination of current issues in U.S. education, particularly those issues that are most relevant to urban education. We begin by examining key concepts and theories from microeconomics, labor economics, and public economics that are most relevant for studying questions in education. After laying this theoretical foundation, we examine how these theories can illuminate and aid policy analysis around key topics in U.S. education. Open to graduate students only.

Spr EDUC2350 S01 25605 Th 4:00-6:30(17) (M. Kraft)

EDUC 2360. Policy Analysis and Program Evaluation for Education.

Informed education policymaking requires reliable information about the causal effects of government programs and other factors shaping educational outcomes. This course offers an overview of education policy analysis with an emphasis on econometric strategies for measuring program impacts. It aims to make students critical consumers of policy evaluations and to equip them with tools to conduct their own research. Topics covered include the political context for policy research, social experiments, alternative strategies for making causal inferences, and cost-benefit analysis. Prerequisites: EDUC 1110, POLS 1600, SOC 1100, or written permission of the instructor.

Fall EDUC2360 S01 17201 Th 4:00-6:30(04) (P. De Galbert)

EDUC 2367. Strategic Management of School Organizations.

This course will develop a range of professional, leadership, and management skills, build knowledge and understanding about how organizations work, and offer a place for critical reflection about the internship experience. It will employ case studies of organizations and reforms and draw from the experience of practitioners from the field.

Fall EDUC2367 S01 17202 T 4:00-6:30(07) (E. Qazilbash)

EDUC 2380. UEP Internship Seminar.

Students in the Urban Education Policy master's program participate in year-long internships in organizations that focus on urban education policy. Each student works with his or her site supervisor to develop a job description for the internship that allows the student to learn from and contribute to the work of the host organization. This corresponding seminar will explore identity in leadership and study what leadership practices, skills, competencies and dispositions are required to succeed at social change work, both at the internship site and in educational organizations where students may work in after Brown.

Spr EDUC2380 S01 25607 W 4:00-6:30 (E. Qazilbash)

EDUC 2385. Education Inequality and Community Assets: Contexts and Change.

Designed for graduate students in the Urban Education Policy A.M. and the Master of Arts in Teaching programs, this course focuses on understanding the dynamic social, cultural, and community conditions shaping America's diverse classrooms. We do so through reading and engaging in anthropological and sociological scholarship on issues like immigrant students, hidden scripts of gender and sexuality in secondary schools, social class and tracking, and ethno-racial discrepancies in discipline. By reading works focused on close observation of students, teachers, and families, students will learn to identify, describe, and evaluate how socio-cultural and socio-economic factors impact learning, student outcomes, and teaching.

Fall EDUC2385 S01 17204 M 4:00-6:30 (K. Rieser)

EDUC 2390. Race and Democracy in Urban Education Policy.

This course will provide a broad introduction to contemporary education policy centered on issues of race/ethnicity and ideas of democracy. Students will begin by engaging theories of democracy and theories of race. The course will then transition to analyzing major education policy debates such as: school desegregation, school finance, teacher evaluation, curriculum development standards, accountability, educator policies (collective bargaining, certification), special education, and the current policy landscape. The course will include final group projects where students apply the theoretical concepts to strategies for school reform, with the neighboring school districts as cases.

Spr EDUC2390 S01 25608 M 4:00-6:30 'To Be Arranged'

EDUC 2450. Exchange Scholar Program.

EDUC 2515. Learning Theory and Special Populations.

This course will provide MAT students with an understanding of factors and responsibilities as you work collaboratively with students, professionals, and parents to establish appropriate educational supports student success and achievement. We will explore the various categories of human exceptionality and their variations; review the main laws and policies that inform your work with exceptional students; study Individualized Education Programs and 504 plans and their implications for instruction; study the Universal Design for Learning (UDL) framework for differentiation; discuss different models for collaborations with school

professionals and parents; and access research and resources that support your work with these students.

Fall EDUC2515 S01 17205 W 3:00-5:30(10) (D. Silva Pimentel)

EDUC 2520A. Educational Theory and Practice in Teaching English II.

This course is designed to accompany MAT students' one-semester fall practicum teaching placement. This field-based course uses the Rhode Island Professional Teaching Standards and the aligned rubric of Danielson's Framework for Teaching as a guiding standard as well as a central assessment mechanism. ETP II integrates theory and practice with standards-based instruction for the culturally relevant classroom. Students will bring their experiences and questions about teaching and learning directly from teaching and/or observations at field sites so the class can address those questions using discussion, research and inquiry. Artifacts of instruction, practice, and assessment will be examined and analyzed.

Fall EDUC2520A S01 17208 Th 12:30-2:20 (L. Snyder)

EDUC 2520B. Educational Theory and Practice in Teaching Social Studies II.

This course provides opportunities for social studies MAT students to meet the Rhode Island Professional Teacher Standards (RIPTS) and the National Council of the Social Studies Preservice teacher standards. In this particular semester, the objectives are to be able to develop standards-based lesson plans and activities for your students that are culturally responsive in social studies based on your knowledge of students and how they learn; use an evaluation framework to distinguish curriculum quality; and successfully revise curriculum as necessary in order to align with the RI GSEs and meet the needs of your students in a culturally responsive way.

Fall EDUC2520B S01 18984 Th 12:30-2:20 (J. Palella)

EDUC 2520C. Educational Theory and Practice for Science II.

This course provides opportunities for science MATs to meet the Rhode Island Professional Teacher Standards (RIPTS) and the National Science Teacher Association Preservice science teacher standards. In this particular semester, the objectives are to be able to develop standards-based lesson plans and activities for your students that are culturally responsive in science based on your knowledge of students and how they learn; use an evaluation framework to distinguish curriculum quality; and successfully revise curriculum as necessary in order to meet the needs of your students in a culturally responsive way.

Fall EDUC2520C S01 18981 Th 12:30-2:20 (D. Silva Pimentel)

EDUC 2520D. Educational Theory and Practice in Teaching Mathematics II.

This course is designed to provide a space for math MAT candidates in their fall placement to develop their pedagogical content knowledge of culturally responsive teaching as it pertains specifically to teaching mathematics in middle and high school levels. Continuing from our summer work, this course delves more deeply into thinking about what it means to be culturally responsive in particular aspects of curriculum and instruction: CCSS math standards, how students learn, approaches to student-centered mathematics instruction, and choosing and revising curriculum materials. Students will explore what it means to be culturally responsive in each of these areas.

Fall EDUC2520D S01 18985 Th 12:30-2:20 (I. Gil)

EDUC 2525. Instructional Design, Planning, and Integrating Technology.

In this course, students enrolled in the MAT program will build on the knowledge of instructional design that they developed in the summer. MAT candidates will delve more deeply into the Universal by Design (UbD) design process and consider its relationship to the Sheltered Instruction Observation Protocol (SIOP) Model. Additionally, students will work with the Technology, Pedagogy and Content Knowledge (TPACK) Model which will support their ability to deliberately integrate developmentally appropriate technology into their plans in order to positively impact student learning.

Fall EDUC2525 S01 17207 T 12:30-2:20 (L. Snyder)

EDUC 2530A. Educational Theory and Practice III: English.

This course is designed to accompany the English MAT spring semester student teaching placement, with an aim to connect research with an experience, workshop, or record of practice to help students understand,

implement, question and revise the practice in their own classrooms. Particular areas of focus include independent teaching in the linguistically and culturally diverse high school English classroom; practices for setting up the heterogeneous high school English classroom; classroom management; diagnostic assessment of student learning; understanding your position as a teacher and the context of your school; creating a professional learning community; and methods of teaching English with technology.

Spr EDUC2530AS01 25981 W 4:00-6:00 (L. Snyder)

EDUC 2530B. Educational Theory and Practice in Teaching Social Studies III.

This course is a continuation of Educational Theory and Practice 1 and 2, designed to provide a space for social studies MAT candidates in their spring student teaching placement to develop their pedagogical content knowledge of culturally responsive teaching as it pertains specifically to teaching social studies in middle and high school levels. Building on the work we did in the summer and the fall, this course delves more deeply into thinking about what it means to be culturally responsive in particular aspects of curriculum and instruction.

Spr EDUC2530ES01 25982 W 4:00-6:00 (J. Palella)

EDUC 2530C. Educational Theory and Practice in Teaching Science III.

This course for science MAT candidates is a continuation of Educational Theory and Practice 1 and 2. It is designed to provide a space for candidates in their spring student teaching placement to develop their pedagogical content knowledge of culturally responsive teaching as it pertains specifically to teaching science in middle and high school levels. Continuing from the work done in the summer and the fall, this course delves more deeply into thinking about what it means to be culturally responsive in developing science assessments and in approaching discourse, modeling and mathematical representations.

Spr EDUC2530CS01 25611 W 4:00-6:00 (D. Silva Pimentel)

EDUC 2530D. Educational Theory and Practice in Teaching Mathematics III.

This course is a continuation of Educational Theory and Practice 1 and 2. It is designed to provide a space for math MAT candidates in their spring student teaching placement to develop their pedagogical content knowledge of culturally responsive teaching as it pertains specifically to teaching mathematics in middle and high school levels. Continuing from the work we did in the summer and the fall, this course delves more deeply into thinking about what it means to be culturally responsive in curriculum and instruction, particularly in approaches to discourse, assessment, and interdisciplinary connections.

Spr EDUC2530DS01 25612 W 4:00-6:00 (I. Gil)

EDUC 2535. Teaching Literacy and Language to Emerging Bilinguals Across the Disciplines I.

This half of a year-long course prepares preservice teachers in the MAT program to teach emerging bilingual students/English learners through sheltered instruction in the mainstream classroom and meet students' linguistic, academic, and socio-emotional needs. New teachers must learn how to understand and include the experiences of linguistically diverse and multilingual students in their teaching. Additionally, preservice teachers must learn the nature of language acquisition and how specialized instruction can support this development. Through analysis of case studies, participants will also learn to plan and deliver high quality instruction that is differentiated to meet the needs of English learners.

Fall EDUC2535 S01 17206 W 3:00-5:30(10) (T. Kelly)

EDUC 2545. Teaching Literacy and Language to Emerging Bilinguals Across the Disciplines II.

This second half of a year-long course prepares preservice teachers in the MAT program to teach emerging bilingual students/English learners through sheltered instruction in the mainstream classroom and meet students' linguistic, academic, and socio-emotional needs. New teachers must learn how to understand and include the experiences of linguistically diverse and multilingual students in their teaching. Additionally, preservice teachers must learn the nature of language acquisition and how specialized instruction can support this development. Through analysis of case studies, participants will also learn to plan and deliver high quality instruction that is differentiated to meet the needs of English learners.

Spr EDUC2545 S01 25613 Th 4:00-5:30 (T. Kelly)

EDUC 2555. Assessment and Using Data to Support Student Learning.

This course will provide a space for enrolled MAT degree candidates to learn theories related to assessment that are closely tied to their student teaching practical experience and also establish effective ways to measure their impact on student learning. The course will prepare students to explain concepts related to assessment; design formative and summative assessment systems through the UDL Framework; analyze the results of assessment tasks/data and utilize them to inform instructional decisions; and evaluate current and future trends in educational assessment.

Spr EDUC2555 S01 25614 M 4:00-5:20 (I. Gil)

EDUC 2565. Practicum and Seminar I.

This clinical experience and seminar, held off-campus at student teaching sites, provides the practical component of the MAT fall semester that will allow MAT students to merge theory and practice. The main goals for this semester are for practicum students to familiarize themselves with their school context, students and community; develop an understanding of how school context and learning about students inform planning curriculum; be aware of the policies and initiatives you are responsible for in the role of a teacher; form professional relationships with your colleagues, students, and families; and begin instructing in a co-teaching model.

Fall EDUC2565 S01 17212 Arranged (K. Rieser)

Fall EDUC2565 S02 17213 Arranged (K. Rieser)

Fall EDUC2565 S03 17214 Arranged (K. Rieser)

Fall EDUC2565 S04 17215 Arranged (K. Rieser)

EDUC 2575. Student Teaching and Seminar.

This off-campus student teaching clinical experience and seminar, held at student teaching sites, provides the practical component of MAT students' winter and spring semester that will allow students to merge theory and practice and gain proficiency in the domains outlined by the Framework for Teachers. This will be accomplished by taking on the full responsibilities of a teacher for selected secondary classes in your placement school with the guidance of your mentor teacher and your supervisor as well as attending meetings and other programs teachers are required to attend for your placement site.

Spr EDUC2575 S01 25615 Arranged (K. Rieser)

Spr EDUC2575 S02 25616 Arranged (K. Rieser)

Spr EDUC2575 S03 25617 Arranged (K. Rieser)

Spr EDUC2575 S04 25618 Arranged (K. Rieser)

EDUC 2980. Studies in Education.

Independent study; must be arranged in advance. Section numbers vary by instructor. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EDUC 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall EDUC2990 S01 16561 Arranged 'To Be Arranged'

Spr EDUC2990 S01 25223 Arranged 'To Be Arranged'

Egyptology and Assyriology

ASYR 1000. Introduction to Akkadian.

An intensive introduction to the cuneiform writing system and the basic grammar and vocabulary of Akkadian, a language first attested over four thousand years ago in Mesopotamia (modern Iraq). The earliest known member of the Semitic family of languages (like Arabic and Hebrew), Akkadian was in use for over two thousand years across a wide expanse of the ancient Near East. Students will learn the classical Old Babylonian dialect of Akkadian (ca. 1800 BCE) and read Mesopotamian texts in the original, including selections from the Laws of Hammurabi, as well as excerpts from myths, hymns, prayers, historical documents, and letters.

Fall ASYR1000 S01 18260 MWF 10:00-10:50(14) 'To Be Arranged'

ASYR 1900. Introduction to Hittite Language and Literature.

This course is an introduction to Hittite language, literature, and culture. Hittite, the earliest attested Indo-European language (thus related to

Greek, Latin, and Sanskrit) was used in Anatolia during the second millennium BCE. It survives in tens of thousands of tablets written in cuneiform script. Students will learn the basic grammar of the language and read in the original or in translation specimens from the fascinating textual legacy of the Hittites, which includes myths, prayers, laws, diplomatic texts as well as formal and informal letters. They will also become familiar with the cultural environment in which those texts were composed.

Fall	ASyr1900	S01	18263	TTh	2:30-3:50(12)	(F. Rojas Silva)

ASyr 1990. Individual Study Project.

Directed reading and research arranged with individual faculty. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ASyr 2920. Hittite Historical Texts.

This course offers focused study of the most significant Hittite historical texts from the second millennium BCE. Readings will come for the major genres of Hittite history-writing, and students will hone their translation skills, query modes of historical thinking in Anatolia, and work to contextualize the ancient texts. Knowledge of Hittite cuneiform required. Intended primarily for graduate students.

Fall	ASyr2920	S01	19001	Arranged	(F. Rojas Silva)

ASyr 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ASyr 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	ASyr2990	S01	16537	Arranged	'To Be Arranged'
Spr	ASyr2990	S01	25204	Arranged	'To Be Arranged'

ASyr XLIST. Courses of Interest to Concentrators in Egyptology and Assyriology.

Egyptology

EGYT 1310. Introduction to Classical Hieroglyphic Egyptian Writing and Language (Middle Egyptian I).

Learn how to read ancient Egyptian hieroglyphs! The classical language of ancient Egypt, Middle Egyptian was spoken ca. 2000–1600 BCE and remained an important written language for the rest of ancient Egyptian history. Students will learn the hieroglyphic writing system, vocabulary, and grammar of one of the oldest known languages and read excerpts from stories, royal monuments, tomb inscriptions, and amulets. By the end of this course, students will be able to decipher textual portions of many monuments and objects in museums. This course may also be taken on its own, and it also serves as the first of a two-semester sequence. No prerequisites.

Fall	EGYT1310	S01	10076	MWF	11:00-11:50(16)	(C. Alvarez)

EGYT 1910. Senior Seminar.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EGYT 1920. Senior Seminar.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EGYT 1990. Individual Study Project.

Directed reading and research arranged with individual faculty. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EGYT 2300. Readings in Ancient Egyptian.

Advanced readings in ancient Egyptian texts in the original script and language. Readings will be selected from a particular genre, historical period, or site. This course is intended primarily for graduate students and may be repeated for credit. A reading knowledge of ancient Egyptian is required. A reading knowledge of both German and French is strongly recommended but not required.

Fall	EGYT2300	S02	18269	W	3:00-5:30(10)	(C. Alvarez)

EGYT 2450. Exchange Scholar Program.

Spr	EGYT2450	S01	25225	Arranged	'To Be Arranged'

EGYT 2610. Introduction to Demotic.

Begins with discussions and exercises in the grammar and peculiar script of this late stage of the Egyptian language, followed by readings of actual ancient texts, including *The Instructions of Onkhsheshonkhy*, *The Petition of Petiese*, and *The Story of Setne Khaemwas*. Knowledge of Demotic remains essential for a proper understanding of Egypt during the Saite, Persian, Ptolemaic, and Roman periods. Open to undergraduates with consent of instructor. Prerequisites: EGYT 2410 or 2210.

Fall	EGYT2610	S01	18264	MWF	2:00-2:50(01)	'To Be Arranged'

EGYT 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	EGYT2970	S01	16563	Arranged	'To Be Arranged'
Spr	EGYT2970	S01	25226	Arranged	'To Be Arranged'

EGYT 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

EGYT 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	EGYT2990	S01	16564	Arranged	'To Be Arranged'
Spr	EGYT2990	S01	25227	Arranged	'To Be Arranged'

EGYT XLIST. Courses of Interest to Concentrators in Egyptology and Assyriology.

Engineering

ENGN 0010. Introduction to Engineering: Design, Materials, and Structures.

The purpose of the course is to introduce students to the profession of engineering and the important role engineers play in society, as well as to provide a foundation for further study in engineering. The course begins with the consideration of engineering design and introduces a number of tools that are fundamental to engineering. These include vectors, computer aided design (CAD), and basic programming (Matlab). Particular attention is then focused on mechanics of materials and the analysis of static structures, but topics also include professional ethics and the social responsibility of engineers. Led by an undergraduate mentor/TA, students will complete three group design projects over the course of the semester related to the core course content. ENGN 0010 should be taken by students considering concentrating in engineering as well as students just curious about engineering and design.

Fall	ENGN0010	S01	18258	Arranged	(K. Haberstroh)

ENGN 0020. Transforming Society-Technology and Choices for the Future.

This course will address the impact that technology has on society, the central role of technology on many political issues, and the need for all educated individuals to understand basic technology and reach an informed opinion on a particular topic of national or international interest. The course will begin with a brief history of technology.

Spr	ENGN0020	S01	25449	MWF	11:00-11:50(04)	(J. Harry)

ENGN 0030. Introduction to Engineering.

ENGN 0030 introduces students to the engineering profession and the important role engineers play in society. It provides the foundation for further study in engineering. The course begins with engineering design, followed by the analysis of static structures. Topics also include CAD, basic Matlab programming, professional ethics, and social responsibility. Led by an undergraduate mentor, students complete group design modules, which require an additional two hours of meeting time per week. We highly recommend that students have taken MATH 0100 or higher at Brown, or have completed the equivalent of AB calculus or higher in high school.

Fall	ENGN0030	S01	17927	MWF	9:00-9:50(09)	(D. Mittleman)

Fall	ENGN0030	S02	18723	MWF	9:00-9:50(09)	(Y. Qi)

Fall	ENGN0030	S03	18724	MWF	9:00-9:50(09)	(M. Gray)

Fall	ENGN0030	S04	18725	MWF	9:00-9:50(09)	(F. Goldsmith)

ENGN 0032. Introduction to Engineering: Design.

This course is an introduction to the engineering profession with an emphasis on design. It is a project-based class which consists of three major design projects. Working in small groups, students leverage the design process and engineering discipline to present solutions to three design briefs. In weekly studio sessions, students will learn different tools (e.g., Matlab) associated with engineering and design. ENGN 0032 provides the foundation for further study in engineering. This class is designed for students who have a strong interest in design or are unsure of their interest in engineering. Students should have a math background (AB calculus).

Fall	ENGN0032	S01	17008	TTh	10:30-11:50(13)	(M. Donohue)

ENGN 0040. Engineering Statics and Dynamics.

A broad introduction to Newtonian dynamics of particles and rigid bodies with applications to engineering design. Concepts include statics of structures; kinematics and dynamics of particles and rigid bodies; conservation laws; and use of MATLAB to solve equations of motion and optimize engineering designs. Examples of applications are taken from all engineering disciplines. Lectures, recitation, and team design projects, including use of Brown Design Workshop.

Spr	ENGN0040	S01	25454	TTh	9:00-10:20(05)	(T. Powers)

ENGN 0061. Undergraduate Teaching Assistant Apprenticeship: Full Credit.

Being an undergraduate TA is a learning and rewarding experience: Students get a deeper understanding of the course material and gain valuable management, mentoring, and social skills that they can take with them well into the future. Students taking this course must first be selected as an Undergraduate TA for an undergraduate Engineering course. Students can expect to work closely with the course instructor(s) on a variety of course-related topics, including preparation of material and development of assignments. A report on course development outcomes is expected as part of the course credit requirements.

Fall	ENGN0061	S01	17696	Arranged	(G. Palmore)

Spr	ENGN0061	S01	25943	Arranged	(G. Palmore)

ENGN 0062. Undergraduate Teaching Assistant Apprenticeship: Half Credit.

Being an undergraduate TA is a learning and rewarding experience: Students get a deeper understanding of the course material and gain valuable management, mentoring, and social skills that they can take with them well into the future. Students taking this course must first be selected as an Undergraduate TA for an undergraduate Engineering course. Students can expect to work closely with the course instructor(s) on a variety of course-related topics, including preparation of material and development of assignments. A report on course development outcomes is expected as part of the course credit requirements.

Fall	ENGN0062	S01	17697	Arranged	(G. Palmore)

Spr	ENGN0062	S01	25944	Arranged	(G. Palmore)

ENGN 0090. Management of Industrial and Nonprofit Organizations.

Exposes students to the concepts and techniques of management. Topics include marketing, strategy, finance, operations, organizational structure, and human relations. Guest lecturers describe aspects of actual organizations. Lectures and discussions.

Fall	ENGN0090	S01	18256	TTh	1:00-2:20(06)	(T. Chaltas)

Fall	ENGN0090	S02	18257	TTh	2:30-3:50(12)	(T. Chaltas)

ENGN 0120A. Crossing the Consumer Chasm by Design.

Technologies have shaped human life since tools were sticks and flints to today's hydrocarbon powered, silicon managed era. Some spread throughout society; bread, cell phones, airlines, but most never do; personal jet packs, Apple Newton, freeze dried ice cream.

Space Tourism, the Segway, electric cars: Can we predict which ones will cross the chasm to broad application? Can we help them to by combining design, engineering, marketing, communications, education, art, and business strategies?

Student teams identify potential new products, conceptualize, package, and define their business mode. By plotting their course across the chasm, we confront the cross-disciplinary barriers to realizing benefits from technology.

Enrollment limited to 18 first year students.

Spr	ENGN0120A/S01	25461	MWF	12:00-12:50(01)	'To Be Arranged'

ENGN 0120B. Crossing the Space Chasm Through Engineering Design.

Five decades of human activity in space have provided the world with instant global communications and positioning, human and robotic exploration of the moon, planets and sun, and a perspective of earth which informs and influences our relationship with our environment. Unlike other technical revolutions space has not transitioned to a commercial, consumer market commodity. Rather its users and applications remain primarily large and institutional. To experience the challenges of engineering design for adoption of innovation, we will work in groups to identify uses of space, and a plan for their implementations, that could help space become "every day". Through the process of design, we will confront the technical, economic, societal and political barriers to acceptance of innovation and to making new technologies beneficial to a wider range of users. Enrollment limited to 18 first year students.

Spr	ENGN0120B/S01	25462	MWF	2:00-2:50(07)	'To Be Arranged'

ENGN 0260. Mechanical Technology.

A basic machine shop course that, with the help of an instructor, teaches students how to fabricate a few simple objects using hand tools and some basic machines. This course is designed to introduce the student to the machining process and environment. Audit only.

Fall	ENGN0260	S01	18092	T	10:30-11:50	(D. Paine)

Fall	ENGN0260	S02	18100	T	1:00-2:20	(D. Paine)

Fall	ENGN0260	S03	18101	Th	10:30-11:50	(D. Paine)

Fall	ENGN0260	S04	18102	Th	1:00-2:20	(D. Paine)

Spr	ENGN0260	S01	25463	T	10:30-11:50	(D. Paine)

Spr	ENGN0260	S02	25464	T	1:00-2:20	(D. Paine)

Spr	ENGN0260	S03	25465	Th	10:30-11:50	(D. Paine)

Spr	ENGN0260	S04	25466	Th	1:00-2:20	(D. Paine)

ENGN 0310. Mechanics of Solids and Structures.

Mechanical behavior of materials and analysis of stress and deformation in engineering structures and continuous media. Topics include concepts of stress and strain; the elastic, plastic, and time-dependent response of materials; principles of structural analysis and application to simple bar structures, beam theory, instability and buckling, torsion of shafts; general three-dimensional states of stress; Mohr's circle; stress concentrations. Lectures, recitations, and laboratory. Prerequisite: ENGN 0030 or ENGN 0031 or ENGN 0032.

Fall	ENGN0310	S01	17039	MWF	9:00-9:50(09)	(D. Henann)

ENGN 0410. Materials Science.

Relationship between the structure of matter and its engineering properties. Topics: primary and secondary bonding; crystal structure; atomic transport in solids; defects in crystals; mechanical behavior of materials; phase diagrams and their utilization; heat treatment of metals and alloys; electrical and optical properties of materials; strengthening mechanisms in solids and relationships between microstructure and properties. Lectures, recitations, laboratory.

Fall	ENGN0410	S01	17042	TTh	2:30-3:50(12)	(L. Caretta)

ENGN 0490. Fundamentals of Environmental Engineering.

This course presents a broad introduction to environmental engineering, and will help students to explore environmental engineering as an academic major and as career option. The course covers topics in environmental engineering: chemistry fundamentals, mass balance, air pollution, water pollution, sustainable solid waste management and global atmospheric change. The course is essential for the environmental engineering students who are planning to take more advanced courses in environmental engineering. This course is also for the students in other engineering disciplines and sciences, who are interested in environmental constraints on technology development and practice, which have become increasingly important in many fields.

Fall	ENGN0490	S01	17045	TTh	1:00-2:20(06)	(I. Kulaots)

ENGN 0510. Electricity and Magnetism.

Fundamental laws of electricity and magnetism and their role in engineering applications. Concepts of charge, current, potential, electric field, magnetic field. Resistance, capacitance, and inductance. Electric

and magnetic properties of materials. Electromagnetic wave propagation. Lectures, recitation, and laboratory. Prerequisites: ENGN 0030, 0031, 0032 or PHYS 0070; ENGN 0040 or PHYS 0160 (previously 0080); MATH 0180 or 0200; and APMA 0330 or 0350 (may be taken concurrently).
Fall ENGN0510 S01 17046 MWF 10:00-10:50(14) (A. Zaslavsky)

ENGN 0520. Electrical Circuits and Signals.

An introduction to electrical circuits and signals. Emphasizes the analysis and design of systems described by ordinary linear differential equations. The frequency domain is introduced early and stressed throughout. Other topics include circuit theorems, power transfer, transient analysis, Fourier series, Laplace transform, a brief intro to diodes and transistors, and a little control theory. There is a lecture on engineering ethics. Laboratories apply concepts to real problems in audio and controls. Lectures, recitation, and laboratory. Prerequisite: MATH 0180 or MATH 0200, courses may be taken concurrent to ENGN 0520.

Spr ENGN0520 S01 25468 MWF 10:00-10:50(03) (J. Rosenstein)

ENGN 0610. Systems Thinking.

Systems Thinking links theory and practice to better understand and improve the world around us. It examines the nature of systems in nature, society, and engineering, and applies interdisciplinary lenses to explore important global challenges like those tied to climate change, energy, health, and supply chains. This holistic approach provides both a strategic and practical means to visualize, analyze, and design solutions to improve performance. Students will engage in activities to discover how complex patterns of behavior can arise from simple structures and simple rules and draw on these insights to develop a deeper understanding of how people, process, and purpose align to get things done. In sum, this course helps students see systems in a whole new light, develop mental toolkits for analyzing tough issues, model their structure and behavior, and understand how and why change happens.

Fall ENGN0610 S01 17050 MW 8:30-9:50(09) (R. Morales)

ENGN 0620. Design Brief.

This course introduces students to the theory and practice of engineering design. Topics include conceptual frameworks that ground the design process, the application of engineering concepts to inform design decisions, visual and written representation and communication, and the practice of design engineering.

Spr ENGN0620 S01 25473 MF 3:00-5:30 (D. Harris)

ENGN 0720. Thermodynamics.

An introduction to macroscopic thermodynamics and some of its engineering applications. Presents basic concepts related to equilibrium and the zeroth, first and second laws for both closed and open systems. Examples include analysis of engines, turbines, and other engineering cycles, phase equilibrium and separation processes, chemical reactions, surface phenomena, magnetic and dielectric materials. Lectures, recitations, and laboratory. Prerequisites: ENGN 0030 or ENGN 0040 or equivalent; ENGN 0410 or CHEM 0330. An understanding of intermediate calculus is recommended, such as MATH 0180 or MATH 0200.

Spr ENGN0720 S01 25474 TTh 10:30-11:50(09) (R. Hurt)

ENGN 0810. Fluid Mechanics.

Properties of fluids, dimensional analysis. Fluid statics, forces on submerged surfaces, kinematics. Conservation equations. Frictionless incompressible flows, Euler's equations, Bernoulli's equation: thrust, lift, and drag. Vorticity and circulation. Navier-Stokes equation, applications. Laminar and turbulent boundary layers, flow separation. Steady one-dimensional compressible flow. Sound, velocity, flow with area change, normal shocks. Lectures, laboratory. Prerequisites: MATH 0180 or 0200, ENGN 0040 or PHYS 0050 or PHYS 0070, APMA 0330 or APMA 0350 (can be concurrent).

Fall ENGN0810 S01 17051 MWF 1:00-1:50(08) (R. Zenit)

ENGN 0900. Managerial Decision Making.

Ways of making effective decisions in managerial situations, especially situations with a significant technological component; decision analysis; time value of money; competitive situations; forecasting; planning and scheduling; manufacturing strategy; corporate culture. Lectures and discussions. Prerequisite: ENGN 0090 or MATH 0100.

Spr ENGN0900 S01 25477 TTh 10:30-11:50(09) (T. Chaltas)

ENGN 0930L. Biomedical Engineering Design and Innovation.

This course is an incubator for innovative ideas in biomedical design. Students across all disciplines are invited to collaborate with biomedical engineers to enhance the development of design solutions that address clinical and public health concerns. Students will form teams with their peers and a clinical advisor, identify and define a design project to meet a clinical need, and engage in the design process throughout the semester. Engineering concentrators should register for ENGN1930L.

Fall ENGN0930LS01 17056 MW 8:30-9:50(09) (A. Tripathi)

ENGN 0931L. Biomedical Engineering Design and Innovation II.

This course is an incubator for innovative ideas in biomedical design. Students across all disciplines are invited to collaborate with biomedical engineers to enhance the development of design solutions that address clinical and public health concerns. Student teams formed in the previous semester will continue develop a design project based on an unmet clinical need with a clinical advisor, gaining hands-on process experience and generating innovative solutions. Engineering concentrators should register for ENGN 1931L.

Spr ENGN0931LS01 25479 MWF 11:00-11:50(04) (C. Kofron)

ENGN 1000. Projects in Engineering Design I.

Fall semester projects in design for concentrators in electrical, materials, and mechanical engineering. Students work in teams on projects that are defined through discussions with the instructor. An assembled product or detailed design description is the goal of the semester's effort. Students may elect to combine ENGN 1000 with ENGN 1001 to work on a year-long project with permission of the instructor. Students electing to pursue this option must take ENGN 1000 and ENGN 1001 in the same academic year, and must submit a project proposal no later than October 1. Permission of instructor is required. Applicants should fill out this form and attend the first class: <https://forms.gle/Fkr8DYyaB2Gse9NZ6>

Fall ENGN1000 S01 17058 M 3:00-5:30(03) (I. Gonsher)

ENGN 1001. Projects in Engineering Design II.

Spring semester projects in design for concentrators in electrical, materials, and mechanical engineering. Students work in teams on projects defined through discussions with instructor. An assembled product or detailed design description is the goal of semester's effort. Students may elect to combine ENGN 1000 with ENGN 1001 to work on a year-long project with permission of the instructor. Students electing to pursue this option must take ENGN 1000 and ENGN 1001 in the same academic year and must have submitted a project proposal by October 1 of the previous Fall semester. Permission of instructor is required. Applicants should fill out this form and attend the first class: <https://forms.gle/Fkr8DYyaB2Gse9NZ6>

Spr ENGN1001 S01 25481 M 3:00-5:30(13) (I. Gonsher)

ENGN 1010. The Entrepreneurial Process.

Entrepreneurship is innovation in practice: transforming ideas into opportunities, and, through a deliberate process, opportunities into commercial realities. These entrepreneurial activities can take place in two contexts: the creation of new organizations; and within existing organizations. This course will present an entrepreneurial framework for these entrepreneurial processes, supported by case studies that illustrate essential elements. Successful entrepreneurs and expert practitioners will be introduced who will highlight practical approaches to entrepreneurial success. Enrollment limited to 35.

Fall ENGN1010 S01 17059 TTh 10:30-11:50(13) (D. Warshay)

Fall ENGN1010 S02 17060 W 3:00-5:30(10) (F. Slutsky)

Fall ENGN1010 S03 17061 M 6:00-8:30PM (J. Cohen)

Spr ENGN1010 S01 25482 TTh 10:30-11:50(09) (D. Warshay)

Spr ENGN1010 S02 25483 MW 10:30-11:50 (H. Ansari)

ENGN 1110. Transport and Biotransport Processes.

Aim: To develop a fundamental understanding of mass transport in chemical and biological systems. The course includes: mechanism of transport, biochemical interactions and separations; mass transport in reacting systems; absorption; membrane and transvascular transport; electrophoretic separations; pharmacokinetics and drug transport; equilibrium stage processes; distillation and extraction. Other features: design concepts; modern experimental and computing techniques; laboratory exercises. Prerequisites: APMA 0350.

Spr ENGN1110 S01 25484 TTh 1:00-2:20(08) (I. Wong)

ENGN 1120. Reaction Kinetics and Reactor Design.

Mechanisms, driving forces, and rate expressions of homogeneous and heterogeneous chemical and biochemical systems. Kinetics described from the potential energy surface to reaction networks. Basic concepts in reactor design and idealized reactor models. Chemostats and enzymatic reactors. Optimization. Temperature and energy effects in reactors. Catalysts and coupled transport effects. Prerequisite: ENGN 0720 or equivalent. Offered in alternate years.

Fall ENGN1120 S01 17860 TTh 2:30-3:50(12) (F. Goldsmith)

ENGN 1140. Chemical Process Design.

Chemical process synthesis, flow charting, and evaluation of design alternatives. Process equipment sizing as determined by rate phenomena, economics, and thermodynamic limitations. Introduction to optimization theory. Applications of these principles to case studies. Prerequisites or Corequisites: ENGN 1110, 1120, 1130.

Spr ENGN1140 S01 25485 TTh 6:40-8:00PM(18) (M. Wojtowicz)

ENGN 1150. Environmental Engineering Design.

Capstone engineering design course for Environmental Engineering. The course will involve introducing students to environmental contamination scenarios, developing responses to that scenario, e.g., developing methods to assess the extent of the problem, to designing actual remediation or mitigation strategies to address the problem. Coursework relies on laboratory measurements, computer modeling or both. Emphasis on conducting realistic assessments of the threat to human and ecological receptors, including learning about any relevant regulations, an evaluation of strategies to minimize negative impacts, and consideration of both the costs and timescales needed for implementing alternatives. Prerequisites: ENGN 0490, ENGN 0720, ENGN 0810.

Spr ENGN1150 S01 25486 TTh 6:40-8:00PM(18) (K. Pennell)

ENGN 1210. Biomechanics.

Important foundations of continuum biomechanics, properties of biomaterials, three-dimensional concepts of strains and stress, linear isotropic elasticity, anisotropic response, yield, fracture, fatigue, nonlinear elastic and viscoelastic response of biological materials/structures and biomedical implants/devices will be taught. Students will learn physical basis, theory and applications of each of these topics for biomedical engineering applications. Muscle biomechanics, biomechanics of walking and running, and response of soft tissue and bone will be discussed.

Spr ENGN1210 S01 25487 TTh 2:30-3:50(11) (V. Srivastava)

ENGN 1220. Neuroengineering.

Course Goals: To develop an advanced understanding of how signals are generated and propagated in neurons and neuronal circuits, and how this knowledge can be harnessed to design devices to assist people with neurologic disease or injury. Fundamental topics in neuronal and neural signal generation, recording methods, and stimulation methods. Clinical/Translational topics include multiple clinically available and emerging neurotechnologies. Prerequisites: NEUR 0010 and ENGN 0510; or instructor permission, which may be provided after discussion with course faculty.

Spr ENGN1220 S01 25488 TTh 1:00-2:20(08) (L. Hochberg)

ENGN 1230. Instrumentation Design.

Sensors for pressure, temperature, blood flow, muscle and neural activity. Amplifiers, filters, and A/D-D/A converters. The use of computers in monitoring and controlling physiological processes. Feedback controllers for temperature, flow rate, and experimental stimuli. Intended as a design course primarily for biomedical engineers. Lab times to be arranged.

Fall ENGN1230 S01 17063 MWF 10:00-10:50(14) (D. Borton)

ENGN 1300. Structural Analysis.

Classical and modern methods of analysis for statically indeterminate structures. Development of computer programs for the analysis of civil, mechanical, and aerospace structures from the matrix formulation of the classical structural theory, through the direct stiffness formulation, to production-type structural analysis programs. Introduction to Finite Element Methods (FEM) and Isogeometric Analysis (IGA). Prerequisite: ENGN 0310.

Spr ENGN1300 S01 26245 TTh 1:00-2:20(08) (D. Henann)

ENGN 1340. Water Supply and Treatment Systems - Technology and Sustainability.

This course provides a comprehensive overview of engineering approaches how to protect water quality. Class begins with brief introduction to hydrological cycle. More in detail groundwater flows (Darcy eq.-n) and flows into wells are examined. Principles of hydraulics are presented. Open channel and river flows, flood routing and preventing are presented. Freshwater and wastewater treatment technologies, together with advanced water treatment processes, are evaluated. Course ends with the visit to a local wastewater treatment plant. Prerequisites: CHEM 0330 and ENGN 0040. Recommended ENGN 0810.

Spr ENGN1340 S01 25490 W 3:00-5:30(10) (K. Pennell)

ENGN 1350. Art Fluid Engineering.

Art can be defined in many different ways such as: Art is the action to produce objects with no practical use, whose only purpose is to be beautiful or stimulate the intellect in some way. Engineering is a discipline that uses science to produce devices or processes that are intrinsically useful. We will combine two contrasting views to create objects that have aesthetic value and can be useful. This course will use fluid flows to create art. Students will participate in discussions in which a 'fluid' idea will be presented. Contrasting scientific/engineering and artistic analysis will be conducted, and students will identify a flow problem to create art: dynamic sculptures, paintings, videos, installations. Art pieces will be presented and exhibited publicly. Course offered simultaneously with ENGN 0350; same objectives and grading schemes. ENGN 1350 has prerequisites and required additional technical assignments.

Spr ENGN1350 S01 25491 MWF 10:00-10:50(03) (R. Zenit)

ENGN 1370. Advanced Engineering Mechanics.

A unified study of the dynamics of particles, rigid bodies, and deformable continua. Generalized coordinates and Lagrange's equations; variational principles; stability of equilibrium; vibrations of discrete systems and of elastic continua, and wave propagation. Prerequisites: ENGN 0040, APMA 0340, or equivalent.

Spr ENGN1370 S01 25492 TTh 2:30-3:50(11) (P. Guduru)

ENGN 1410. Physical Chemistry of Solids.

Application of physical chemistry and solid state chemistry to the structure and properties of engineering solids as used in solid state devices, ceramics, and metallurgy. Equilibrium and free energy of heterogeneous systems, thermodynamics of solutions, chemical kinetics, diffusion, catalysis and corrosion, solid state transformations. Case studies taken from industrial practice. Prerequisites: ENGN 0410, 0720.

Fall ENGN1410 S01 17066 Th 4:00-6:30(04) (A. Van De Walle)

ENGN 1420. Kinetics Processes in Materials Science and Engineering.

This course introduces the basic principles and formulations that describe kinetic processes in materials science and engineering. These are divided into the following principle types of mechanisms: solid state diffusion, reactions at surfaces and interfaces, and phase transformations. The final section of the course applies these principles to several relevant materials processing systems. Prerequisites: ENGN 0410, 0720, 1410 or equivalent.

Spr ENGN1420 S01 25493 TTh 10:30-11:50(09) (B. Sheldon)

ENGN 1440. Mechanical Properties of Materials.

Begins with basic concepts of mechanical properties common to all materials, with some emphasis on dislocation theory. Particular attention is given to the relationship between mechanical properties and microstructures. The different types of mechanical tests that are used in each of these fields are analyzed. Lectures plus laboratories. Prerequisite: ENGN 0410.

Spr ENGN1440 S01 25494 MW 8:30-9:50(02) (N. Padture)

ENGN 1450. Properties and Processing of Electronic Materials.

Focus on fundamental properties, processing, and characterization of electronic materials for microelectronic, large area, and thin film device applications. Processing Si into modern integrated circuits, e.g., VLSI, USLI, will be described in terms of materials science of unit processes (oxidation, lithography, diffusion, ion implantation, thin film deposition) used in device fabrication. Review relationship between properties of different materials classes (metals, semiconductors, insulators) and band structure. Concepts used to explain the operation of a p-n junction and

simple MOS structures. Laboratory will focus on depositing materials via vapor phase synthesis methods and measuring fundamental electronic properties of materials using transport measurements.

Spr ENGN1450 S01 26265 TTh 9:00-10:20(05) (L. Caretta)

ENGN 1475. Soft Materials.

This course is an introduction to soft materials, focusing on natural and synthetic polymers and composites. Students will learn fundamentals of polymer chemistry (synthetic approaches) and polymer physics (thermodynamics, diffusion, viscosity); methods for characterizing/analyzing the structure of polymers in solution and solid state, including laboratory exercises; and approaches to designing polymers with properties for different applications (actuation, 3D printing, robotics, drug delivery). Course focuses on design of soft materials for specific applications and includes reading and discussion of primary literature. The course will be taught at a level suitable for undergraduates in engineering and graduate students in engineering and related fields.

Fall ENGN1475 S01 17930 M 3:00-5:30(03) (G. Palmore)

ENGN 1490. Biomaterials.

Biomaterials science, the study of the application of materials to problems in biology and medicine, is characterized by medical needs, basic research, and advanced technological development. Topics covered in this course include materials used in bone and joint replacement, the cardiovascular system, artificial organs, skin and nerve regeneration, implantable electrodes and electronic devices, drug delivery, and ophthalmology.

Fall ENGN1490 S01 17067 MWF 2:00-2:50(01) (K. Coulombe)

ENGN 1510. Nanoengineering and Nanomedicine.

Students in this course will develop a fundamental understanding of nanoengineering and its applications in medicine. We will discuss nanomaterials synthesis, fabrication, and characterization. Medical applications of these materials will include drug delivery, imaging and diagnostics, and tissue engineering approaches. Nanotoxicology will also be discussed. Research methods in nanoengineering and nanomedicine will be emphasized (i.e., critical analysis of scientific literature, effective oral and written communication). Students will also have the opportunity to gain an introduction to several nanoengineering research tools available on campus. This course is for engineering and science graduate students and advanced upper-level engineering undergraduates.

Fall ENGN1510 S01 17068 TTh 1:00-2:20(06) (A. Shukla)

ENGN 1520. Cardiovascular Engineering.

In this course, students will learn quantitative physiological function of the heart and vascular system, including cardiac biomechanics and vascular flow dynamics, through lectures and discussion of current scientific literature. A systems approach will integrate molecular biophysics, cell biology, tissue architecture, and organ-level function into a quantitative understanding of health and disease. Discussion topics will include cardiovascular devices, pre-clinical regenerative therapies, stem cell ethics, and clinical trials.

Spr ENGN1520 S01 25495 TTh 9:00-10:20(05) (K. Coulombe)

ENGN 1550. Recent Advances in Biomedical Engineering.

This course will cover the latest developments in biomedical engineering over a broad range of areas including drug delivery, regenerative medicine, immune engineering, and diagnostics. Applications discussed within these fields may include infectious disease technologies, women's health, global health technologies, biomanufacturing, etc. Students will learn about recent developments in these fields in academia, government, and industry. This course is intended for engineering and science graduate students and undergraduates interested in gaining an appreciation for current applications of biomedical engineering. An emphasis will be placed on critical analysis of current technologies and scientific communication with diverse audiences. This course is meant for engineering and science graduate and undergraduate students that have completed CHEM 0330 (or equivalent) and MATH 0100 (or equivalent).

Spr ENGN1550 S01 25939 MWF 12:00-12:50(01) (A. Shukla)

ENGN 1560. Applications in Microwave Communications.

We focus on the study/design of communications systems that operate within microwave frequencies (1-300 GHz). We review transmission/reception of TEM waves in various mediums, transmission lines, PCB's

and waveguides. We look at RF components including oscillators, amplifiers, filters, tuners, frequency converters and antenna systems. We also measure system performance in terms of dynamic range, noise figure and power delivery. Once these foundations are set, we look at the End-2-End system design for Radio/TV, Radar, WIFI, 5G-Mobile, Satellites, and fiber optic networks. We also look at high-speed circuits used throughout the packet switched Internet. We look at practical design approaches for high-availability design with guest industry experts. We augment class lectures with biweekly P-sets and hands-on lab experiments, both with instrumentation and SW simulation. The class has 2 mid-terms, a class field trip, and final design project from class concepts.

Fall ENGN1560 S01 17111 TTh 1:00-2:20(06) (E. Tracy)

ENGN 1570. Linear System Analysis.

Analysis of discrete and continuous electrical signals and systems in both time and frequency domains. Modulation, sampling, spectral analysis, analog and digital filtering. Fourier, Laplace and z-transforms, the state-space approach, stability of linear systems. Prerequisite: ENGN 0520.

Fall ENGN1570 S01 17069 MWF 1:00-1:50(08) (P. Felzenszwalb)

ENGN 1580. Communication Systems.

We will learn basic communication and information theory, but with examples drawn from a variety of areas not normally considered communication. Basic knowledge of Laplace/Fourier transforms and frequency domain is essential (ENGN 0520 or equivalent required). Linear Systems (ENGN 1570), Probability (APMA 1650 or MATH 1610), Linear Algebra (MATH 0520 or 0540) and E&M (ENGN 0510) are helpful but not required. Analog modulation, digitization, signal space, digital modulation and noise, information theory, selected topics in modern communication/information network theory and applications to biology and physics as time and interest permit. Depending on preparation, we may also pursue final projects.

Spr ENGN1580 S01 25496 TTh 2:30-3:50(11) (C. Rose)

ENGN 1590. Semiconductor Devices.

An introduction to semiconductor device physics and basic electronic properties of semiconductors, including junctions, heterojunctions and fundamental device building blocks. Current and proposed semiconductor devices: field effect transistors, bipolar transistors, quantum-effect devices, and optoelectronic devices. A brief fabrication lab will introduce junction fabrication in the cleanroom. Advanced topics, such as heterojunction bipolar transistors and silicon-on-insulator FETs, included in the graduate version.

Spr ENGN1590 S01 25497 MWF 2:00-2:50(07) (A. Zaslavsky)

ENGN 1610. Image Understanding.

Image processing is a technology experiencing explosive growth; it is central to medical image analysis and transmission, industrial inspection, image enhancement, indexing into pictorial and video databases, e.g., WWW, and to robotic vision, face recognition, and image compression. This senior-level undergraduate course covers theoretical underpinnings of this field and includes a series of practical MATLAB image processing projects. ENGN 1570 is recommended, but not required.

Fall ENGN1610 S01 17070 W 3:00-5:30(10) (B. Kimia)

ENGN 1620. Analysis and Design of Electronic Circuits.

Analysis and design of a variety of fundamental analog integrated microelectronic circuits at the transistor level and their practical applications to sensing and interfacing in a range of fields; life sciences, wireless communications, and computing. Elementary device physics and circuit characteristics of semiconductor diodes and MOS field effect transistors (FETs) as fundamental building blocks will be discussed. Concepts of noise and fundamental limits of sensing will also be discussed. Required Text: Fundamentals of Microelectronics, Wiley, Behzad Razavi, any edition (1st - 3rd). Prerequisites: ENGN 0520 or ENGN 1230 or with instructor permission.

Spr ENGN1620 S01 25499 TTh 9:00-10:20(05) (L. Larson)

ENGN 1630. Digital Electronics Systems Design.

Fundamentals of digital logic design including: Boolean algebra, gates, truth tables, logic families, flip-flops, finite state machines, memory, and timing. More advanced topics include A-D conversion, binary arithmetic, CPU organization, programmable logic (CPLDs and FPGAs), and

VHDL. Extensive laboratory requirement. Not open to first year students; permission required for sophomores.

Fall ENGN1630 S01 17072 TTh 2:30-3:50(01) (S. Reda)

ENGN 1640. Design of Computing Systems.

This course introduces the main concepts and techniques for designing computing systems. Topics covered include assembly language, instruction set design, pipelining, superscalar and VLIW processor design, memory subsystem design, and I/O interfacing. Laboratory topics include programmable logic devices, hardware definition languages, and implementation of a bootable version of the pipelined MIPS processor. Laboratory emphasizes design optimizations with respect to speed and design area. Prerequisite: ENGN 1630 or passing of a quiz on basic digital logic concepts, or instructor permission.

Spr ENGN1640 S01 25500 MWF 2:00-2:50(07) (S. Reda)

ENGN 1650. Embedded Microprocessor Design.

This is a combined lecture and design project course offering experience in the open-ended design of an electronic product or system employing an embedded microprocessor by small-group design teams. Activity includes product specification, circuit design, programming, printed circuit layout, construction, packaging, and economic assessment. Teams are expected to produce functional products. Lecture topics will be adjusted to reflect the chosen design problems. Emphasis is placed on the criteria for choosing processors and on the interfaces and programming requirements of the system. Primarily for senior concentrators. Experience with C programming is helpful but not required. Prerequisite ENGN 1630 or permission of the instructor.

Fall ENGN1650 S01 18911 TTh 9:00-10:20(05) (E. Tracy)

ENGN 1690. Photonics Devices and Sensors.

Science and engineering principles of photonics and optoelectronic devices that provide foundation to a broad range of technologies from lasers to detectors, from cameras to computer displays, from solar cells to molecular sensing, from internet to quantum cryptography, and to new lighting sources for illuminations in the city and in biomedical treatments. Topical content: Light as waves in media, on surfaces, and through micro and nanostructures; interference and waveguiding; light generation by spontaneous emission, stimulated emissions, photodetection, infrared and night visions, LED, lasers, optical amplifiers and modulators, etc. Prerequisite: ENGN 0510 or equivalent.

Fall ENGN1690 S01 17074 TTh 10:30-11:50(13) (J. Xu)

ENGN 1700. High Reynolds Number Flows.

You will explore the fluid mechanics of aerospace and energy systems. Aerospace fluid dynamics are the dynamics of flows involving air. Such flows have a variable density over space and time. They can expand to take the shape of volume or be compressed into a confined space. These flows surround (air), inflate (air in lungs), compress (impact), hold/push (drag/thrust), and levitate (flight). Investigate flows to design and take advantage of their behavior for engineering solutions (e.g., extracting energy). Learn to identify a fluid and develop the framework (differential equations) describing compressible flow motion/dynamics. Study fundamental thin airfoil, wing, and boundary layer theory. Consider extracting energy from air flows using wind turbines. Solve the Euler equations using analysis and numerical methods. The course concludes by surveying advanced topics involving supersonics, hypersonics, and space propulsion. Prerequisites: ENGN 0720 and ENGN 0810.

Spr ENGN1700 S01 25501 MWF 11:00-11:50(04) (M. Rodriguez)

ENGN 1710. Principles of Heat Transfer.

This course explores the transfer of energy as heat. It starts with basic heat transfer problems involving thermal conduction, convection, and radiation. The steady heat transfer through composite walls and heat dissipated from extended surfaces (such as fins) are examined. Transient heat transfer and heat transfer between solids and fluids will be investigated, considering natural and forced convection heat transfer. Various heat exchanger types will be evaluated, however concentric double-pipe heat exchangers analyzed in detail. Radiant heat transfer, surface emissive power, real surface radiation; view factors for black and gray surfaces will be studied. The course includes two hands-on laboratory experiments which supplement the material covered in the class meetings. The course also includes recitation sessions devoted to using COMSOL.

The course ends with a design team competition focused on the most "efficient and elegant" coffee cup. Prerequisite: ENGN 0720

Spr ENGN1710 S01 25503 TTh 10:30-11:50(09) (E. Suuberg)

ENGN 1730. Lasers and Nonlinear Optics.

This is a second course on optics and photonics and is intended for juniors interested in more advanced topics in modern optics who have already completed ENGN1690. Topics to be covered include the fundamentals of laser operation, gain and gain saturation, resonators, single-mode and multi-mode lasers, and a selection of important laser examples. We will then discuss light-matter interactions in the nonlinear regime, relying on a classical or semi-classical treatment. Topics will include frequency conversion via mixing or parametric processes, and degenerate third-order self-induced effects. Time permitting, we will discuss some of the most recent breakthroughs in optically-driven nonlinear processes such as laser-induced fusion as well as the planned exascale laser systems currently under development.

Spr ENGN1730 S01 26248 MWF 1:00-1:50(06) (D. Mittleman)

ENGN 1735. Vibration of Mechanical Systems.

This course will focus on the vibration characteristics of mechanical systems. Topics will include: analysis of free and forced single degree-of-freedom linear oscillators, vibration control and isolation, multiple degree-of-freedom and continuous systems, and introduction to nonlinear oscillations. Relevant analytical and numerical methods useful for modeling and analysis of vibrating systems will be discussed throughout. Students will be expected to do some numerical calculations on a computer.

Fall ENGN1735 S01 17075 TTh 9:00-10:20(05) (D. Harris)

ENGN 1740. Computer Aided Visualization and Design.

Provides instruction in the application of computers to the design methods in engineering. Hands-on experience in use of CAD/CAE software packages for geometric modeling, visualization, and drafting. Emphasis on applications to solids and structural problems. Independent design projects are carried out. Course counts as an ABET upper-level design course for mechanical and civil engineering concentrators. Prerequisite: ENGN 0310.

Spr ENGN1740 S01 25505 T 7:00-9:30PM 'To Be Arranged'

ENGN 1750. Advanced Mechanics of Solids.

Continuum mechanics of solids and its application to the mechanical response of machine and structural elements. Tensor descriptions of deformation and internal forces in solids; field equations. Elastic and elastic-plastic material models; failure criteria. Analytical techniques and energy methods for elastic solids; implementing the finite element method for elastic solids. Beam and plate theory. Stress waves and vibrations in solids. Use of commercial finite element software. Prerequisite: ENGN 0310, APMA 0330 or 0350.

Fall ENGN1750 S01 17077 TTh 10:30-11:50(13) (K. Kim)

ENGN 1760. Design of Space Systems.

Working in design groups, students conceive a space mission and design all of the elements necessary for its execution including launch and orbit / trajectory, space and ground systems, including analysis of structure, thermal, radio link, power and mass budgets, attitude control and dynamics. Each group builds a hardware project to demonstrate a core element of their mission design.

Spr ENGN1760 S01 25506 MWF 1:00-1:50(06) 'To Be Arranged'

ENGN 1800. Social Impact of Emerging Technologies: The Role of Scientists and Engineers.

The role of engineering sciences in an ever-changing technology-driven world. Students will develop basic working knowledge of selected contemporary technologies that help identify and forecast future prospects while discerning future disruptions. Emphasis on the importance of ethical and social responsibilities that technologists must shoulder in answering societal challenges and contributing to policy making and corporate leadership. How do we create beneficial technologies yet anticipate their potential social costs, such as workforce automation or overdependence on the internet? Will we give up brains as our last private space? Who will control the data / technology ecosystem that influences our decisions?

Fall ENGN1800 S01 17078 TTh 4:00-6:30(07) (A. Nurmikko)

ENGN 1820. Future of Work.

Technological advances have the potential to substantially change our work experiences, organizations and society. Collectively, these trends represent the Future of Work and can bring many positive benefits, such as new work options in the gig economy or new opportunities for start-ups. At the same time, such advances can raise ethical concerns and questions when technology is used to predict human behavior, replace employees, create a contingent and low-wage workforce, or drive autonomous vehicles, among many other examples. Using a combination of case studies, projects, academic articles, and current media materials, this class will examine three issues related to these new trends: How the world of work is changing, why these changes are important in relation to organizations and entrepreneurship, and what skills are necessary to shape the future of work in ways that are sustainable, ethical, and inclusive.

Spr ENGN1820 S01 26289 T 4:00-6:30(16) (B. Ozkazanc-Pan)

ENGN 1860. Advanced Fluid Mechanics.

Aims to give students a deeper and more thorough grounding in principles and applications of fluid mechanics. Topics include review of dimensional analysis and conservation principles; viscous flows with application to microfluidics; lubrication analysis for bearing design; laminar boundary layers; wave motion; and interfacial phenomena (e.g., drops and bubbles). Lectures, assignments, computational projects, and laboratory. Prerequisites: ENGN 0810.

Fall ENGN1860 S01 17929 MWF 11:00-11:50(16) (K. Breuer)

ENGN 1930B. Biomedical Optics.

Biomedical Optics is a rapidly growing field with applications in medicine, biology, and neuroscience. This course aims to empower students with theoretical and practical skills needed to design state-of-the-art biomedical optical systems, spanning from imaging systems to medical devices. Topics include ray transfer matrix analysis, use of symbolic and numerical computations, light as an electromagnetic wave, depth of field, diffraction, and imaging techniques such as widefield and scanning microscopy. By integrating a solid theoretical foundation with hands-on experience, this course offers an in-depth understanding of the topics, preparing students for optical device design challenges. Prerequisites: Undergraduate level ENGN 0510 Minimum Grade of S

Spr ENGN1930ES01 25938 MWF 12:00-12:50(01) (J. Lee)

ENGN 1930L. Biomedical Engineering Design and Innovation.

This course is the culmination "capstone" of the biomedical engineering educational experience. The primary objective of this course is to recall and enhance design principles introduced through the engineering core curriculum and to apply this systematic set of engineering design skills to biomedical engineering projects. Students will form teams with their peers and a clinical advisor, identify and define a design project to meet a clinical need, and engage in the design process through the course of the semester. For seniors only. Non-engineering concentrators should register for ENGN 0930L.

Fall ENGN1930LS01 17057 MW 8:30-9:50(09) (A. Tripathi)

ENGN 1931D. Design of Mechanical Assemblies.

An introduction to the design and development of mechanical assemblies suitable for production over a range of volumes, from prototypes to high volume manufacture. The course is intended to present an overview of basic machine components and manufacturing processes from the perspective of a design engineer in a contemporary industrial setting. The objective of which being to provide students the background necessary to create mechanical assemblies from blank-page concepts through to production ready designs. Coursework will include both theoretical and experimental exercises as well as two group projects working on a mechanical assembly produced via high volume manufacture. Prerequisite: ENGN 0310, 1740. Enrollment limited to 20.

Fall ENGN1931DS01 17081 M 7:00-9:30PM (D. Bamford)

ENGN 1931L. Biomedical Engineering Design and Innovation II.

This course is part two of the culmination "Capstone" of the biomedical engineering educational experience. The primary objective of this course is to recall and enhance design principles introduced through the engineering core curriculum and to apply this systematic set of engineering design skills to biomedical engineering projects. Student teams formed in the previous semester will continue develop a design

project based on an unmet clinical need with a clinical advisor, gaining hands-on process experience and generating innovative solutions. For seniors only. Non-engineering concentrators should register for ENGN 0931L.

Spr ENGN1931LS01 25480 MWF 11:00-11:50(04) (C. Kofron)

ENGN 1931P. Energy and the Environment.

This course explores all the energy forms, but will focus on energy sources from which the majority of "useful" energy originates at the present time. Basic heat transfer problems related to energy efficiency are presented. Rankine and Brayton power cycles are introduced. Cycle modifications supporting energy efficiency are explored. Carbon footprint calculations are illustrated. Traditional and cutting-edge technologies for carbon capture and storage presented. Emissions such as SO_x, NO_x, and PM and their capture technologies investigated. The Earth climate model examined. The course features three 1-page long scientific summary writings and the tour to the Manchester Street Power Station.

Fall ENGN1931PS01 17082 TTh 10:30-11:50(13) (I. Kulaots)

ENGN 1931Q. Entrepreneurial Management in Adversity.

Companies get into trouble all the time -- making wrong products for the market, failing to meet sales quotas. This course examines actions a company must take in adverse conditions. There is never enough time to hire consultants, do research, hire new employees. Top Management must make decisions, often with insufficient data and alternative 'sub-optimal' options. Primary objectives are to understand analysis and rapid action when faced with adversity; identify the cause of adversity, building solutions to prevent recurrence or give management the skills to solve problems; and develop recommendations and action plans to 'sell' to the Board of Directors.

Fall ENGN1931QS01 17083 M 3:00-5:30(03) (H. Anderson)

ENGN 1931R. The Chemistry of Environmental Pollution.

This course examines fundamental chemical aspects of pollutants and methods used to address pollution. We will consider pollution in air, water and soil media, and how pollution arises. Basic aspects of pollutant chemical partitioning will be explored. Examples of site investigation and the chemical tools used for that purpose will be discussed, along with risk assessment. Different ways of cleaning up contaminated sites will be examined, along with considering how mitigation and natural processes might represent options for addressing the particular pollution situation. Prerequisites are (MATH 0100, 0170, 0180, 0200, 0350 or 0190) and (CHEM 0100 or 0330).

Fall ENGN1931RS01 17926 MWF 11:00-11:50(16) (E. Suuberg)

ENGN 1931T. Entrepreneurship Practicum: Starting, Running, and Scaling Ventures.

Starting and running a venture is one of the most rewarding and frustrating endeavors a manager faces. While good ideas abound, the hallmark of the entrepreneur is the ability to translate ideas into action. This course is experiential, project-based, and designed to help entrepreneurs turn ideas into real ventures. Students should have already identified a problem whose solution may serve as the basis for a venture. Some may have embarked upon venture-building already. This course will help them work in a structured way, with supportive mentorship and content, to make significant progress on the venture and increase chances for success.

Fall ENGN1931TS01 18071 TTh 1:00-2:20(06) (J. Clark)

ENGN 1931W. Selling & Sales Leadership in the Entrepreneurial Environment.

Is there any skill more important to entrepreneurs than sales? Startups only have two problems: sales and all else. The entrepreneur starts with a product or service and must convince an embryonic team to join a firm before there is a product, financing or customers; and convince investors the idea is sound, doable, and profitable; and convince customers to rely on a company with no track record. Sales skills are essential. Entrepreneurs sell an intangible and must make it feel immensely tangible. Until company/product become tangible, sales responsibility never stops. Entrepreneurs are key sales figures and face of the company.

Fall ENGN1931WS01 17084 MW 8:30-9:50(09) (H. Anderson)

ENGN 1931Y. Control Systems Engineering.

Control Systems is an Engineering discipline that applies control theory to analyze and design systems with desired response behavior. The

objective of this course is to introduce the student to the topic of feedback control design with applications on many diverse systems. The course will cover the fundamentals of classical control theory such as modeling, simulation, stability, controller design and digital implementation. It will also address basic aspects of state-space and modern control theory. The course is open to all Engineering majors and will make use of existing simulation packages such as Matlab/Simulink.

Fall ENGN1931YS01 17085 MTh 5:40-7:00 (A. Zaki)

ENGN 1932D. Qualitative Market Research for Entrepreneurs & Business Innovators.

A critical element of entrepreneurship, and indeed all new business development, is to be able to undertake insightful market research, including developing an 'understanding' of the customers of potential new products and services. This requires qualitative research methods, and in this course participants learn to utilize the most recent and effective methods. A feature of the course is that the curriculum also explores the academic origins of the methods, developed from the fields of sociology, anthropology, management, and industrial design. Participants undertake a meaningful market research project in teams or as individuals.

Spr ENGN1932ES01 25511 W 3:00-5:30(10) (A. Kingon)

ENGN 1932R. Leadership in Organizations.

Leadership is an important part of organizational life and can be broadly understood as those behaviors and approaches that have the ability to influence ideas, actions, and outcomes in organizations and in society. In this course, we will examine different theories and approaches to leadership and then apply them in the context of inclusion and innovation. In today's world, leading innovations in an inclusive way is important for the well-being of organizations/firms specifically and society broadly. Many different notions and practices of leadership co-exist, sometimes harmoniously and sometimes at odds with each other. Both technical and non-technical individuals must learn how to lead successfully in different contexts ranging from start-ups to well-established organizations across industries and sectors.

Fall ENGN1932FS01 18059 M 3:00-5:30(03) (B. Ozkazanc-Pan)

ENGN 1950. Advanced Numerical Methods for Data, Simulation, and Optimization.

Engineers persistently aim to create new structures, machines, and devices to leverage physical principles to man's advantage. Stemming from recent concerns over the environmental impact of technology and increased market competition, there is heightened focus on increasing efficiency. Therefore, future engineers must come up with designs that are not only functional but also optimal. This course will present the mathematical theory of engineering optimization; review optimization theory and techniques from calculus; calculus of variations; necessary and sufficient conditions for optimality; bio-inspired engineering, optimal designs found in nature. Projects involving design and fabrication of optimal engineering systems will be encouraged.

Fall ENGN1950 S01 18024 MWF 2:00-2:50(01) (H. Kesari)

ENGN 1970. Independent Studies in Engineering.

Independent Study in Engineering. Instructor permission required after submitting online proposal (<https://forms.gle/PGBZrcB2Y6N3Ca17>). Section numbers vary depending on concentration. Please check Banner for the correct section number and CRN to use when registering for this course.

ENGN 1971. Independent Study in Engineering.

Independent Study in Engineering. Instructor permission required after submitting online proposal (<https://forms.gle/PGBZrcB2Y6N3Ca17>). Section numbers vary depending on concentration. Please check Banner for the correct section number and CRN to use when registering for this course.

ENGN 1972. Independent Study in Engineering Design.

Independent Study in Engineering, with approved design content. Instructor and concentration advisor approval is required after submitting online proposal (<https://forms.gle/PGBZrcB2Y6N3Ca17>). Section numbers vary depending on concentration. Please check Banner for the correct section number and CRN to use when registering for this course.

ENGN 1973. Independent Study in Engineering Design.

Independent Study in Engineering, with approved design content. Instructor and concentration advisor approval is required after submitting online proposal (<https://forms.gle/PGBZrcB2Y6N3Ca17>). Section numbers vary depending on concentration. Please check Banner for the correct section number and CRN to use when registering for this course.

ENGN 2010. Mathematical Methods in Engineering and Physics I.

An introduction to methods of mathematical analysis in physical science and engineering. This course focuses on analytical techniques in mathematics. It includes series solution for differential equations, Fourier series and Fourier transform for solving partial differential equations, analytical maximum and minimum problems, calculus of variations and complex functions, and complex calculus.

Fall ENGN2010 S01 17054 MTh 7:10-8:30PM (A. Zaki)

ENGN 2030. Persuasive Communication.

This course will provide students with theory, practice opportunities and individualized coaching to help them enhance their oral and written communication skills. Students will focus on persuasive communication, including verbal and nonverbal communication, the relationship between a presenter's goal and the goals/perspectives of the audience, and the rhetorical elements of logos, ethos and pathos. Students will learn how to create compelling business presentations using data visualization to garner people's attention and stimulate action. This course includes the practice of writing as a method for thinking and learning, which develops students' capacity for reflection and awareness of one's self and others.

Fall ENGN2030 S01 18493 Arranged (B. Tannenbaum)

ENGN 2070. Unlocking Value Globally.

This 10-module required course focuses on innovation as a driver for creating value globally. The modules provide an opportunity to consider the foundations for innovation in existing firms as well as innovations that can lead to entrepreneurial opportunities. Students will develop the knowledge and skills to understand the drivers of innovation, the challenges of creating innovation at a global scale, and the various ways in which inclusion is an important consideration in the development and deployment of innovations. Students will have the opportunity to learn from case studies that focus on innovation successes as well as failures in various firms across different industries. With the advent of new technologies, students will also discuss the opportunities and challenges represented by AI, automation, IoT, and other emergent areas for innovation.

Fall ENGN2070 S01 18253 Arranged (B. Ozkazanc-Pan)

ENGN 2150. Technology Entrepreneurship and Commercialization I.

ENGN 2150 and the spring ENGN 2160 form a sequence that develops the skills for technology-based entrepreneurship. It teaches creation of viable high-growth-potential new ventures from emerging science and technology. It is from emerging S&T that a high percentage of new jobs are created, both by existing large companies and through the formation of new companies. You will examine S&T for new opportunities, create novel product or service concepts from these sources and determine whether these concepts truly represent new business opportunities. Pedagogy is a combination of lectures and "experiential learning", with work undertaken as a two-semester project. Enrollment limited to students in the ScM Prime program.

Fall ENGN2150 S01 18411 M 9:00-12:00 (D. Paratore)

Fall ENGN2150 S02 18412 T 3:00-6:00 (V. Colvin)

Fall ENGN2150 S03 18413 W 6:00-9:00PM (J. de Vries)

Fall ENGN2150 S04 18414 Arranged (J. de Vries)

ENGN 2160. Technology Entrepreneurship and Commercialization II.

ENGN 2160 develops the knowledge of, and embeds the skills for, technology-based entrepreneurship. While ENGN 2150 has helped you to examine science and technology sources, and create a portfolio of opportunities from these, this course continues by developing selected opportunities into a compelling business case for the creation of a high growth potential new venture. Once again, learning is by a combination of lectures and "experiential learning", with work undertaken as a guided two-semester project. Enrollment limited to 30 graduate students in the ScM PRIME program.

Fall	ENGN2160	S01	18415	W	3:00-6:00	(H. Ansari)
Fall	ENGN2160	S02	18416	Th	3:00-6:00	(H. Ansari)
Fall	ENGN2160	S03	18417	T	6:00-9:00PM	(J. Duane)
Fall	ENGN2160	S04	18418	Arranged		(J. Duane)

ENGN 2171. Iterating with Intention.

The studio experience forms the core of MADE. It gives students the opportunity to practice deliberate design engineering with guidance, mentoring, and critique from experienced academics and practitioners. Three short fall projects are arranged so that, as students progress, the responsibility for content, organization, and outcomes shifts from the faculty to participants.

Fall	ENGN2171	S01	17611	TTh	1:00-5:30	(L. Manfredi)

ENGN 2172. Integrate and Implement.

In this final studio, students embark on a semester-long project to collaboratively develop their proposal into a proven, credible product implementation plan. These group-based, research-driven design engineering projects serve to illuminate skills and professional ambitions. They become the basis for building portfolios and integrate prior components of the program into a coherent whole. To start, the previously completed project proposal is developed for execution. It is refined to include further details such as project planning, professional audience and advisor identification, and budgeting. The remaining self-directed process will go on to include client interactions, user and market research, collaborative practice, realization strategies, prototyping and testing, and methods to "tell the story" of how the artifacts developed fit in the world.

Spr	ENGN2172	S01	25936	TTh	1:00-5:30	'To Be Arranged'

ENGN 2210. Continuum Mechanics.

An introduction to the mathematical foundations of continuum mechanics. Vectors and tensors, properties and basic operations. Kinematics of deformation. Conservation laws, thermodynamics. Stress. Constitutive equations. Elastic, viscous, and viscoelastic response. Linearization. Simple problems in finite and linear elasticity, and in Navier-Stokes flows. Creep and relaxation in linear viscoelasticity.

Fall	ENGN2210	S01	17089	MWF	10:00-10:50(14)	(W. Curtin)

ENGN 2220. Mechanics of Solids.

A unified introduction to the engineering mechanics of elastic, plastic, and time-dependent solid materials and structures. Stress and equilibrium. Kinematics of deformation, strain, and compatibility. Tensor representation and principal values. Principle of virtual work. Formulation of stress-strain relations in elasticity, plasticity, and viscoelasticity. Uniqueness. Extremum and minimum principles, including energy methods.

Spr	ENGN2220	S01	25514	MWF	10:00-10:50(03)	(W. Curtin)

ENGN 2260. Stress Waves in Solids.

Elastic wave propagation theory with an introduction to waves in viscoelastic and plastic media. Waves in unbounded media, half spaces, layered media, plates, rods, and beams. Solutions to transient problems. Relation of theory to experiment. Stress waves and fracture.

Fall	ENGN2260	S01	18537	F	3:00-5:30(11)	(P. Guduru)

ENGN 2350. Data-Driven Design and Analysis of Structures and Materials.

This course provides introductory knowledge on data-driven design and analysis of structures and materials. This course will try to balance theory and practice, such that the students become capable of understanding and using the methods in new scenarios. The first half of the course focuses on introducing machine learning from a probabilistic perspective, providing the foundations to understand current machine learning methods. The second part of the course focuses on applying machine learning to different engineering problems in solid mechanics.

Fall	ENGN2350	S01	18743	MWF	1:00-1:50(08)	(M. Bessa)

ENGN 2370B. Topics in Solid and Structural Mechanics.

Devoted to one or more advanced topics in solid and structural mechanics not covered in detail by the regular courses, such as: numerical methods in solid mechanics, theory of optimal design, shell structures and instability, or other topics of interest to the staff or visitors.

Spr	ENGN2370ES01	26247	MWF	1:00-1:50(06)		'To Be Arranged'

ENGN 2420. Kinetic Processes and Mechanisms in Materials Science.

Continuum and atomistic descriptions of diffusion in solids. Reactions involving surfaces and interfaces, including evaporation, adsorption, grain growth, and coarsening. Phase transformation kinetics, including nucleation, growth, solidification, spinodal decomposition, and martensitic transformations. Analysis of systems with multiple kinetic mechanisms (typical examples include oxidation, crystal growth, and sintering). Prerequisite: background in basic thermodynamics. Recommended: ENGN 1410 or 2410 or equivalent.

Spr	ENGN2420	S01	26264	MW	8:30-9:50(02)	(E. Chason)

ENGN 2450. Exchange Scholar Program.

Fall	ENGN2450	S01	16568	Arranged		'To Be Arranged'

ENGN 2502. 3D Photography.

In 3D Photography, cameras and lights are used to capture the shape and appearance of 3D objects represented as graphical models for applications such as computer animation, game development, electronic commerce, heritage preservation, reverse engineering, and virtual reality. This course covers 3D capture techniques and systems, surface representations and data structures, as well as methods to smooth, denoise, edit, compress, transmit, simplify, and optimize very large polygonal models. Instructor permission required.

Fall	ENGN2502	S01	18548	TTh	2:30-3:50(12)	(G. Taubin)

ENGN 2520. Pattern Recognition and Machine Learning.

This course will cover fundamental concepts in pattern recognition and machine learning. We will focus on mathematical formulations and computational methods that are broadly applicable. Topics include supervised learning, parametric and non-parametric models, decision theory, bayesian inference, dimensionality reduction, clustering, feature selection, generalization bounds, support vector machines and neural networks. We will consider motivating applications in computer vision, signal processing, medical diagnostics, and information retrieval.

Spr	ENGN2520	S01	25519	TTh	2:30-3:50(11)	(P. Felzenszwalb)

ENGN 2530. Digital Signal Processing.

This course teaches the principles and the practical methods for processing real-world signals on a computer. The vital need to understand the effects from sampling and quantization is emphasized. Modern methods for designing digital filters and their use are introduced. Discrete-time and DFT properties, fast DFT algorithms (FFT), and spectral analysis are important further topics. Both stochastic and deterministic signals are differentiated and methods for processing them are introduced. Current methods for A/D conversion are explained. Mathematical homework, MATLAB reinforcement exercises, and an open-ended DSP task are all used to build competence.

Spr	ENGN2530	S01	25520	TTh	1:00-2:20(08)	(G. Taubin)

ENGN 2560. Computer Vision.

An interdisciplinary exploration of the fundamentals of engineering computer vision systems (e.g., medical imaging, satellite photo interpretation, industrial inspection, robotics, etc.). Classical machine vision paradigms in relation to perceptual theories, physiology of the visual context, and mathematical frameworks. Selections from Gestalt psychology, Gibsonian approach primate visual pathways, edge-detection, segmentation, orientation-selectivity, relaxation-labeling, shading, texture, stereo, shape, object-recognition.

Spr	ENGN2560	S01	25521	W	3:00-5:30(10)	(B. Kimia)

ENGN 2590. Semiconductor Devices.

An introduction to semiconductor device physics and basic electronic properties of semiconductors, including junctions, heterojunctions and fundamental device building blocks. Current and proposed semiconductor devices: field effect transistors, bipolar transistors, quantum-effect devices, and optoelectronic devices. A brief fabrication lab will introduce junction fabrication in the cleanroom. Advanced topics, such as heterojunction bipolar transistors and silicon-on-insulator FETs, included in the graduate version.

Spr	ENGN2590	S01	25498	MWF	2:00-2:50(07)	(A. Zaslavsky)

ENGN 2605. Image Understanding.

Image Understanding is an Artificial Intelligence core technology that is experiencing explosive growth; it is central to medical image analysis, industrial inspection, image enhancement, indexing into pictorial and video

databases, robotic vision, drone navigation and mapping, face recognition, image compression, etc. This graduate-level course covers theoretical underpinnings of this field and includes a series of practical MATLAB image processing projects. Knowledge of Fourier Transform is required; ENGN 1570 is recommended.

Fall ENGN2605 S01 17071 W 3:00-5:30(10) (B. Kimia)

ENGN 2625. Optical Microscopy: Fundamentals and Applications.

This course is intended to provide an introduction to optical microscopy for engineering and science students. Topics ranging from basic brightfield and fluorescence microscopy to Nobel-prize winning advanced optical microscopy methods will be discussed. The course will also provide students with the opportunity to acquire hands-on training on various microscopy platforms including the confocal laser scanning microscope and the multiphoton microscope, as well as basic sample preparation.

Fall ENGN2625 S01 18252 MW 10:00-11:20 (K. Toussaint)

ENGN 2701. Data Analytics.

Acquiring, enriching, and analyzing data for business analytics is an essential use case for technology business enterprises. This course helps prepare students for management roles that oversee the transformation of business data into actionable information, including how to communicate insights through visualizations. Such roles are ubiquitous in modern enterprises that utilize data analytics, business intelligence, and data science teams. The course opens with a series of interlocking frameworks that businesses use to take a problem—any problem—and break it down into components that can be analyzed with the use of diverse data sources and analytical approaches. Students then practice using two widely available tools—Tableau Desktop and Excel—to tackle these analyses and solve problems. This work teaches students to integrate and transform data, analyze the data, and create appropriate visualization and summaries of the results and insights.

Fall ENGN2701 S01 18420 Arranged (A. Braff)

ENGN 2730. Chemical and Environmental Thermodynamics.

This is a fundamentals course targeted at first or second-year graduate students in chemical engineering, environmental engineering or related fields. The course reviews and expands on the principles of chemical thermodynamics: equilibrium criteria, fundamental relations, derivation of property relations, phase equilibrium, mixture behavior, intermolecular interactions, and reaction networks. The course will also cover the thermodynamic aspects of electrochemical systems, surface phenomena, complex molecules, and self-assembly, and will incorporate an introductory entryway module on statistical mechanics. The fundamental principles will be illustrated through application to current research topics in chemical technologies and environmental systems. Designed for students with some prior thermodynamics coursework. Undergraduates with thermodynamic background may enroll with instructor permission.

Fall ENGN2730 S01 18721 TTh 9:00-10:20(05) (R. Hurt)

ENGN 2735. Vibration of Mechanical Systems.

This course will focus on the vibration characteristics of mechanical systems. Topics will include: analysis of free and forced single degree-of-freedom linear oscillators, vibration control and isolation, multiple degree-of-freedom and continuous systems, and introduction to nonlinear oscillations. Relevant analytical and numerical methods useful for modeling and analysis of vibrating systems will be discussed throughout. Students will be expected to do some numerical calculations on a computer.

Fall ENGN2735 S01 17076 TTh 9:00-10:20(05) (D. Harris)

ENGN 2770. Atomistic Reaction Engineering.

Topics include electronic structure calculations, molecular dynamics, potential energy surfaces, thermodynamic connections, scaling and free-energy relations, surface reactivity, rate theory, electrocatalytic concepts, and applications of machine-learning to atomistic calculations. Students will have flexibility to pursue research directions of interest through project- and literature-based work. All software employed in the course is open-source, so students can continue to use these tools without license after the course completes. This course is intended for graduate students or advanced undergraduates. A background in thermodynamics is required. Experience in quantum and statistical mechanics as well as computing is useful, but not necessary.

Fall ENGN2770 S01 17928 TTh 10:30-11:50(13) (A. Peterson)

ENGN 2800. Critical Challenge Project.

The Critical Challenge Project (CCP) is an integrative experience in the Master's in Technology Leadership curriculum. Through the project, students address a critical organizational challenge, drawing from their own professional experiences, their MTL coursework, and career aspirations. In collaboration with their CCP mentors and peers, students analyze their chosen critical challenges from multiple perspectives, with insights developed throughout the program, and create comprehensive plans for addressing the challenges.

Fall ENGN2800 S01 18255 Arranged (L. Leventon)

ENGN 2810. Fluid Mechanics I.

Formulation of the basic conservation laws for a viscous, heat conducting, compressible fluid. Molecular basis for thermodynamic and transport properties. Kinematics of vorticity and its transport and diffusion. Introduction to potential flow theory. Viscous flow theory; the application of dimensional analysis and scaling to obtain low and high Reynolds number limits.

Fall ENGN2810 S01 17096 MWF 11:00-11:50(16) (M. Rodriguez)

ENGN 2820. Fluid Mechanics II.

Introduction to concepts basic to current fluid mechanics research: hydrodynamic stability, the concept of average fluid mechanics, introduction to turbulence and to multiphase flow, wave motion, and topics in inviscid and compressible flow.

Spr ENGN2820 S01 25525 MWF 11:00-11:50(04) (M. Martinez Wilhelmus)

ENGN 2830. High Reynolds Number Flows.

We explore the fluid mechanics of aerospace and energy systems in this course. Aerospace fluid dynamics are dynamics of flows involving air. Such flows have variable density over space and time. They can expand to take the shape of their volume or be compressed into an enclosing, confined space. These flows surround (air), inflate (air in lungs), compress (impact), hold/push (drag/thrust), and levitate (flight) us. We investigate flows to design and take advantage of their behavior for engineering solutions (e.g., extracting energy). You will learn to identify a fluid and develop the mathematical framework (differential equations) that describe compressible flow motion/dynamics. We study fundamental thin airfoil, wing, and boundary layer theory. We will consider extracting energy from air flows using wind turbines. We conclude by surveying advanced topics involving supersonics, hypersonics, and space propulsion.

Spr ENGN2830 S01 25502 MWF 11:00-11:50(04) (M. Rodriguez)

ENGN 2910G. Topics in Translational Research and Technologies.

To improve human health, engineering and scientific discoveries must be explored in the context of application and translated into human/societal value. Translational research is creating a fundamental change in the way basic science and engineering research has operated for decades, breaking down the literal and figurative walls that separate basic scientists/engineers and clinical researchers. Such discoveries typically begin at "the bench" with basic research—and in the case of medicine—then progress to the clinical level, or the patient's "bedside." This seminar course will utilize case studies to demonstrate to students how the translational research unfolds. Lectures will be delivered by clinicians, medical researchers, engineers, and entrepreneurs, with case studies focused on topics ranging from value creation, IRB, HIPAA, FDA approval, etc.

Spr ENGN2910CS01 25526 F 3:00-5:30(15) (A. Tripathi)

ENGN 2910S. Cancer Nanotechnology.

This course will integrate engineering and biomedical approaches to diagnosing and treating cancer, particularly using nanotechnology and BioMEMS. Topics will include the extracellular matrix and 3D cell culture, cancer cell invasion in microfluidic devices, heterotypic interactions, cancer stem cells and the epithelial-mesenchymal transition, angiogenesis and drug targeting, circulating tumor cells and biomarker detection, as well as molecular imaging and theranostics. Recommended coursework includes ENGN 1110 (Transport and Biotransport), ENGN 1210 (Biomechanics) and ENGN 1490 (Biomaterials) or equivalents

Fall ENGN2910S01 17689 MWF 1:00-1:50(08) (I. Wong)

ENGN 2911P. Fate and Transport of Environmental Contaminants.

Physical, chemical and biological processes governing the fate and transport of contaminants in the environment. Topics to be covered include solute transport, sorption processes, mass transfer, non-aqueous phase liquid (NAPL) entrapment and dissolution, abiotic and biotic transformations. A portion of the course will involve the use of analytical and numerical models to assess the impact of coupled processes on contaminant fate and transport.

Spr ENGN2911FS01 25527 TTh 9:00-10:20(05) (L. Abriola)

ENGN 2911R. Analytical Modeling for Biomechanical and Biomedical Systems.

Students will develop fundamental understanding of important statistical, physical and mathematical modeling methods for biomedical engineering applications. Topics covered will include factorial design and analysis of experiments, modeling of infectious disease spread and dynamics, drug delivery, and cell and tissue mechanics. Students will learn statistical methods, factorial design of experiments, transport models, numerical methods, nonlinear and time dependent response, soft material modeling and applications of these methods in the biomedical systems. Students will also gain experience in critical analysis of scientific literature and effective oral and written communication. Prerequisite: APMA 0350 or a similar math background or instructor permission.

Fall ENGN2911FS01 17686 TTh 9:00-10:20(05) (V. Srivastava)

ENGN 2912B. Scientific Programming in C++.

Introduction to the C++ language with examples from topics in numerical analysis, differential equations and finite elements. As a prerequisite, some programming knowledge, e.g., MATLAB projects. The course will cover the main C++ elements: data types; pointers; references; conditional expressions; streams; templates; Standard Template Library(STL); design and debugging techniques.

Fall ENGN2912ES01 17098 MW 5:30-6:50 (D. Moreno)

ENGN 2912R. Implantable Devices.

This course will expose students to topics across the electrical and biological sciences through lecture, design, and laboratory exercises. Students will learn basic governing concepts of implantable device design, including those of tissue interfaces, power delivery, data transmission, hermetic packaging and biocompatibility, and in vivo evaluation through appropriate animal models including design of surgical approach. Teams will be formed early in the course and maintained throughout the semester. Successful teams will invent, design, build, and implant their unique device. Teams will have access and exposure to the Technology Ventures Office through guest lectures and individual meetings.

Spr ENGN2912FS01 25937 TTh 1:00-2:20(08) (D. Borton)

ENGN 2912U. Coordinated Mobile Robotics.

Mobile robotics has made a large impact in our lives, from how we satisfy our consumerism to how we fight wars. Thousands of warehouse robots autonomously zip around each other in a highly structured and specialized environment that makes coordination look easy, while military robots are often teleoperated by more than one person, making coordination difficult. Moving beyond highly controlled scenarios presents many challenges. Most importantly, mobile robots will interact in complex environments with other robots and people. How can we ensure robots safely do what we want them to do? What are the ethical ramifications of multirobot systems? In this course, we study the past, present, and future of coordinated mobile robotics, including a discussion of ethics. The majority of this course is a seminar-style survey of issues and approaches for control and coordination in multi-robot systems.

Fall ENGN2912LS01 17100 MW 8:30-9:50(09) (N. Ayanian)

ENGN 2920G. Creating Economic and Social Value from Your Science or Engineering Research.

As a graduate student or undergraduate researcher, the primary output of your research is new knowledge and research publications. But is there a more direct way of creating value, through licensing and commercialization to a company, through creating products or services, or through the creation of a new venture? And how can we assess the potential social impact? We will together examine some currently emerging science to establish the methods. Thereafter you will examine the science and technology within your own research group in order to discover value, value that you may possibly be able to exploit. Students must be

actively participating in research. Undergraduate students must also be undertaking research (instructor permission is required). Graduate students are requested to contact the instructor when registering.

Fall ENGN2920CS01 17102 Th 4:00-6:30(04) (A. Kingon)

ENGN 2920H. Materials and Interfaces for Energy Storage Devices.

This is an introductory course that combines materials science and electrochemistry, emphasizing thermodynamics, charge transfer kinetics, interface structures, and ionic mass transport mechanisms in both liquid and solid materials. This course integrates the atomistic point of view with the macroscopic concepts in electrochemistry and energy storage devices. Examples of various battery and fuel cell technologies will be presented. An emphasis is placed on mechanistic understanding, quantitative analysis, and mathematical models of electrochemical systems. The course is intended to support graduate students conducting research involving electrochemical technologies.

Spr ENGN2920FS01 25531 TTh 2:30-3:50(11) (Y. Qi)

ENGN 2930. Atomistic Modeling of Materials.

This class describes the fundamentals of statistical mechanics with a focus on both traditional analytic methods and modern atomistic simulations methods. The class is divided in two parts. (i) Techniques used to calculate interactions at the atomic level are first covered, from simple interatomic potentials to quantum mechanical first-principles methods. (ii) Simulations techniques to sample atomic degrees of freedom for obtaining macroscopic quantities are then discussed, such as Monte Carlo and Molecular Dynamics. The tools presented in class are illustrated with ongoing examples that illustrate how these methods work in concert. Enrollment limited to 40 graduate students.

Spr ENGN2930 S01 25533 M 3:00-5:30(13) (A. Van De Walle)

ENGN 2960. Experiential Learning in Industry (ELI).

This course will immerse students for up to 6 months in a corporate environment to learn first-hand about industry careers in engineering and technology. Corporate environments may include design, development, simulation, testing, technical documentation, consulting, investment, patent law, licensing, compliance, and/or regulations. Students will work as employees for a host company and carry out company-defined activities.

Fall ENGN2960 S01 18720 Arranged (C. Kofron)

ENGN 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall ENGN2970 S01 16569 Arranged 'To Be Arranged'
Spr ENGN2970 S01 25231 Arranged 'To Be Arranged'

ENGN 2980. Special Projects, Reading, Research and Design.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ENGN 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall ENGN2990 S01 16570 Arranged 'To Be Arranged'
Spr ENGN2990 S01 25232 Arranged 'To Be Arranged'

English**ENGL 0100A. How To Read A Poem.**

It is difficult to get the news from poems/ yet men die miserably every day/ for lack/ of what is found there. Poet William Carlos Williams captures this course's focus on the special ways that poetic language represents and gives shape to human experience. Organized around concepts and practical skills, the readings cross historical and geographical boundaries.

Spr ENGL0100AS01 25795 TTh 10:30-11:50(09) (M. Rabb)

ENGL 0100U. Serial Fictions.

A study of serial and serialized fictional narratives from the nineteenth century the present-- dime novels, serial genre fictions, literary novels comprised of chapters initially published as short stories, radio and film serials, television programs old (*The Naked City*, *Hawaii-Five O*), newer (*The Wire*, *Sex in the City*), and new (*Americans*), podcasts, and video games (*Legend of Zelda*).

Spr ENGL0100LS01 25876 MWF 11:00-11:50(04) (D. Nabers)

ENGL 0100Y. Do the Right Thing.

An examination of literary works as developing our modern framework of moral values, along the way taking up questions of temptation, corruption, punishment, redemption, and responsibility. We will start with Christian allegorical texts (Dr. Faustus and *Pilgrim's Progress*), complicate the picture with 19th century psychological fiction, and conclude with some masterpieces of art cinema.

Fall ENGL0100YS01 17235 MWF 2:00-2:50(01) (B. Parker)

ENGL 0101F. American Realism.

What do we mean when we call a novel realistic? When did the term first start being used, and why? This class attempts to answer these questions by studying the emergence of realism as the dominant literary form in the late nineteenth century, reading the work of writers such as Henry James, Thomas Hardy, Stephen Crane, Edith Wharton, and Charles Chesnutt. Our aim will be to develop a working definition of realism, and to understand why it proved such an appealing genre. In the process we will touch upon some of the major intellectual and social developments of the period, such as Darwin's theory of evolution, Freud's theory of the unconscious, the rise of the mass media, the triumph of consumerism, mass immigration, and the system of Jim Crow segregation.

Fall ENGL0101FS01 17165 MWF 10:00-10:50(14) (S. Burrows)

ENGL 0101G. Bad, Mad, and Sad: Literatures of Misbehaving Femmes.

This course will explore how representations of mischievous, melancholic, and "mad" femmes are shaped by their racial and class status. We may read authors such as Harriet Jacobs, Nella Larsen, Kanai Mieko, Ottessa Moshfegh, Jamaica Kincaid, Jean Rhys, and others. Films may include works by Sofia Coppola, Pedro Almodóvar, Martine Syms, and Luca Guadagnino.

Fall ENGL0101GS01 18022 MWF 1:00-1:50(08) (D. Ramirez-D'Oleo)

ENGL 0150S. The Roaring Twenties.

This course examines U.S. culture of the 1920s, with particular attention to phenomena that came to be mythologized as the "roaring twenties"—flappers, movie culture, literary and cultural innovation, primitivism and exoticism. We will read fiction and some poetry in the context of movies, publicity, and advertising. Class discussion will focus on analyzing texts with an attention to language and form, as well as connecting these texts to their cultural contexts. Enrollment limited to 19 first-year students.

Spr ENGL0150SS01 20100 TTh 9:00-10:20(05) (T. Katz)

ENGL 0151H. Literature and the Sea.

Stories begin with the sea: Jason and the Argonauts, Sinbad and the Seven Seas, Odysseus trying to sail home. Modern narrative, in turn, finds one of its crucial settings on board ships: Ahab's quest to kill the white whale in *Moby Dick*, Jim's crisis of self in *Lord Jim*. This class reads these works in the context of a number of other texts set at sea, the place of 'tall tales,' of adventure, sometimes of terror, but also of industrial labor, modern commerce, and racial conflict. Our aim will be to explore how fiction works both on the level of individual sentences and paragraphs and on the level of narrative, character, and plot.

Spr ENGL0151HS01 26648 TTh 10:30-11:50(09) (S. Burrows)

ENGL 0151J. Introduction to the Age of Dickens.

This course will study the Victorian period through the lens of the writer with whom it is most closely associated in the popular imagination: Charles Dickens. We will read a selection of Dickens's writing and consider them in the context of important developments during this time, including the emergence of modern city life, capitalism, and serial and popular literature.

Spr ENGL0151JS01 25645 TTh 10:30-11:50(09) (K. McLaughlin)

ENGL 0202B. What Monks Want: Asceticism and Austerity Across the Global Anglophone.

Today, the word "austerity" is strongly associated with harsh economic policies that force people to live with less. But what if a person voluntarily embraces an austere lifestyle? In this course, we will consider the figure of the ascetic—an individual who leads a life of severe self-discipline and restraint—across an expansive range of literature from the Global Anglophone, such as Frankenstein, *In the Castle of My Skin*, *Nervous Conditions*, *The Inheritance of Loss*, and *Normal People*. Why would an individual place such demanding restrictions on their everyday life, and

what new perspectives could the extremities of asceticism provide on our own lives?

Fall ENGL0202BS01 17776 MWF 9:00-9:50(09) (A. Jain)

ENGL 0202C. Experiments in Asian and Asian Diaspora Literature and Culture.

This course introduces students to textual, visual, and filmic experiments by Asian and Asian diaspora writers and artists. Instead of reading memoirs and realist novels, we will consider how these artists explore forms like short stories, performance, graphic novels, and films, as well as genres like science fiction, horror, mystery, and romance. This course's focus on speculative and unsettling forms of storytelling will expand our understanding of Asian and Asian diaspora artistry and recast themes of immigration, alienation, belonging, grief, memory, and identity. "What if?" is an important question these storytellers ask; "What if" is a type of creativity we will investigate by close reading these recent experiments at the limits of storytelling. Texts include short and feature-length films and fiction by Haruki Murakami, Karen Tei Yamashita, Kazuo Ishiguro, Ling Ma, and Charles Yu. No prerequisites.

Fall ENGL0202CS01 17432 MWF 1:00-1:50(08) (A. Kelly)

ENGL 0202D. Poetic Justice: Literature on Colonialism.

How have dreams of freedom been written in the 20th and 21st centuries? This course explores writing on unequal relations, relations of exploitation and duress, under the contemporary global and racial order. We will consider how writers address problems of reconciliation, reparation, and equality in a colonial and capitalist society, and how they prepare new revolutionary idioms for our time. Primary texts include a balance of prose and poetry (Jamaica Kincaid, J. M. Coetzee, NoViolet Bulawayo, Derek Walcott, Layli Long Soldier, Dionne Brand, Theresa Hak Kyung Cha), plus a graphic novel (Thi Bui) and a film (Saint Omer, dir. Alice Diop).

Fall ENGL0202DS01 17433 MWF 12:00-12:50(15) (T. Le)

ENGL 0202E. Memory and the Literary Imagination: Conceptions of Remembering from Shakespeare to the Present.

What cause do we have to remember? How humans engage with and conceive of the past has been the focus of philosophical and literary study for thousands of years. Whether conceptualized as a form of identity formation, a source of motivation, or an opportunity for reconciliation, memory is deeply integrated into how we think. Throughout this course, we will discuss the influences of memory on individual and collective levels by studying an assortment of poetry, novels, drama, and film. Readings will include texts by William Shakespeare, Virginia Woolf, Toni Morrison, Ilya Kaminsky, and Emily St. John Mandel. No previous experience with literary scholarship necessary.

Spr ENGL0202ES01 26105 MWF 12:00-12:50(01) (G. Clawson)

ENGL 0202F. We the People: American Literatures of Community.

The Preamble begins thus: "We the People of the United States ..." How was this "we" conceptualized at the nation's birth, and how has it changed? How do we imagine and revise the collectivity of the national, racial, cultural, sexual, and social "we" in the 21st century? This course explores what it means to be an individual and inhabit the collective "we" in American literatures that stage the question of the self versus/and/or/with/against/through the communal identity. Some authors include Eugenides, Faulkner, Emerson, O'Brien, Morrison, Chang-rae Lee, Silko, Paul Beatty, Alexis Bechdel, and Craig Santos Perez. No prerequisites.

Spr ENGL0202FS01 25799 MWF 2:00-2:50(07) (C. Choi)

ENGL 0202G. Literatures of Racial Capitalism.

What is racial capitalism? This question will frame this course as a project of reading toward the entanglement of literatures with race and capital. With particular attention to problems of genre and history, we explore literary representations of what might be called racial capitalism in the spaces of the colony, the slave ship, the plantation, and the modern workplace. Works by Morrison, Melville, Faulkner, and Butler, as well as Marx, Robinson, Smallwood, and Du Bois. No prerequisites required.

Spr ENGL0202GS01 26587 MWF 1:00-1:50(06) (C. Browne)

ENGL 0202H. The Genesis of Doubt: Skepticism and Film Noir.

Film noir is an enigmatic genre. This course studies film noir (a 1940-50s American film phenomenon with a French name) within an international and interdisciplinary context. Taking inspiration from the stylistically innovative texts we will examine, our approach will privilege a few

unconventional angles, including Shakespearean tragedy, modernist fiction, contemporary global cinema, and the philosophical tradition of skepticism.

Spr ENGL0202HS01 26485 MWF 10:00-10:50(03) 'To Be Arranged'

ENGL 0300M. Medieval Gender.

In this course, we will examine the multiplicity of ways that gender and sexuality are portrayed in the literature of medieval Britain and interlinked cultural regions. How do medieval texts depict gender categories, relations of desire and violence, intersectional subject positions, and anxieties about sex that remain alive today? What are some currents of fluidity, peculiarity, and rebellion in early ideas about gender and sexuality? Texts may include the Roman de Silence, the Lais of Marie de France, and the Book of Margery Kempe. No previous experience with medieval literature required.

Fall ENGL0300MS01 10303 MWF 1:00-1:50(08) (M. Min)

ENGL 0310A. Shakespeare.

We will read a representative selection of Shakespeare's comedies, tragedies, histories, and romances, considering their historical contexts and their cultural afterlife in terms of belief, doubt, language, feeling, politics, and form. Students should register for ENGL 0310A S01 and may be assigned to conference sections by the instructor during the first week of class.

Fall ENGL0310AS02 10138 MWF 2:00-2:50(01) (C. Scozzaro)

Spr ENGL0310AS01 25565 MWF 2:00-2:50(07) (J. Kuzner)

ENGL 0310Q. Why Before 1700? Literature before Literature.

Why does the English department require concentrators to take one course covering writing before the year 1700? What's so magical about 1700? What's so special about literature before that date? The word "literature" in its modern sense doesn't even emerge until the 18th century (at the earliest). So is what we're reading when we read pre-1700 material even literature? We'll survey some writing produced—wait for it—before 1700, consider why we're doing so and whether such a requirement makes sense, and read some material about the function and value of the study of literature in English in the first place. Authors may include William Shakespeare, Anne Bradstreet, John Milton, and Aphra Behn.

Spr ENGL0310CS01 25430 MWF 10:00-10:50(03) (J. Egan)

ENGL 0500P. The Examined Self: Lives of the Soul.

This course examines a crucial tradition in American letters and culture: the literature of self-examination and the spiritual quest. Each work focuses in some way on questions of identity and identification: We will be reading a wide range of authors and genres—spiritual autobiography, short fiction, the novel, conversion narratives, confessions, and lyric and epic poetry. Limited to 30 students.

Fall ENGL0500PS01 16812 TTh 9:00-10:20(05) (P. Gould)

ENGL 0511D. Austen, Eliot, James.

A survey of the three English novelists who turned the novel into a vehicle for analysis, representation of consciousness, social judgment, and ethical questioning. Major works to be read: *Pride and Prejudice*, *Mansfield Park*, *Daniel Deronda*, and *The Portrait of a Lady*. Particular attention to be paid to questions of voice and the self-reflective capacities of the novel form.

Fall ENGL0511DS01 17234 F 3:00-5:30(11) (B. Parker)

ENGL 0700E. Postcolonial Literature.

From about the end of World War II, the period now known as the "decolonization era" witnessed the gaining of political independence by many countries that used to be under British colonial rule. In this course we will read across a range of genres—fiction, drama, poetry, travel writing, and cultural criticism—by Anglophone writers from Africa and the Caribbean. Issues will include: cultural-nationalism, diaspora, globalization, and generational shifts. How do the writers explore such categories as class, gender, nation, and race? What interactions do the texts imagine between individual desires, on the one hand, and collective aspirations, on the other? Authors will include J. M. Coetzee, Saidiya Hartman, George Lamming, V. S. Naipaul, Jamaica Kincaid, Jean Rhys, Wole Soyinka, Derek Walcott, and Zoë Wicomb. Enrollment limited to 30.

Fall ENGL0700ES02 16917 TTh 9:00-10:20(05) (O. George)

ENGL 0700V. Introduction to Post-War British Fiction.

This course is an introduction to the study of 20th century literature in English. We consider central terms of and approaches to literary criticism by reading some of the most important British writers of the last fifty years.

We will also take into account theories of culture, ideology and nationhood, and attempt to bring into focus a Britain defined as much by its ways of looking as by historical and geopolitical situation. Readings include Kingsley Amis, Greene, McEwan, Zadie Smith, Spark, Kelman, Banville, Naipaul and Sebald. Enrollment limited to 30.

Fall ENGL0700VS01 16964 TTh 10:30-11:50(13) (T. Bewes)

ENGL 0710V. Death and Dying in Black Literature.

How is death represented in black literature as a topic and as a figure of genre? Which theoretical ideas help us think about the intertwining of blackness and death? How do notions of gender and sexuality inform this thinking? This course will explore works from the twentieth and twenty-first centuries to consider the scope of black literary imaginings of death.

Spr ENGL0710VS01 25693 TTh 2:30-3:50(11) (K. Quashie)

ENGL 0710Z. American Literature and the Constitution.

A study of the interactive relations between US literary constitutional and literary history, with a special emphasis on how American constitutional discourses and American writers have framed and conceived of the interplay between civil rights, racial equality, and economic privilege.

Fall ENGL0710ZS01 18786 TTh 1:00-2:20(06) (D. Nabers)

ENGL 0800T. Introduction to Black Literary Theory.

This course will explore key theoretical moves in black literary studies since about 1970. The intent is to think historically and conceptually about the field of black literary studies by exploiting and refusing the distinctions between "theory" and "blackness." Our work might include studying the following areas: archive, pessimism, feminism, psychoanalysis, aesthetics, phenomenology, affect/new materialism, queer, disability, performance. In sum, this course is a chance to consider blackness as a point of departure for literary study, and perhaps the reverse—literary study as an engagement with thinking conceptually about blackness.

Fall ENGL0800TS01 16966 MWF 1:00-1:50(08) (K. Quashie)

ENGL 0800V. Marxist Literary Theory.

Introduction to Marxist theory and literary theory, a powerful tool for cultural analysis. No background required. We will cover concepts in Marx's own writings such as ideology, commodity fetishism, dialectical materialism. We will also read texts by Georg Lukács, Raymond Williams, and Fredric Jameson on concepts including: reification, hegemony, cognitive mapping. Other authors may include: Pierre Macherey, Terry Eagleton, Gayatri Spivak, Jacques Rancière, Slavoj Žižek, Carolyn Lesjak, and Anna Kornbluh.

Spr ENGL0800VS01 25443 Th 4:00-6:30(17) 'To Be Arranged'

ENGL 0900. Critical Reading and Writing I: The Academic Essay.

An introduction to university-level writing. Students produce and revise multiple drafts of essays, practice essential skills of paragraph organization, and develop techniques of critical analysis and research. Readings from a wide range of texts in literature, the media, and academic disciplines. Assignments move from personal response papers to formal academic essays. Enrollment limited to 17. Banner registrations after classes begin require instructor approval. S/NC.

Fall ENGL0900 S01 10006 MWF 12:00-12:50(15) (A. Jackson)

Fall ENGL0900 S03 10008 TTh 10:30-11:50(13) (L. Stanley)

Fall ENGL0900 S04 10296 MWF 9:00-9:50(09) (C. Browne)

Fall ENGL0900 S05 10297 MWF 1:00-1:50(08) (C. Choi)

Fall ENGL0900 S06 18754 MWF 10:00-10:50(14) (G. Clawson)

Spr ENGL0900 S01 20154 TTh 1:00-2:20(08) (A. Jackson)

Spr ENGL0900 S02 20260 MWF 9:00-9:50(02) 'To Be Arranged'

Spr ENGL0900 S03 20261 MWF 11:00-11:50(04) 'To Be Arranged'

Spr ENGL0900 S04 20262 MWF 12:00-12:50(01) 'To Be Arranged'

ENGL 0930. Introduction to Creative Nonfiction.

Designed to familiarize students with the techniques and narrative structures of creative nonfiction. Reading and writing focus on personal essays, memoir, science writing, travel writing, and other related subgenres with an emphasis on reading authors with a diversity of racial and ethnic identities. May serve as preparation for any 1000-level nonfiction writing course. Writing sample may be required. Enrollment limited. Banner registrations after classes begin require instructor approval. S/NC.

Fall	ENGL0930	S01	10009	TTh	9:00-10:20(05)	(K. Schapira)
Fall	ENGL0930	S02	10010	TTh	9:00-10:20(05)	(E. Hardy)
Fall	ENGL0930	S03	10011	TTh	6:40-8:00PM(02)	(G. Talusan)
Fall	ENGL0930	S05	10298	MWF	12:00-12:50(15)	'To Be Arranged'
Fall	ENGL0930	S06	10299	MW	8:30-9:50(09)	(R. Ward)
Spr	ENGL0930	S01	20074	MWF	1:00-1:50(06)	(M. Stewart)
Spr	ENGL0930	S02	20075	MWF	11:00-11:50(04)	(K. Schapira)
Spr	ENGL0930	S03	20076	MWF	12:00-12:50(11)	(E. Hardy)
Spr	ENGL0930	S05	20078	TTh	9:00-10:20(05)	(R. Ward)

ENGL 1030G. Backstory.

Everything has a backstory—every object, event or idea. In this workshop-based course we will explore the archives at Brown, RISD and the Rhode Island Historical Society and write about what we find. Expect field trips, time travel, encounters with interesting objects, readings from David Foster Wallace, John McPhee and Katherine Schultz, and in-class prompts to get you going. Enrollment limited to 17. Writing sample may be required. Banner registrations after classes begin require instructor approval. S/NC.

Spr	ENGL1030CS01	20101	MWF	10:00-10:50(09)	(E. Hardy)

ENGL 1030H. Black Popular Culture and Social Movements.

As a site of critical inquiry, Black popular culture provides valuable insight into the ways oppressed people (and allies) identify and mobilize against unjust power structures in society. We will begin with immersion experiences with primary and secondary resources that reveal how "voices on the margins" assert agency, identity, and community. Enrollment limited to 17. No pre-requisites. Writing sample may be required. Banner registrations after classes begin require instructor approval. S/NC.

Spr	ENGL1030HS01	26652	TTh	10:30-11:50(09)	(A. Jackson)

ENGL 1030J. Editing Theory and Practice.

How does a text become a text? What forces govern how the text appears and sounds? What are the roots of the idea of the text? Of the author? As a textual editor, what is your role and relationship to the texts and authors you edit? In this course, we'll read theories of the text, the edition, the role of the editor, the idea of "error" and "correction," and their histories, including connections to hygiene and eugenics, conflicts over descriptivism and prescriptivism, ideas of authoring/authority and unique composition and copyright, among other concepts. Students will practice basic editing techniques as well. Authors include G. Thomas Tanselle, Fredson Bowers, Jerome McGann, Debra Tannen, Joseph Grigely, Paul Ricoeur, Roland Barthes, and Stanley Fish. This course is a pre-requisite for ENGL1190Y: Editing as Revision.

Fall	ENGL1030JS01	16965	MW	11:00-12:20(16)	(E. Hipchen)

ENGL 1050A. Narrative.

This course offers a broad exploration of the many kinds of essays you can write in creative nonfiction. We will be looking at how authors structure their pieces and the range of narrative techniques they often use. You can expect workshops, in-class prompts and readings by Jamaica Kincaid, John McPhee, David Foster Wallace, Annie Dillard, David Sedaris and others. Enrollment limited to 17. Writing sample required. Banner registrations after classes begin require instructor approval. S/NC.

Fall	ENGL1050AS01	10124	TTh	2:30-3:50(12)	(E. Hardy)

ENGL 1050B. True Stories.

This class will allow confident writers to explore and develop their creative nonfiction writing. We'll focus on two structures—nonfiction narratives and essays—with occasional forays into other forms. Students will work simultaneously on several small assignments and two larger, self-directed pieces. Readings will include cultural reportage, lyric memoir, science and nature writing, standard and hybrid essays. Enrollment limited to 17. Writing sample required. Banner registrations after classes begin require instructor approval. S/NC.

Spr	ENGL1050BS01	20096	MWF	9:00-9:50(02)	(K. Schapira)

ENGL 1050E. Sportswriting.

This course introduces students to the practice of sportswriting, including writing sports news, features, and columns. Readings will include works by Rick Reilly, Bill Simmons, Frank Deford, Karen Russell, Allison Glock, Tom Wolfe, Hunter S. Thompson, W.C. Heinz, and others. Students will develop skills in analyzing, researching, writing, revising, and

workshopping in the genre. Enrollment limited to 17. Writing sample required. Banner registrations after classes begin require instructor approval. S/NC.

Spr	ENGL1050ES01	20103	TTh	2:30-3:50(11)	(J. Readey)

ENGL 1050F. Line Work: Experiments in Short-Form Writing.

This class is based on the premise that to improve your writing, you need to write often. By responding to almost daily drills, you will develop a regular writing habit and explore a range of styles. We will take your most successful pieces through a series of workshops, helping you refine your work and ultimately build a writing portfolio. Enrollment limited to 17. Writing sample required. Banner registrations after classes begin require instructor approval. S/NC.

Fall	ENGL1050FS01	10103	TTh	10:30-11:50(13)	(M. Stewart)

ENGL 1050G. Journalism Practicum.

This course provides collegiality and skills development to students working in journalism, including editors at major campus publications—the Brown Daily Herald, the Independent, the Black Star Journal—and interns at external publications. Students submit reflections on their work, goals, and challenges. We workshop best practices, discuss the changing journalism landscape, and build skills for future work. Registration requires instructor approval. S/NC

Fall	ENGL1050CS01	10300	MWF	11:00-11:50(16)	(N. Lake)

ENGL 1050J. Multimedia Storytelling.

Through a series of short assignments, we will explore how the stories we tell are affected by the use of audio, visual, and performative tools. The course cumulates in a final project where each student will pursue a long-form story of their choice of subject and medium.

Enrollment limited to 12. Banner registrations after classes begin require instructor approval. S/NC.

Fall	ENGL1050JS01	10102	TTh	1:00-2:20(06)	(M. Stewart)

ENGL 1050O. Writing the Asian American Experience.

With a focus on narrative nonfiction by and about Asian Americans, this writing workshop is for anyone who wants to learn more about Asian American communities while practicing research skills and writing processes. Pre-requisites: ENGL 0930 or any 1000-level nonfiction writing course.

Spr	ENGL1050CS01	20105	MWF	11:00-11:50(04)	(G. Talusan)

ENGL 1050Q. Writing the Family.

"You must not tell anyone" writes Hong Kingston's auto-fictional narrator—and then a book of family secrets follows. This class examines how authors (authorized or not) use their families as subject matter, storying family and family life. Over the term, we'll work on developing a practical and theoretical ethics of family-writing while contextualizing and practicing writing nonfiction about the family. Enrollment limited to 17. No prerequisites. Writing sample required. Instructor permission required.

Fall	ENGL1050CS02	18633	MW	8:30-9:50(09)	(E. Hipchen)

ENGL 1050V. Writing Wonder, Joy and Awe.

How can we cultivate a sense of wonder amidst personal and societal challenges? Through close attention to the natural world, their own lived experiences, and the voices of others, students will write towards meaning and truth in personal essays that rely on research and reporting. With inspiration from Aimee Nezhukumatathil's *World of Wonders*, Ross Gay's *Inciting Joy*, Brian Doyle's *One Long River of Song: Notes on Wonder*, and other essayists, students will work alone and in a community of writers through the writing process to produce and publish an outward facing component such as a zine. Pre-requisites: ENGL 0930 or any 1000-level nonfiction writing course.

Fall	ENGL1050VS01	18840	TTh	2:30-3:50(12)	(G. Talusan)

ENGL 1050Z. Audio/Video Storytelling.

In what ways can you "write" nonfiction with sound? And images? "Audio/Visual Storytelling" is designed for students who are interested in writing for podcasting, radio, TV, web content, or any career involves communicating with audio, video, or multimedia. In the course, students might produce short, TikTok-style videos, podcasts, audio-narratives, serial-image pieces, or other forms of audiovisual storytelling that engage the world with nuance and depth. Both experienced and beginning audio and video storytellers are welcome. Working individually or in teams, students will learn how to write for the ear and capture engaging tape—to

use sound and image to create vivid scenes that are well paced and clear, and have satisfying narrative arcs. Writing sample and instructor approval required. S/NC

Spr ENGL1050ZS01 26579 TTh 2:30-3:50(11) (N. Lake)

ENGL 1051A. The Art of the Interview.

What makes for a compelling published and/or broadcasted interview? How do nonfiction writers make ethical use of interviews to craft powerful stories? What are the most common interviewing challenges and how might we overcome them? In this course we explore and practice interviewing as a central component in telling engaging nonfiction stories. You'll read, listen to, watch, and analyze interviews as you build your own skills, through conducting interviews of your own and using them to craft essays, narratives, and/or audio/video pieces. You'll workshop these assignments with your peers and contribute to a final course publication. In the process, we will discuss how conducting effective interviews--and even being an effective interview subject--may be relevant to work that students do after Brown. Writing sample and instructor permission required. S/NC.

Spr ENGL1051AS01 26695 TTh 9:00-10:20(05) 'To Be Arranged'

ENGL 1160P. Writing Climate, Writing Community.

By 2100, sea level rise is projected to make the Market St neighborhood in Warren, RI uninhabitable, and the town is beginning an ambitious plan for managed retreat. How can writers support them in telling stories of what the neighborhood has been--and shaping the story of the future of the town? Guided by faculty and community partners who are working writers and audio storytellers, town managers and planners, public health workers, and the residents of Market St themselves, students in this course will elicit, co-create, and present the story of Warren as it has been and as it is becoming, with the goal of creating a readable, hearable, and visible community archive, a documentation of the transition, and tools for shaping that transition as it moves forward.

Fall ENGL1160PS01 10302 W 3:00-5:30(10) (K. Schapira)

ENGL 1180R. Travel Writing: Personal and Cultural Narratives.

For the advanced writer. Helps students build skills in the growing genre of travel writing, including techniques for reading, composing, and revising travel pieces. Students will read the best contemporary travel writing in order to develop their own writing in areas like narrative, setting, characters, and voice. The course will feature interactive discussions, instructor conferences, and workshops. Prerequisite: ENGL 0930 or any 1000-level nonfiction writing course. Class list will be reduced to 17 after writing samples are reviewed during the first week of classes. Preference will be given to English concentrators. Banner registrations after classes begin require instructor approval. S/NC.

Fall ENGL1180RS02 16949 TTh 2:30-3:50(12) (J. Readey)

ENGL 1180Z. Healthcare Journalism.

How may nonfiction storytelling advance public understanding of health and healthcare? In this course students practice accurate, insightful, and human-centered narrative-writing about medicine, science, and health. You'll develop skills in reporting and writing for general audiences, crafting stories with depth of research and insight; evocative scenes and description; compelling voice; and clear, engaging sentences. You'll read and analyze articles by Atul Gawande, Linda Villarosa, Louise Aronson and other Pulitzer prize-winning writers. You'll contribute features to a course publication while receiving encouragement to publish more broadly. Writing sample and instructor approval required. S/NC

Fall ENGL1180ZS01 18853 MW 8:30-9:50(09) (N. Lake)

ENGL 1181B. Memoirs of Migration.

Through archival research, primary source interviews, and independent investigations, students will write about their family's histories of migration. Students will explore the meaning of identity, place, and belonging by reading nonfiction and memoirs by and about immigrants, refugees, and other people who have crossed borders.

Spr ENGL1181BS01 26691 MWF 2:00-2:50(07) (G. Talusan)

ENGL 1190S. Poetics of Narrative.

Narratives are everywhere, simply there, like life itself, Roland Barthes says; we structure our experiences with narratives that we either infer or create. We will read different literary genres to see how narratives work and what makes them poetic and read theoretical texts to understand narrative function and performance. We will write experimentally to

experience how stories are constructed. Pre-requisites: ENGL 0900, 0930, or any 1000-level nonfiction writing course. S/NC.

Fall ENGL1190SS01 18794 TTh 2:30-3:50(12) (L. Stanley)

ENGL 1190U. Nature Writing.

This course seeks to develop your skills as a sensitive reader and writer of the natural world. You will build a portfolio of revised work through a process of workshops, tutorials, and conferences, and engage in discussion of a range of written and visual narratives with reference to their personal, political, and ecological contexts. Writing sample required. Prerequisite: ENGL 0930 or any 1000-level nonfiction writing course. Class list will be reduced to 17 after writing samples are reviewed during the first week of classes. Preference will be given to English concentrators. S/NC.

Fall ENGL1190US01 10234 MWF 11:00-11:50(16) (R. Ward)

ENGL 1190X. Nonfiction Now.

Nonfiction Now introduces students to contemporary nonfiction writing through in-person exposure to professional writers, who will visit the course to deliver a craft lecture, read from their latest work and discuss the labor that goes into maintaining a professional writing life. Students will be expected to read the work of the visitor and produce creative work in response. Prerequisite: ENGL 0930 or any 1000-level nonfiction writing course. Class list will be reduced to 30 after writing samples are reviewed during the first week of classes. Preference will be given to English concentrators. Banner registrations after classes begin require instructor approval. S/NC.

Spr ENGL1190XS02 20265 W 3:00-5:30(10) (M. Stewart)

ENGL 1190Z. The Art of Craft.

What can traditional crafts teach us about our writing? How does building a house or stitching a quilt help us appreciate the ways we can build creative texts? We will consider such questions to help us reflect on our writing as a craft, to invest the key tenets of craft in our writing process, style, and form, and to forge an innovative portfolio of work of which we can feel justly proud. Writing sample required. Prerequisite: ENGL 0930 or any 1000-level nonfiction writing course. Class list will be reduced to 17 after writing samples are reviewed during the first week of classes. Preference will be given to English concentrators. Instructor permission required. S/NC.

Spr ENGL1190ZS01 20185 TTh 1:00-2:20(08) (R. Ward)

ENGL 1191B. Special Topics in Nonfiction Writing: Fugitive Letters: The Prison Notebooks.

U.S. carceral spaces are often sites of prolific writing and intellectual production. Yet letters composed by incarcerated individuals have been largely excluded from critical public conversations about institutional racism and prison reform. In this course, we will consider the prison letter as an important genre for racial, social, and economic justice. We will examine rhetorical choices made by prison writers to agitate, posit grievances, assert arguments, and advocate for institutional change. With this insight, we will exchange letters with prison reform activists currently or formerly residing in carceral facilities in the United States.

Fall ENGL1191BS01 17613 MWF 2:00-2:50(01) (A. Jackson)

ENGL 1200. Independent Study in Nonfiction Writing.

Tutorial instruction oriented toward some work in progress by the student. Requires submission of a written proposal to a faculty supervisor. Section numbers vary by instructor. Instructor permission required. S/NC.

ENGL 1311G. Shakespeare, Love and Friendship.

Shakespeare portrays friends who are compared to a "double cherry"; a lover who wants to cut her beloved out in little stars; and subjects who sweat with desire to see their kings. How does Shakespeare imagine the possibilities and pitfalls of affection, whether personal or political? What happens to that affection when Shakespeare is adapted into film?

Fall ENGL1311GS01 17163 TTh 1:00-2:20(06) (J. Kuzner)

ENGL 1361G. Tolkien and the Renaissance.

This course explores the work of J.R.R. Tolkien alongside Renaissance forbears such as Shakespeare, Spenser, Milton and others. Topics to include love and friendship, good and evil, violence and nonviolence, and how literature offers distinctive forms of life. Enrollment limited to 20.

Fall ENGL1361GS01 17164 TTh 10:30-11:50(13) (J. Kuzner)

ENGL 1361L. Milton.

A recent book provocatively asked: "Is Milton better than Shakespeare?" Whatever one makes of that question, Milton wrote extraordinary poems in the principal modes of Renaissance verse. This course studies in detail many of those works, including the culturally monumental *Paradise Lost*. We'll also take into account the shape of Milton's authorial career and his always interesting ways with genre. Enrollment limited to 20 juniors and seniors.

Spr ENGL1361LS01 25417 TTh 2:30-3:50(11) (R. Rambuss)

ENGL 1361R. Chaucer.

A flock of birds that hatewatch a dating show. A woman lost at sea in a rudderless boat. A wicker house, sixty miles wide, that spins in place and emits a cacophonous din. A rooster that has a very lousy dream. People who fall in love through their prison bars. People who beg to be excused from love. People who are on their fifth husband, whatever love's got to do with it. The music of the spheres. The insignificance of life. The horrible difficulty of discerning whether you're about to kiss someone on their face or on their posterior. And whether, in the end, we can ever know what a Chaucer even is (and does it matter?) No previous experience of medieval literature necessary.

Spr ENGL1361RS01 25978 Th 4:00-6:30(17) (M. Min)

ENGL 1361S. Sexual Contracts in Renaissance Drama.

Sexual contracts—agreements, promises, ransoms, games, and exchanges—are staged in a range of forms across Renaissance plays. Sometimes contracts are made freely and kept, such as in the ideal marriage plot; but often they are transgressed, misused, or reinterpreted in fascinating ways. In this seminar, we will explore issues of coercion and harassment, deception and identity, and magic and taboo. Students will read plays by Shakespeare, Middleton, Rowley, Cary, Ford, and others, alongside secondary readings in feminist, queer, trans, legal, and psychoanalytic frames.

Fall ENGL1361SS01 17216 MWF 11:00-11:50(16) (C. Scozzaro)

ENGL 1380. Undergraduate Independent Study in Medieval and Early Modern Literatures.

Tutorial instruction oriented toward a literary research topic. Section numbers vary by instructor. Instructor permission required.

ENGL 1512A. Freaks of Nature: Emerson, Thoreau, and the Transcendentalists.

Who were the Transcendentalists—and who cares? This course focuses on American literature's obsessions with Nature in the decades before the Civil War. Reading in Emerson's essays and Thoreau's autobiography *Walden*, we will read in a wide array of writers associated with the Transcendentalist movement, as well as those who opposed and satirized them. Our readings include spiritual narratives, essays, lyric poetry, antislavery writings, and include Margaret Fuller and Frederick Douglass among others. It will introduce students to Romantic literature and culture, sentimentalism, the search for absolute and universal truths, the role of the professional author, and the ideal of artistic genius.

Spr ENGL1512AS01 25432 MWF 1:00-1:50(06) (P. Gould)

ENGL 1561I. The Nineteenth-Century Novel.

This seminar examines how British and French nineteenth-century novels thematize history, memory, representation and desire. Authors to be studied include Austen, Stendhal, Balzac, Dickens, Flaubert, Eliot, and, if time allows, James and/or Proust. Enrollment limited to 20.

Spr ENGL1561I S02 25418 TTh 1:00-2:20(08) (M. Redfield)

ENGL 1562C. The Pursuit of Happiness in Eighteenth-Century Literature.

How and why did happiness become naturalized in the Anglo-American literary imagination? This revolutionary idea has origins in English literature and culture and informs a wide range of concepts, writers, and texts on both sides of the Atlantic. The elusive promise of happiness takes on complexity within the context of other eighteenth-century historical realities such as the wars for empire, colonialism, African slavery and the slave trade. It was the literary subject of satire, sentiment, novels, essays, and poetry. We will focus on such major writers as Jonathan Swift, Daniel Defoe, Aphra Behn, Samuel Johnson, and Jane Austen, as well as Olaudah Equiano, Phillis Wheatley, Charles Brockden Brown, Thomas Jefferson, and Thomas Paine.

Fall ENGL1562CS01 16963 TTh 1:00-2:20(06) (P. Gould)

ENGL 1580. Undergraduate Independent Study in the Enlightenment and the Rise of National Literatures.

Tutorial instruction oriented toward a literary research topic. Section numbers vary by instructor. Instructor's permission required.

ENGL 1710K. Literature and the Problem of Poverty.

This course explores poverty as a political and aesthetic problem for American writers. Examines the ways that writers have imagined the poor as dangerous others, agents of urban decay, bearers of folk culture, and engines of class revolt. Authors include Stephen Crane, William Faulkner, Zora Neale Hurston, and Richard Wright.

Fall ENGL1710KS02 16960 TTh 10:30-11:50(13) (R. Murray)

ENGL 1710P. The Literature and Culture of Black Power Reconsidered.

This course reexamines the Black Power movement as a signal development in American literature and culture. We will read classics from the period with a view toward reassessing the nuances and complexities of their form and politics. At the same time, we will recover less familiar texts that complicate conventional understandings of what defines this movement. Authors include Malcolm X, Huey P. Newton, Angela Davis, Eldridge Cleaver, John Edgar Wideman, Ernest Gaines, and Amiri Baraka.

Fall ENGL1710PS02 17434 TTh 2:30-3:50(12) (R. Murray)

ENGL 1711N. Monsters in our Midst: The Plantation and the Woods in Trans-American Literature.

This course focuses on how literary and visual culture grappled with land as a topographic entity in relation to race, gender, and time. Students read literature about the Caribbean and parts of the U.S., produced from the 19th century to the present. Readings include Marlon James's *The Book of Night Women* and Jean Rhys's *Wide Saragasso Sea*.

Fall ENGL1711NS01 10123 MWF 2:00-2:50(01) (D. Ramirez-D'Oleo)

ENGL 1711S. James Baldwin.

This course is an introduction to the oeuvre of James Baldwin. Celebrity, Civil Rights spokesperson, social critic, and black queer writer of international renown, James Baldwin wrote prolifically over decades and across literary genres, including novels, essays, plays. He once characterized his trenchant critiques of the failures of US democracy as a practice of love. Foregrounding love as a mode of study, an ethic of care, and the practice of critique, our class will grapple lovingly with the life, literary and legacy of James Baldwin.

Spr ENGL1711SS01 20003 TTh 1:00-2:20(08) (A. Abdur-Rahman)

ENGL 1760E. Who's Afraid of Virginia Woolf?.

We will read novels, essays, diaries, and letters by Woolf in order to ask how and why Virginia Woolf haunts our culture and to consider her status as a cultural icon. The seminar will explore her work in the contexts of history, modernism, and literary influences, and it will examine the dimensions of Woolf's afterlife—a posthumous dynamic that shapes issues in art, politics, and gender. Enrollment limited to 20 seniors and juniors.

Fall ENGL1760ES02 16921 W 3:00-5:30(10) (R. Reichman)

ENGL 1762D. Kubrick.

On Kubrick's feature films, documentaries, and photography, starting with his sci-fi masterpiece 2001, followed by his early noirs (*Killer's Kiss*; *The Killing*); sex films (*Lolita*; *A Clockwork Orange*; *Eyes Wide Shut*); and war films (*Paths of Glory*; *Dr. Strangelove*; *Full Metal Jacket*). Topics include: adaptation; genre; masculinity in extremis; technophilia and technophobia; the aesthetics of violence; and sex on film. Limited to 20 junior and senior concentrators in English and MCM. Instructor permission required.

Fall ENGL1762DS01 16922 W 3:00-5:30(10) (R. Rambuss)

ENGL 1762P. Lucille Clifton.

Across thirteen collections published between 1969 and 2008, Lucille Clifton established herself as an essential American lyricist. This course is interested in Clifton's poetics as philosophical thinking, in her investigation of what being human is (ontology), how the human is to be (ethics), what knowing is (epistemology). We will study Clifton's engagement with the theological—especially of the Edenic—as a praxis for exploring trauma, language, time, and the beginning of the world. Most centrally, we will consider Clifton's deployment of brevity, of vernacular or everyday language, as a philosophical and aesthetic enactment of ordinariness.

Fall ENGL1762PS01 16967 M 3:00-5:30(03) (K. Quashie)

ENGL 1762Q. Apartheid and the Literary Imagination.

South Africa has had a distinctive and tumultuous history: pre-colonial inter-ethnic dynamics; European settlement and rivalry played out on African soil; and, between 1948 and 1994, the policy of state racism called apartheid. In this seminar, we study fiction by South African writers who used the English language. The writers address moral and aesthetic questions occasioned by the challenge of trafficking in imaginative literature in a South Africa governed by repressive regimes of white supremacy. At the level of form, they do so in diverse ways. Issues that will engage us include debates around such literary-critical concepts as: protest, realism, modernism, and the "post-apartheid" in literature. Works by Brutus, Coetzee, Fugard, Gordimer, La Guma, Mda, Ndebele, Paton, Plaatje, and Wicomb. We will also discuss some poetry and the films *Cry, the Beloved Country* (1951; 1995), and *Tsotsi* (2005).

Spr ENGL1762CS01 25441 MWF 10:00-10:50(03) (O. George)

ENGL 1780. Undergraduate Independent Study in Modern and Contemporary Literatures.

Tutorial instruction oriented toward a literary research topic. Section numbers vary by instructor. Instructor's permission required.

ENGL 1901R. The Problem of Literary Study.

Studying literature presents far more problems than answers. In the first place, what counts as "literature," and why does it need—or does it?—to be studied? Should we study a literary work as an entity unto itself, or does context play such a crucial role in the generation of meaning that we mustn't ignore it? Or is it somehow necessary to treat a work of literature as both entirely independent and completely saturated with its cultural moment? We'll explore these and many other problems inherent to the study of what is called literature. Authors may include Judith Butler, Jacques Derrida, Michel Foucault, and others.

Fall ENGL1901RS01 16961 MWF 11:00-11:50(16) (J. Egan)

ENGL 1901T. Practices of Autofiction.

One of the more sensational developments in contemporary literature in the United States is the emergence of so-called "autofiction," an abbreviation of the term "autobiographical fiction." But what is distinctive about this literary form, if anything, and what is behind its current popularity? Does it, as one prominent theorist has proposed, denote "a new craving for reality in contemporary literature," or is its significance on the contrary, in the words of another critic, that it "neatly and economically poses the question of the self as fiction"? This course will survey a range of "autofictional" practices in literature, art, and film, and consider several explanations for this wave of interest. Authors include Knausgaard, E. Hardwick, G. Murnane, Teju Cole, Sophie Calle, J. Panahi, Paul B. Preciado, A. Ernaux, F. Jameson, T. Moi, A. Kim.

Spr ENGL1901TS01 25446 M 3:00-5:30(13) (T. Bewes)

ENGL 1991. Senior Honors Seminar in English.

Weekly seminar led by the Advisor of Honors in English. Introduces students to sustained literary-critical research and writing skills necessary to successful completion of the senior thesis. Particular attention to efficient ways of developing literary-critical projects, as well as evaluating, incorporating, and documenting secondary sources. Enrollment limited to English concentrators whose applications to the Honors in English program have been accepted. Permission should be obtained from the Honors Advisor in English. S/NC

Fall ENGL1991 S01 10025 Th 4:00-6:30(04) (D. Nabers)

ENGL 1992. Senior Honors Thesis in English.

Independent research and writing under the direction of a faculty member. Permission should be obtained from the Honors Advisor in English. Open to senior English concentrators pursuing Honors in English. Instructor permission required.

Spr ENGL1992 S01 20005 Arranged 'To Be Arranged'

ENGL 1993. Senior Honors Seminar in Nonfiction Writing.

This course is designed for students accepted into the Nonfiction Honors Program. It will be run in workshop format, and will focus on research skills and generative and developmental writing strategies for students embarking on their thesis projects. Weekly assignments will be directed toward helping students work through various stages in their writing processes. Students will be expected to respond thoughtfully and

constructively in peer reviewing one another's work. Open to seniors who have been admitted to the Honors Program in Nonfiction Writing. Instructor permission required. S/NC

Fall ENGL1993 S01 16684 M 3:00-5:30(03) (J. Egan)

ENGL 1994. Senior Honors Thesis in Nonfiction Writing.

Independent research and writing under the direction of the student's Nonfiction Writing honors supervisor. Permission should be obtained from the Honors Advisor for Nonfiction Writing. Open to senior English concentrators pursuing Honors in Nonfiction Writing. Instructor permission required.

Spr ENGL1994 S01 25421 Arranged (J. Egan)

ENGL 2210. Proseminar.

This seminar, required for *first-year graduate students in English*, considers the state and stakes of literary studies today. The course aims to familiarize students with contemporary critical debates and stances in the wider discipline, and to engage with current methodologies, theories, and analytical tensions. We also address issues of professionalization as they relate to the first years of graduate work. Enrollment limited to 10. S/NC.

Fall ENGL2210 S01 16865 Th 12:00-2:30 (O. George)

ENGL 2361E. Sadomasochism and Early Modern Literature.

This class considers the political, psychic, sexual, and aesthetic implications of pain and pleasure in early modern literature. Primary texts include Shakespeare's sonnets and comedies, Sidney's *Astrophel and Stella*, and poetry by the Earl of Rochester, Robert Herrick, and Aphra Behn. Secondary texts include Deleuze, Freud, MacKinnon, Bersani, Jane Gallop, and Laura Kipnis.

Spr ENGL2361ES01 26137 M 3:00-5:30(13) (C. Scozzaro)

ENGL 2361G. Chaucer.

A flock of birds that hatewatch a dating show. A woman lost at sea in a rudderless boat. A wicker house, sixty miles wide, that spins in place and emits a cacophonous din. A rooster that has a very lousy dream. People who fall in love through their prison bars. People who beg to be excused from love. People who are on their fifth husband, whatever love's got to do with it. The music of the spheres. The insignificance of life. The horrible difficulty of discerning whether you're about to kiss someone on their face or on their posterior. And whether, in the end, we can ever know what a Chaucer even is (and does it matter?) No previous experience of medieval literature necessary.

Spr ENGL2361GS01 26203 Th 4:00-6:30(17) (M. Min)

ENGL 2380. Graduate Independent Study in Medieval and Early Modern Literatures.

Section numbers vary by instructor. May be repeated for credit. Instructor's permission required.

ENGL 2450. Exchange Scholar Program.

Fall ENGL2450 S01 16565 Arranged 'To Be Arranged'

Spr ENGL2450 S01 25228 Arranged 'To Be Arranged'

ENGL 2561Y. Satire, Irony, and Swift.

This seminar will investigate the history, theory, and practice of satire, with a focus on works by Jonathan Swift, the essential and paradigmatic satirist in the English language. Some attention will be given to a few of Swift's eighteenth-century contemporaries, such as Alexander Pope, John Gay, Laurence Sterne, and Samuel Johnson. The last weeks of the course will be devoted to nineteenth- and twentieth-century texts by Jane Austen, Lord Byron, and Thomas Pynchon.

Fall ENGL2561YS01 17276 Th 4:00-6:30(04) (M. Rabb)

ENGL 2561Z. Walter Benjamin Around 1921 (COLT 2650Y)..

Interested students must register for COLT 2650Y.

Fall ENGL2561ZS01 19033 Arranged 'To Be Arranged'

ENGL 2580. Graduate Independent Study in the Enlightenment and the Rise of National Literatures.

Section numbers vary by instructor. May be repeated for credit. Instructor's permission required.

ENGL 2700B. After Blackness: Framing Contemporary African American Literature.

The extraordinary volume and aesthetic variety of black literary art produced since the 1980s has elicited a wide range of theoretical and

historical frameworks for interpreting this work. In assessing the interplay among these scholarly developments and African American literature, this seminar provides an overview of thought about contemporary black culture and gestures towards the intellectual work yet to be done. In so doing, the course also weighs the promise and limitations of interpretive frameworks such as post-segregation, post-nationalism, post-black, post-soul, and Afropessimism. Includes works by Paul Gilroy, Mark Anthony Neal, Christina Sharpe, Paul Beatty, Colson Whitehead, Danzy Senna, and Claudia Rankine.

Spr ENGL2700BS01 25445 F 3:00-5:30(15) (R. Murray)

ENGL 2761P. Modernism and Theories of Space.

This course analyzes literary modernism as it intersects with theories of space both historical and formal. Topics include: colonialism and global spaces, Fordist production, gendered public/private divides, as well as networks, underworlds, spatial form, and models of wandering. Readings include work by Lefebvre, Harvey, Latour, Frank, Larsen, Joyce, McKay, Woolf. Enrollment limited to 15 graduate students.

Spr ENGL2761PS01 26395 M 3:00-5:30(13) (T. Katz)

ENGL 2761X. Literatures of the (Anti)Plantation.

We explore the structure of the plantation alongside the non- or anti-plantation spaces and practices that sprouted in its midst through fiction, scholarship, and film. We explore representations of enslaved and free black people's sustenance gardening and husbandry, acts of marronage and indolence, millenarian cults, and the relationship between the paranormal or the supernatural and what is often called "nature." Texts may include: novels by William Faulkner, Jamaica Kincaid, and Maryse Condé; films by Jordan Peele and Euzhan Palcy; scholarly texts by Colin Dayan and Saidiya Hartman; and narratives of events such as the Haitian Revolution and the rise and tragedies around of The Peoples Temple in the US and Jonestown and Tragedismo in the Dominican Republic.

Spr ENGL2761XS01 25431 Th 4:00-6:30(17) (D. Ramirez-D'Oleo)

ENGL 2780. Graduate Independent Study in Modern and Contemporary Literatures.

Section numbers vary by instructor. May be repeated for credit. Instructor's permission required.

ENGL 2900X. Postcolonial Theory.

In this introduction to postcolonial theory we will consider key Western sources (Hegel, Marx, Lacan, Levi Strauss, Emmanuel Levinas); anticolonial manifestos (Gandhi, Fanon, Césaire, Memmi); political and ethical practices (civil disobedience, armed struggle, friendship). In addition to canonical critics (Said, Bhabha, Spivak), the course will review new interests in the field (transnationalism, non-western imperialisms, the environmental turn). Offered as a collaborative humanities seminar in Spring 2025, Postcolonial Theory will host and think with a series of guest scholars.

Spr ENGL2900XS01 20268 M 3:00-5:30(13) (L. Gandhi)

ENGL 2901P. Black Feminism: Roots, Routes, Futures.

This graduate seminar pursues an interdisciplinary investigation of black feminist theories, methods, praxes, and politics. Using a black feminist lens, it investigates legacies of racial slavery and colonialism; the pathways and promises of African diaspora; citizenship, labor, and the law; theories of the flesh and changing definitions of kin; human ontology and the mutability of gender; black expressive practices and emancipatory politics. Enrollment limited to 15.

Fall ENGL2901PS02 16923 Th 4:00-6:30(04) (A. Abdur-Rahman)

ENGL 2901R. Technologies of Memory.

From archives to monuments, photographs to films, sound recordings to selfies to Twitter feeds, modern life has reached a saturation point of object-driven memory. This course examines modes of capturing memory in the 20th and 21st centuries, and asks what replaces the medieval memory palace as an imaginary habitat for recollection. Enrollment limited to 15.

Spr ENGL2901RS01 25893 W 12:00-2:30 (R. Reichman)

ENGL 2901S. Late Formalism.

Late Style has long been a topic of critical reflection, whether to describe the trajectory of an individual artist's career or the ultimate achievement of a philosophical corpus. We also attach late and other markers of temporality, development or discontinuity, (im)maturity or belatedness, to

broader intellectual movements and historical periods: Late Beethoven, Early Marx and Late Capital, or the New Criticism, the New(er) Historicism, post-modernism and the new eighteenth century. As this potentially interminable catalogue suggests, the late is not invariably attached to notions of mastery or wisdom, ripeness or completion, as the signifier of a desired end. In Late Style, Edward Said aligned lateness with "intransigence and unresolved contradiction," indeed, with a kind of failure. This course examines the vicissitudes of the literary formalisms of the last century: have they reached a "late" moment, an intransigent but generative impasse?

Fall ENGL2901SS01 16996 M 3:00-5:30(03) (E. Rooney)

ENGL 2901T. Twenty-first Century Critical Theory.

Intended as an introduction to some influential emergent strains of literary-theoretical scholarship over the past two decades, this course will examine work in contemporary aesthetics, ecological and environmental thought, affective criticism, transgender studies, black studies, and debates around the prospects of a future for literary studies. In each case, a substantial 21st-century text will be considered alongside several canonical works (by figures such as Kant, Marx, Lukács, Du Bois, Haraway) with which it is in conversation. Contemporary authors include Lauren Berlant, Saidiya Hartman, Achille Mbembe, Fred Moten, Jeffrey Nealon, Rob Nixon, Sianne Ngai, Paul B. Preciado, and Sylvia Wynter.

Fall ENGL2901TS01 16995 W 3:00-5:30(10) (T. Bewes)

ENGL 2940. Scholarly Writing for Journal Publication.

Writing and professionalization workshop intended for graduate students in literary studies. Topics covered include selection of journal; framing, structuring and composition of the article; the logistics of peer review; sharing and workshopping drafts; working with academic mentors and advisors. Every passing student will have a publishable article under consideration by the end of the semester. Enrollment limited to 12 English Ph.D. students. Instructor permission required. S/NC.

Spr ENGL2940 S01 25427 M 3:00-5:30(13) (E. Hipchen)

ENGL 2950. Seminar in Pedagogy and Composition Theory.

An experimental and exploratory investigation into writing as a preparation for teaching college-level writing. Reviews the history of writing about writing, from Plato to current discussions on composition theory. Against this background, examines various processes of reading and writing. Emphasizes the practice of writing, including syllabus design. Enrollment restricted to students in the English Ph.D. program.

Fall ENGL2950 S01 10136 T 12:00-2:30 (J. Readey)

ENGL 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall ENGL2970 S01 16566 Arranged 'To Be Arranged'

Spr ENGL2970 S01 25229 Arranged 'To Be Arranged'

ENGL 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall ENGL2990 S01 16567 Arranged 'To Be Arranged'

Spr ENGL2990 S01 25230 Arranged 'To Be Arranged'

Environmental Studies

ENVS 0070C. Transcending Transportation Impacts.

Students will be engaged in interdisciplinary analyses of the life-cycle costs, environmental impacts, technical developments, and policy innovations at the local and regional level. We will discuss technical modifications in vehicles, such as plug-in hybrids, as well as policy and planning on intermodal systems, recycle-a-bike programs, intelligent transportation systems, and other innovations. Enrollment limited to 19 first year students. Instructor permission required.

Fall ENVS0070CS01 10184 TTh 1:00-2:20(06) (K. Teichert)

ENVS 0110. Humans, Nature, and the Environment: Addressing Environmental Change in the 21st Century.

This is an engaged scholars course that offers an introduction to contemporary environmental issues. We explore the relationships between human societies and the non-human environment through a survey of topical cases, including: human population growth and

consumption, global climate change, toxins, waste streams, water resources, environmental justice and ethics, and agro-food systems. This course also analyzes various solutions—social, political, technical, and economic—put forth by institutions and individuals to address questions of environmental sustainability. Each student must register for a 50-minute weekly engaged scholar lab in addition to lectures. Each lab will partner with a community organization to complete an engaged, environmental project. See class notes for reserved seating registration set up by semester level.

Fall ENVS0110 S01 10183 MWF 1:00-1:50(08) (L. Acton)

ENVS 0490. Environmental Science in a Changing World.

Introduces students to environmental science and the challenges we face in studying human impacts on an ever-changing earth system. We will explore what is known, and not known, about how ecosystems respond to perturbations. This understanding is crucial, because natural systems provide vital services (water and air filtration, climate stabilization, food supply, erosion and flood control) that can not be easily or inexpensively replicated. Special emphasis will be placed on climate, food and water supply, population growth, and energy.

Spr ENVS0490 S01 20155 TTh 10:30-11:50(09) (T. Kartzinel)

ENVS 0715. Political Ecology.

Political ecology asks how power mediates human-environment relationships. How do we, as society, understand “the environment,” environmental problems, our role in them, and potential solutions? How have human-environment interactions reproduced inequity related to class, race, gender, and worldview; how does inequity, in turn, relate to environmental realities? Whose environmental “truth” counts, whose doesn’t, and why? Are better futures possible (and who defines “better futures”)? In this course, we will consider these questions and more. We will examine how knowledge production and socio-economic structures and processes relate to environmental change across economic, political, social, and ecological contexts. The first part of the course will introduce political ecology’s roots and major arguments. We will use this foundation to analyze real-world cases and consider the opportunities, or “openings,” for different environmental futures.

Spr ENVS0715 S01 26144 TTh 1:00-2:20(08) (L. Acton)

ENVS 0717. Ocean Resilience: Ecology, Management, and Politics.

In this course, we will examine ocean management for resilience and conservation: policy design, implementation, and effects on ecosystems and people. The use of tools such as marine protected areas and marine spatial planning has exploded in recent decades, and global interest in alternative energy, food security, and marine biodiversity conservation has heightened the use, and critique of these key tools in ocean conservation and resilience. Co-taught by an interdisciplinary team (a coastal ecologist and an oceans governance scholar), this course will explore questions such as: What management tools are available? What do they do (and not do) and how? How are they created and managed in particular contexts? Who gets to decide and why?

Fall ENVS0717 S01 18152 MWF 11:00-11:50(16) (L. Acton)

ENVS 1107. Cartography and Geovisualization.

Join Professor Seda Salap-Ayca and your fellow students on this journey of learning as the group delves into the topic of Cartography and Geovisualization. Why does it matter to engage with this topic? Maps are our powerful tools to tell stories, but what is the story behind them? What makes a map design effective? In this course, you will learn the fundamentals of cartography and map design. Students will critique and create appealing maps throughout the semester. There isn’t a prerequisite for the course, however, an introductory level of GIS will be helpful to understand the terminology and the concepts. If you haven’t taken any GIS course before, some basics will be covered during the training assignments. The majority of the hands-on exercises will be based on variety of software, therefore a basic level of computer skills is essential.

Spr ENVS1107 S01 26535 TTh 2:30-3:50(11) (S. Salap-Ayca)

ENVS 1207. Eco-Entrepreneurship.

Environmental, business, and social opportunities are often seen as being at odds. This course is a hands-on, interactive journey to explore bringing an impactful idea for an environmental product/service/solution into the world and designing a business plan to do so. You will identify an environmental area of opportunity, learn how to focus on the problem

before the solution, identify the key stakeholders including your users/customers, and build a business model. You will look at the triple bottom line, and learn new tools, best practices, and frameworks to breathe life into your solution and make it viable. Instructions for submitting a personal statement before enrolling will be available in the syllabus.

Spr ENVS1207 S01 26146 T 4:00-6:30(16) (A. Nichols)

ENVS 1232. Land Matters: Stewardship, Sovereignty, and Justice on the Ground.

We are connected to Land. Whether our connection is intimate and acknowledged or distant and unexplored, human (and other) lives are rooted in Land. In this course, we draw out matters of land, asking how and for whom land matters. Building on scholarship, journalism, public commentary, movements, podcasts, and videos, we explore land as a multifaceted and fundamental source of life, knowledge, community, wealth, power, theft, exclusion, sovereignty, justice, and healing. The course is grounded in US-based land histories and how colonial violence, patriarchy, white supremacy, and capitalism intersect to shape land access, control, and ownership. From this foundation, we explore on-the-ground efforts toward land justice, including decolonization, reparations, agrarian commons, and land trusts. Students will leave the course with frameworks for envisioning and helping to build equitable, just, and healthy Land futures based in stewardship, intention, and care.

Spr ENVS1232 S01 26147 TTh 2:30-3:50(11) (M. Schneider)

ENVS 1247. Clearing the Air: Environmental Studies of Pollution.

Whether air, water or land borne, pollution is a multivalent “wicked problem” that has profound implications for the climate, ecological and economic systems, and human health and well-being. Emphasizing engaged scholarship based in Providence, we will explore pollution’s historical origins, review current pollution measurements and reduction/mitigation efforts, and discuss alternative approaches that better address pollution’s historical legacies and resulting social and environmental inequalities. Coursework will revolve around a Providence-based air monitoring project, augmented by readings, guest lectures, and discussion. Assessment will involve participation in discussion, 2-3 response papers and a final project linked to an engaged, field-study.

Fall ENVS1247 S01 17990 TTh 1:00-2:20(06) (S. Frickel)

ENVS 1300. Terrestrial Biogeochemistry, Ecosystems and the Global Carbon Cycle (EEPS 1300).

Interested students must register for EEPS 1300.

Fall ENVS1300 S01 18928 Arranged 'To Be Arranged'

ENVS 1400. Sustainable Design in the Built Environment.

Course develops students’ analytical abilities to apply fundamental concepts of environmental issues, building systems analysis, and architectural and engineering design. Students learn how to reduce the negative environmental impacts, and maximize positive social and economic impacts, of the built environment. Students cultivate applied skills in sustainable design; including fundamental energy calculations, heat flow analysis, schematic design analysis, and building operating impacts assessment. Course emphasis is on building energy flows. Students conduct group and independent research projects, providing the opportunity to study broader impacts of the built environment and propose solutions. Class meetings combine lectures, student presentations, and group workshops. To join the waitlist if there are no available seats, please enter an override request reason and briefly summarize your learning objectives in Courses@Brown. Your concentration and semester information is automatically entered.

Fall ENVS1400 S01 10185 TTh 9:00-10:20(05) (K. Teichert)

ENVS 1421. Podcasting For the Common Good: Storytelling with Science.

How can we use podcasts to spread compelling information about the future of our planet? In this hands-on, interactive course, we bring new perspective to environmental topics by integrating scientific research with audio story telling techniques. Students will learn how to find answers to environmental questions, use recording equipment, conduct interviews, write scripts, and make a finished product. Students will produce several audio projects for the course including an episode for Possibly- a podcast produced through a partnership between IBES and The Public’s Radio. Students who want to enroll should write a one page (max) statement about how skills related to explaining environmental and health issues will

help them in their educational trajectory. Statements can be emailed to Megan_Hall@Brown.edu.

Spr ENVS1421 S01 26148 T 4:00-6:30(16) (M. Hall)

ENVS 1490. SES-Independent Study/Science Writing.

The culmination of the Semester in Environmental Sciences at the Marine Biological Laboratory is an independent research project that builds on the topics covered in the aquatic and terrestrial ecosystem analysis core courses. In addition students participate in a seminar designed to help improve their ability to tell a lay reader about science. Enrollment is limited to students in this program. Instructor permission required.

Fall ENVS1490 S01 11943 Arranged 'To Be Arranged'

ENVS 1491. SES-Terrestrial Ecosystem Analysis.

Team-taught course examining: the structure of terrestrial ecosystems fundamental biogeochemical processes, physiological ecology, impacts of environmental change on the landscape; the application of basic principles of ecosystem ecology to investigating contemporary environmental problems. Part of the Semester in Environmental Science at the Marine Biological Laboratory; enrollment is limited to students in this program. Instructor permission required.

Fall ENVS1491 S01 11944 Arranged 'To Be Arranged'

ENVS 1492. SES-Aquatic Ecosystem Analysis.

Team-taught course examining the structure of freshwater, estuarine and marine ecosystems; impacts of environmental change on the landscape at local regional and global scales; the application of basic principles of ecosystem ecology to investigating contemporary environmental problems such as coastal eutrophication, fisheries exploitation. Part of the Semester in Environmental Science at the Marine Biological Laboratory; enrollment is limited to students in this program. Instructor permission required.

Fall ENVS1492 S01 11945 Arranged 'To Be Arranged'

ENVS 1493. SES-Environmental Science Elective.

Two environmental science electives are offered each fall semester as part of the Semester in Environmental Science at the Marine Biological Laboratory, including: aquatic chemistry, mathematical modeling of ecological systems and microbial ecology. Enrollment is limited to students in this program. Instructor permission required.

Fall ENVS1493 S01 11946 Arranged 'To Be Arranged'

ENVS 1545. The Theory and Practice of Sustainable Investing.

21st century businesses and investors face a broadening and deepening array of Environmental, Social, and Governance (ESG) risks and opportunities. Climate change, water scarcity, community conflicts, resource depletion, supply chain breakdowns, worker well-being and economic inequality pose present material challenges that make sustainability an imperative for successful corporations and investors. We will examine current ESG strategy, trends, future scenarios, players, and frameworks and integrate that theory with practical investment performance analysis, metrics, and study of screens, asset classes, and diversification.

Fall ENVS1545 S01 17991 TTh 6:40-8:00PM(02) 'To Be Arranged'

ENVS 1554. Farm Planet: Hunger, Development, and the Future of Food and Agriculture.

Hunger amidst plenty is an enduringly wicked problem. Modern agriculture has become incredibly productive, fueling the global grain trade, the meatification of human diets, and the exponential expansion of food and non-food products. Still, the number of people who are hungry, food insecure, and/or malnourished is stable or increasing in various parts of the world. As global population rises, calls to further increase and intensify agricultural production ring out across the globe. Through (agro-)ecological, feminist, and justice lenses, we will explore the political economy of food insecurity and agriculture, the political ecology of agricultural development, and critical humanist approaches to the past, present, and future of farming. We will connect with human geographers, sociologists, anthropologists, historians, Indigenous scholars, Black Studies scholars, feminists, and people working outside of academia.

Fall ENVS1554 S01 17992 MWF 2:00-2:50(01) (M. Schneider)

ENVS 1555. Local Food Systems and Urban Agriculture.

This is an engaged scholar course. Urban agriculture has a critical function in a small but increasing movement toward more localized and sustainable food systems. This course focuses on research and readings from multiple

disciplines addressing urban agriculture and local food systems' role in shaping food policies, labor practices, sustainable agricultural practices, and human health (to name a few). More importantly, students will work with community partners to actively engage in a local food system project. Enrollment limited to 40.

Fall ENVS1555 S01 17993 TTh 10:30-11:50(13) (D. King)

ENVS 1580. Environmental Stewardship and Resilience in Urban Systems.

This course investigates current environmental impacts and risks related to urban infrastructure systems. Students analyze efforts to minimize negative environmental, health and economic impacts of the built environment. The course explores urban initiatives to increase sustainability and resiliency of infrastructure systems in anticipation of increased risks related to climate change. The goal is to learn the rationale, process and technical aspects of the practice of environmental stewardship and resilience planning in an urban context. Students will develop competence in technical analysis, policy analysis, and program implementation through case studies and systems analyses. To join the waitlist if there are no available seats, please enter an override request reason and briefly summarize your learning objectives in courses@brown. Your concentration and semester information is automatically entered.

Spr ENVS1580 S01 20156 TTh 10:30-11:50(09) (K. Teichert)

ENVS 1615. Climate Change, Human Rights, and the Policy Process.

The diminishing quality of Earth's systems and resources carries profound implications for the fulfillment of human rights and aspirations. But even as Western knowledge systems understand better the intrinsic interdependencies between humans and the non-human, policy gridlock persists. Indeed, scientific findings are regularly contested on political grounds. The purpose of this course is to learn how to apply diverse knowledges from Indigenous to Modern to map the relevant policy in problems at the intersection of human rights and environmental integrity, and to develop approaches to address them in ways that are creative, effective, responsible and just.

Fall ENVS1615 S02 18951 TTh 10:30-11:50 (A. Lynch)

ENVS 1805. Ocean Governance and Policy.

This course offers a deep dive into ocean and coastal governance and policy. As residents of the Ocean State, how well do we understand how society interacts with ocean spaces and resources, from local to national and global scales? We will investigate how marine policy planning and implementation processes interact with particular political, social, and economic contexts through case study examples, local practitioner guest speakers, and in-class debates. Using a variety of marine policy sectors (e.g., fisheries, energy, and biodiversity management), we will critically evaluate management tools (e.g., market mechanisms, regulations, area-based management, and community-based management). We will unsettle "established" policy assumptions, asking: Who governs oceans? How does power relate to ocean policy creation and outcomes? What are the roles of science, knowledge, institutions, history, and context in how ocean governance plays out on the ground (or in the waves!)?

Spr ENVS1805 S01 26192 W 3:00-5:30(10) (L. Acton)

ENVS 1820. China's Environmental History: Sources and Themes.

As one of the world's great civilizations, China has an unparalleled written record of how people have transformed their environments over 3000 years. This seminar will explore China's environmental history from early times to the present by focusing on the words of people in China, which we will read in translation. China's prosperity was historically based on millions of people producing food and other materials from the land, often replacing natural ecosystems with farms, tree plantations and other human ecosystems. Since the founding of the People's Republic of China in 1949 this has been combined with intensive government development projects and highly polluting industrialization. We will read a wide variety of translated sources to understand this history, including landscape poetry, medical manuals, travel narratives, geographies, laws, Buddhist texts, recipe books, and even science fiction.

Fall ENVS1820 S01 18528 W 3:00-5:30(10) (B. Lander)

ENVS 1823. Climate Media, Discourse, and Power.

How does the American public think about and talk about climate change, and how are these discussions shaped by the interventions of powerful interest groups and political elites? In this course, we will consider how

individuals' understandings of climate change are deeply shaped by relations of power, from corporate strategies to delay meaningful action on climate change, to the norms and operations of media institutions, to dominant environmentalist discourses that fail to engage larger socioeconomic structures. While we will primarily discuss how public understanding has historically been constrained by the operation of power, we consider throughout possibilities for crafting climate narratives that resist these limitations to pursue transformative change. This course will focus primarily on climate politics in the United States, but we will also consider other national contexts and impacts on communities across the globe.

Spr ENVS1823 S01 26534 TTh 9:00-10:20(05) (R. Wetts)

ENVS 1825. Commodity Natures: Supply Chains From Extraction to Waste and Alternatives to Endless Growth.

What goes into the things we use everyday? Who makes commodities and under what conditions? What happens to stuff after we throw it away? Are we stuck with mass consumption? Are there workable alternatives? These are the kinds of questions we will unpack. Reading from commodity and discard studies, and political economy and ecology, we will situate economic growth in social and environmental context. We will look at production, extraction, circulation, disposal, and afterlives of commodities, with particular attention to invisibilized labor and environmental externalities. And we will explore sustainability proposals, including circularity, degrowth, and repair. In addition to an individual paper, you will apply analytical tools in a semester-long research project to examine a commodity of your choosing. With peers, you will produce a report, narrative website, video, or web-series to narrate the life and afterlife of your thing.

Fall ENVS1825 S01 17994 TTh 2:30-3:50(12) (M. Schneider)

ENVS 1911. Narrating the Anthropocene.

Narratives are key to how we understand our world—making nonfiction storytelling a critical part of comprehending and acting in a time of environmental crises. Through regular writing practice and discussions of readings and other media—including podcasts and film—this class will examine models for how nonfiction narratives can foster a better understanding of past and present environmental change, imagine an environmentally just future, explain technical information for a broad audience, and support an informed, politically active citizenry. Visits from authors and creators will supplement class discussion, as assignments build toward each student completing an environmentally-focused creative narrative project.

Fall ENVS1911 S01 17995 M 3:00-5:30(03) (B. Demuth)

ENVS 1925. Energy Policy and Politics.

From coal power to solar power, energy drives economies and increases quality of life world-wide. However, this same energy use can, and often does, lead to severe environmental destruction/pollution and global warming. This course serves as an introduction to energy policy in the United States and also explores global attempts to solve energy problems. This course examines different types of energy sources and uses, different ideological paths driving energy policy, the environmental impacts of energy use, current global and domestic attempts to solve energy problems, and the role of renewable and alternative forms of energy in future energy policy.

Spr ENVS1925 S01 26196 M 3:00-5:30(13) (D. King)

ENVS 1926. Wasted: Rethinking Chemical Environments.

This senior seminar investigates chemical and other forms of industrially produced waste and its impacts on environment and society. We will take an interdisciplinary approach, drawing on scholarship from anthropology, geography, history, sociology, science studies, and discard studies. We will follow chemicals around the world, from their inception in Western laboratories to their disposal in landfills and waste pits of the global South. Along the way, we will consider how corporations engineer chemicals' manufacture, governments regulate their use, sciences measure their human and ecological effects, and communities contend with the lived realities of chemical exposure and toxic suffering.

Spr ENVS1926 S01 26197 W 3:00-5:30(10) (S. Frickel)

ENVS 1970. Independent Study.

First semester of individual analysis of environmental issues, required for all environmental studies concentrators. Section numbers vary by

instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor override required prior to registration.

ENVS 1971. Independent Study.

Second semester of individual analysis of environmental issues, required for all environmental studies concentrators. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor override required prior to registration.

ENVS 2450. Exchange Scholar Program.

ENVS 2980. Reading and Research.

First semester of thesis research during which a thesis proposal is prepared. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor override required prior to registration.

ENVS 2981. Reading and Research.

Second semester of thesis research. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor override required prior to registration.

ENVS 2990. Thesis Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing a thesis.

French Studies

FREN 0100. Basic French.

This is the first half of a two-semester course. Four meetings a week for oral practice. One hour of work outside of class is expected every day (grammar/writing, oral practice, reading). Enrollment limited to 15.

Fall FREN0100 S01 16700 MF 9:00-9:50(13) (S. Gaillard)

Fall FREN0100 S01 16700 TTh 10:30-11:50(13) (S. Gaillard)

Fall FREN0100 S02 16702 MF 10:00-10:50(13) (S. Gaillard)

Fall FREN0100 S02 16702 TTh 10:30-11:50(13) (S. Gaillard)

Fall FREN0100 S03 16703 TTh 9:00-10:20(05) (S. Gaillard)

Fall FREN0100 S03 16703 MF 11:00-11:50(05) (S. Gaillard)

FREN 0300. Intermediate French I.

A semi-intensive elementary review with emphasis on all four skills (listening, speaking, reading and writing). Class activities include drills, small group activities, and skits. Class materials include videos, a French film, short stories, and various other authentic documents. Prerequisite: FREN 0200 or placement (Previous experience with French is required to take this class). Four meetings per week, plus a 50-minute conversation section with TAs.

Fall FREN0300 S01 16705 MF 11:00-11:50(05) (S. Gaillard)

Fall FREN0300 S01 16705 TTh 9:00-10:20(05) (S. Gaillard)

FREN 0400. Intermediate French II.

Continuation of FREN 0300 but may be taken separately. A four-skill language course that stresses oral interaction in class (three meetings per week plus one 50-minute conversation section). Materials include audio activities, film, and a novel. Short compositions with systematic grammar practice. Prerequisite: FREN 0300, FREN 0200 with permission, or placement.

Fall FREN0400 S01 16707 MWF 10:00-10:50(14) (S. Gaillard)

Fall FREN0400 S02 16708 MWF 12:00-12:50(15) (S. Gaillard)

FREN 0500. Writing and Speaking French I.

A four-skill language course that stresses oral interaction in class. Thematic units will focus on songs, poems, a short novel, a graphic novel, films and a longer novel. Activities include a creative project using Comic Life, and a systematic grammar review. Prerequisite: FREN 0400, FREN 0200 with written permission, or placement.

Fall FREN0500 S01 16710 MWF 10:00-10:50(14) (S. Ravillon)

Fall FREN0500 S02 16711 MWF 11:00-11:50(16) (S. Ravillon)

Fall FREN0500 S03 16712 MWF 1:00-1:50(08) (S. Ravillon)

FREN 0600. Writing and Speaking French II.

Prerequisite for study in French-speaking countries. Class time is devoted mainly to conversation and discussion practice. Writing instruction and assignments focus on essays, commentaries, and to a lesser degree, on story writing. Apart from reading assignments for discussion (press articles and literary excerpts), students select two novels to read. Prerequisite: FREN 0500 or placement. Enrollment limited to 15.

Fall	FREN0600	S01	16713	MWF	10:00-10:50(14)	(S. Ravillon)
Fall	FREN0600	S02	16714	MWF	11:00-11:50(16)	(S. Ravillon)
Fall	FREN0600	S03	16715	MWF	12:00-12:50(15)	(S. Ravillon)

FREN 0720D. Contes et identités francophones.

Folktales are fantastical stories, but they are also connected to social realities in profound and surprising ways. In this course we will explore what folktales and their adaptations in literature and film have to tell us about the cultures in which they are (re)told. Focusing on stories from France, the Maghreb, West Africa, the Caribbean, and North America, we will consider how storytelling and folktales both reaffirm and critique social structures and how, in former colonies of France, adaptations respond to (post)colonial realities. Using a comparative approach, we will examine how similar folkloric plots are treated across different contexts, but also how and why certain tales are privileged in each culture. Along with critical readings and films, we will study adaptations by d'Aulnoy, Perrault, Ben Jelloun, Mammeri, Senghor, Dadié, Diop, and Chamoiseau, among others. Taught in French.

Fall	FREN0720D	S02	17923	MWF	10:00-10:50(14)	(L. Seifert)

FREN 1020B. History of Romance Languages.

The Romance family is one of the most widely-spoken and politically important language families. The aim of this course is to introduce students to the history and linguistic characteristics of the Romance family. Our purpose is to learn the factors that led to the development of modern standard Romance languages, and provide an understanding of Romance structures and their linguistic relationships. The course covers language families; genetic relationships (family trees); typological comparison; internal versus external history; language contact and borrowing; Romance Pidgins and Creoles; Standard language versus dialect; social variation; concepts of Phonetics and Phonology; Morphology; Syntax; Semantics; Lexicon.

Fall	FREN1020B	S01	18787	TTh	10:30-11:50	(O. Mostefai)

FREN 1040D. Molière et son monde.

In-depth study of Molière's theater and its cultural contexts. We will examine how Molière uses a variety of theatrical forms to portray the monarchy, social class, religion, medicine, and gender relations of seventeenth-century France. Plays by Molière will be studied alongside other literary texts and documents of the period as well as films (performances of plays, historical fiction). Prerequisite: a course at the 0600 or 0700 -level or equivalent proficiency. Contact the instructor to verify your proficiency if you have not taken French at Brown.

Fall	FREN1040D	S01	16717	MWF	12:00-12:50(15)	(L. Seifert)

FREN 1130G. Modernismes poétiques.

Poetry begins with (more) white space on the page. The modernist remaking of poetry - beginning somewhere in the second half of the 19th century and lasting more or less through the first half of the 20th - brought about an exponential increase in the volume of that space, and in various other extensions of it (e.g. into design and drawing, into the unconscious). The course will briefly examine the origins of those transformations in the 19th century and follow through their ramifications in poets such as Apollinaire, the Surrealists, Cocteau, Bataille and Ponge. Taught in French. Prerequisite: a course at the 0600- or 0700-level or equivalent proficiency. Contact the instructor to verify your proficiency if you have not taken French at Brown.

Fall	FREN1130G	S01	17774	TTh	2:30-3:50(12)	(D. Wills)

FREN 1410T. L'expérience des réfugiés: déplacements, migrations.

An exploration of the experience of refugees and immigrants with two components. The first component consists of close study of the French context from Decolonization up through the current refugee crisis based on literature, film, the press, and critical essays. The second component of this course will give students the opportunity to work with refugee/recent immigrant communities in Providence. This is a community-engaged course requiring substantial commitment beyond the classroom. Taught

in French. Prerequisite: a course at the 0600- or 0700-level or equivalent proficiency. Contact the instructor to verify your proficiency if you have not taken French at Brown. *undergraduate only

Fall	FREN1410T	S02	17684	TTh	1:00-2:20(06)	(V. Krause)

FREN 1710J. Geopolitics and Identity Divides in the Middle East.

In this course, we will explore Near Eastern Francophone literature through a period of civil wars and societal fractures, focusing on major themes that haunted modern Levantine authors, including history, "Phénicianisme" versus Arabism, identity versus alterity, nationalist feminism, sectarianism, and universalism. Readings will cover literary productions from 1919 until 1998 and will be supplemented with contextualization articles in French and English. Taught in French. Prerequisite: a course at the 0600- or 0700-level or equivalent proficiency. Contact the instructor to verify your proficiency if you have not taken French at Brown.

Fall	FREN1710J	S01	18061	MWF	1:00-1:50(08)	(M. Alsahoui)

FREN 1710L. Africa in Theory Philosophy, Anthropology, History Beyond the West.

The African continent is the source of multiple theoretical reflections. From political theory to philosophy and history, Africa is at the heart of a burgeoning body of theory that this course sets out to examine. The singularity of this course resides in the fact that it will maintain, a continental perspective that includes the Maghreb or North Africa within Africa throughout the semester. Emphasis will be placed on French-speaking sources from West and North Africa, which are often neglected in English-speaking contexts. The need for such a perspective is represented by Frantz Fanon's Pan-Africanism, which calls for the abolition of the Saharan frontier between "North" and "Black" Africa. Marginalized or simply unknown authors will be studied, including: Abdelkebir Khatibi, Paulin Hountondji, Fabien Eboussi Boulaga, Malek Bennabi, Youssef Seddik, Hichem Djait, Mohammed Talbi, Lepold Sedar Senghor, among others.

Fall	FREN1710L	S01	17771	M	3:00-5:30(03)	(M. Amer Meziane)

FREN 1970. Individual Independent Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Instructor permission required.

FREN 1990. Senior Thesis.

Independent study in an area of special interest to the student, with close guidance of a member of the staff, and leading to a major paper. Required of candidates for honors, and recommended for all senior concentrators. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

FREN 2190M. LA THÉORIE LITTÉRAIRE DE BARTHES ET DE DERRIDA.

Barthes et Derrida développeront leur pensée sur des biais très différents. La perspective de Barthes est littéraire et rhétorique tandis que Derrida se situe dans une tradition philosophique. Pourtant, chacun des deux questionne explicitement et systématiquement la question de la littérature. Barthes soumet le texte littéraire à de nouvelles formes d'analyse tout en exposant « la place et l'énergie du sujet ». Derrida a recours à la littérature comme sorte de défi lancé à la philosophie, tout en l'analysant sur ses propres termes et l'impliquait dans l'enjeu capital d'un questionnement éthique et politique. Nous étudierons dans ce cours une série de textes de Barthes et de Derrida qui fournissent encore des modèles exemplaires d'une approche critique à l'écriture littéraire.

Fall	FREN2190M	S01	18379	W	3:00-5:30(10)	(D. Wills)

FREN 2450. Exchange Scholar Program.

Fall	FREN2450	S01	16571	Arranged		'To Be Arranged'
Spr	FREN2450	S01	25233	Arranged		'To Be Arranged'

FREN 2600H. Romancières dramaturges.

In this graduate seminar, we will study six French-language women writers of the 20th and 21st centuries--Beauvoir, Duras, Sarraute, Kristof, NDiaye, Redonnet--who used both the novelistic and theatrical mediums to reflect on important modern issues/themes such as war, gender, class, social violence, immigration and memory/mourning. For each author we will read one play and one novel, to consider how form inflects writerly projects, and conversely to consider, through the lens of each writer's project, the

specific potentialities and limits of form. Secondary writings will be drawn from narratology, theater theory, and critical theory/philosophy. Taught in French.

Fall FREN2600HS01 17772 Th 4:00-6:30(04) (T. Ravindranathan)

FREN 2610G. Faces: From Masks to Deepfake (HMAN 2401Y)..

Interested students must register for HMAN 2401Y.

Fall FREN2610GS01 18681 Arranged 'To Be Arranged'

FREN 2970. Preliminary Examination Preparation.

For graduate students who have completed their course work and are preparing for a preliminary examination.

Fall FREN2970 S01 16572 Arranged 'To Be Arranged'

Spr FREN2970 S01 25234 Arranged 'To Be Arranged'

FREN 2980. Reading and Research.

Work with individual students in connection with special readings, problems of research, or preparation of theses. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

FREN 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall FREN2990 S01 16573 Arranged 'To Be Arranged'

Spr FREN2990 S01 25235 Arranged 'To Be Arranged'

FREN XLIST. Courses of Interest to French Concentrators.

Gender and Sexuality Studies

GNSS 0120. Introduction to Gender and Sexuality Studies.

Explores the interdisciplinary fields of Gender and Sexuality Studies, considering the relation between formations of gender and those of sexuality across a range of historical and disciplinary contexts. Considers how both sexuality and gender are shaped in relation to race and ethnicity, economic inequality, and the postcolonial legacy.

Fall GNSS0120 S01 18147 MWF 2:00-2:50(01) (W. Lee)

GNSS 0710D. Sapphic Arts: From Poetry to TikTok.

This course takes an intimate look at Sapphic culture from the late 19th century to present. Since its most recent renaissance in the mid-2010s, the Sapphic has emerged as an elusive disruptor; an umbrella term that welcomes lesbians, wlw, nonbinary and trans femmes and mascs. This seminar explores how the Sapphic functions not just as an identity category but a methodology (a way of reading, writing, looking, listening) and an aesthetic in art, design, fashion, and food. What are the ways in which the Sapphic works with/against lesbian and queer political identities? How does contemporary use of the Sapphic diverge from its past iterations in literature, literary criticism, and visual culture? How might we understand temporality in Sapphic expression (slow-burn, yearning)? Competency in Sapphic arts requires participation in seminar discussions, completion of 3 short essays, and a final essay/creative project.

Fall GNSS0710ES01 18917 TTh 1:00-2:20(06) (H. Sikk)

GNSS 1400. Agnotology: The Will to Ignorance.

If the will to knowledge is a will to power, what of the will to not know? How is ignorance a resource—a form of self-protection, a source of cognitive dissonance, and a tool of political control? How is ignorance produced? This course considers epistemology from the perspective of what we don't know, what we refuse to know, and what we can't know. Drawing from philosophical, decolonial, theological, psychoanalytic, sociological, feminist, queer, and trans discourses, this interdisciplinary course explores such concepts as Glissant's "right to opacity," Sedgwick's ignorances and nonce taxonomies, and Žižek's theory of ideology as fetishistic disavowal. Texts will include Beauchamp's *Going Stealth*, Derrida's "How to Avoid Speaking: Denials," Freud's "Fetishism," Glazer's *Zone of Interest*, C. Mills's "White Ignorance," Moten's "Blackness and Nothingness," Ozeki's *My Year of Meats*, Rivi re's "Woman as Masquerade," and Smithson's "Social Theories of Ignorance."

Fall GNSS1400 S01 18948 TTh 2:30-3:50(12) (D. Davis)

GNSS 1810. Independent Study and Research.

Independent reading and research for upper-level students under the direction of a faculty member. Please check Banner for the correct section number and CRN to use when registering for this course.

GNSS 1820. Independent Study and Research.

Independent reading and research for upper-level students under the direction of a faculty member. Please check Banner for the correct section number and CRN to use when registering for this course.

GNSS 1970. Directed Research and Thesis.

Independent research under the direction of a faculty member, leading to a thesis. Required of honors candidates. Open to seniors only. Instructor permission required.

GNSS 1980. Directed Research and Thesis.

Independent research under the direction of a faculty member, leading to a thesis. Required of honors candidates. Open to seniors only. Instructor permission required.

GNSS 1990. Senior Seminar.

A research seminar focusing on the research and writing of the participants. Required of senior concentrators; open to other advanced students by permission.

Fall GNSS1990 S01 18155 T 4:00-6:30(07) (H. Sikk)

GNSS 2000. Method, Evidence, Critique: Gender and Sexuality Studies across the Disciplines.

Gender and Sexuality Studies is by its very nature interdisciplinary. Can we speak of any single methodology that ties GNSS together? How might scholars working on gender/sexuality acknowledge disciplinary boundaries and use disciplinary training effectively? We will start with the premise that studies in gender and sexuality are tied together by questioning foundational assumptions within a given field of knowledge and taking account of our own subject positions vis-  vis our objects of study. By studying canonical theoretical texts alongside disciplinary studies characterized by a feminist and/or queer focus, we will investigate how gender and sexuality are constructed in various contexts, what kind of work they do, and how standards of evidence are marshaled in particular disciplines. Particular attention will be given to the role of critique, affect, and materialisms, including the materiality of language, in gender and sexuality studies.

Spr GNSS2000 S01 26244 Th 1:00-3:30 (D. Davis)

GNSS 2010R. Pembroke Research Seminar - Unwriting the Anthropocene: A Call to Experiment.

This seminar experiments with form to think about writing and poetics as modes of embodied experience. What are the ways to trace the presences and absences of the colonial Anthropocene? How do we write, visualize, engage with the disappeared and extinct, but also the processes of metamorphosis, metabolics, desire, and queer and trans ecologies that are entangled with anthropogenic crisis? How do the elements of environmental writing underscore the means by which to enliven forms of care, repair, and belonging towards a post-extractive world? We attend to Indigenous, Africana, Latinx, Asian, Arab, and Global South perspectives, modes of narration, visibility and experimentation asking throughout how gender and sexuality shift what we know and how we write about it. Through refining our literary and visual arts, frequencies, and embodied engagements, we address collective practices that erode and unwrite the Anthropocene.

Fall GNSS2010FS01 18134 W 10:00-12:30 (M. Gomez-Barris)

GNSS 2020R. Pembroke Research Seminar - Unwriting the Anthropocene: A Call to Experiment.

This seminar experiments with form to think about writing and poetics as modes of embodied experience. What are the ways to trace the presences and absences of the colonial Anthropocene? How do we write, visualize, engage with the disappeared and extinct, but also the processes of metamorphosis, metabolics, desire, and queer and trans ecologies that are entangled with anthropogenic crisis? How do the elements of environmental writing underscore the means by which to enliven forms of care, repair, and belonging towards a post-extractive world? We attend to Indigenous, Africana, Latinx, Asian, Arab, and Global South perspectives, modes of narration, visibility and experimentation asking throughout how gender and sexuality shift what we know and how we write about it.

Through refining our literary and visual arts, frequencies, and embodied engagements, we address collective practices that erode and unwrite the Anthropocene.

Spr	GNSS2020FS01	26243	W	10:00-12:30	(M. Gomez-Barris)

GNSS 2450. Exchange Scholar Program.

GNSS 2720. Graduate Independent Study.

Section numbers vary by instructor. Instructor's permission required.

GNSS XLIST. Courses of Interest to Concentrators in Gender and Sexuality Studies.

German Studies

German Studies

GRMN 0100. Beginning German.

A course to learn the German language and about the culture of German-speaking countries. For students interested in gaining a deeper understanding of German history, philosophy, literature, art, music and business through knowledge of the German language. Helps prepare for internships and study abroad, may introduce you to the language of your heritage or to a totally new language, positions you well for further language study, research or other opportunities. 4 hours per week. No previous knowledge of German required.

Fall	GRMN0100	S01	17237	MWF	9:00-9:50(09)	(J. Sokolosky)
Fall	GRMN0100	S01	17237	T	12:00-12:50(09)	(J. Sokolosky)
Fall	GRMN0100	S02	17238	MWF	11:00-11:50(16)	(J. Sokolosky)
Fall	GRMN0100	S02	17238	T	12:00-12:50(16)	(J. Sokolosky)
Fall	GRMN0100	S03	17239	MWF	12:00-12:50(15)	(J. Sokolosky)
Fall	GRMN0100	S03	17239	T	12:00-12:50(15)	(J. Sokolosky)

GRMN 0110. Intensive Beginning German.

An intensive, double-credit language course that meets three days a week and focuses on speaking, listening, reading and writing skills and the cultures of the German-speaking countries. At the end of the semester, students will be able to communicate successfully about everyday topics relating to the university, jobs, daily life and traveling. Ideal for undergraduate students interested in learning German for study abroad or for concentration requirements and for graduate students interested in starting their foreign language requirements. The course is designed for new students of German, regardless of any previous experience with German.

Spr	GRMN0110	S01	25646	MWF	1:00-2:50	(J. Fine)

GRMN 0200. Beginning German.

A course to learn the German language and about the culture of German-speaking countries. For students interested in gaining a deeper understanding of German history, philosophy, literature, art, music and business through knowledge of the German language. Helps prepare for internships and study abroad, may introduce you to the language of your heritage or to a totally new language, positions you well for further language study, research or other opportunities. Students interested in this course who have not taken GRMN 0100 should contact the instructor.

Spr	GRMN0200	S01	25649	MWF	9:00-9:50(02)	(J. Fine)
Spr	GRMN0200	S01	25649	T	12:00-12:50(02)	(J. Fine)
Spr	GRMN0200	S02	25650	MWF	12:00-12:50(01)	(J. Fine)
Spr	GRMN0200	S02	25650	T	12:00-12:50(01)	(J. Fine)

GRMN 0300. Intermediate German I.

Focuses on deepening students' understanding of modern German culture by reading texts and viewing films pertinent to Germany today. Intended to provide a thorough review of German grammar and help students develop their writing, reading, listening, and speaking skills. Recommended prerequisite: GRMN 0200.

Fall	GRMN0300	S01	17240	MWF	10:00-10:50(14)	(J. Sokolosky)
Fall	GRMN0300	S01	17240	Th	12:00-12:50(14)	(J. Sokolosky)
Fall	GRMN0300	S02	17241	Th	12:00-12:50(08)	(J. Sokolosky)
Fall	GRMN0300	S02	17241	MWF	1:00-1:50(08)	(J. Sokolosky)

GRMN 0400. Intermediate German II.

An intermediate German course that stresses improvement of the four language skills. Students read short stories and a novel; screen one film; maintain a blog in German. Topics include German art, history, and

literature. Frequent writing assignments. Grammar review as needed. Four hours per week. Recommended prerequisite: GRMN 0300.

Spr	GRMN0400	S01	25651	MWF	10:00-10:50(03)	(J. Fine)
Spr	GRMN0400	S01	25651	Th	12:00-12:50(03)	(J. Fine)
Spr	GRMN0400	S02	25652	Th	12:00-12:50(06)	(J. Fine)
Spr	GRMN0400	S02	25652	MWF	1:00-1:50(06)	(J. Fine)

GRMN 0500F. Twentieth-Century German Culture.

A broad exploration of twentieth-century German culture using many kinds of written and visual texts (e.g. literature, journalism, film, art). While continuing to work on all four language skills (speaking, listening, reading, writing) students will gain more intensive knowledge about German culture, society, and history. In German. Recommended prerequisite: GRMN 0400.

Fall	GRMN0500FS02	17243	MWF	11:00-11:50(16)	(C. Obst)
Fall	GRMN0500FS03	19013	MWF	9:00-9:50(09)	(C. Obst)

GRMN 0600B. Was ist Deutsch?

In this course we will examine some of the ideas and myths that became entangled with the emerging notion of a "German" identity in the eighteenth and nineteenth centuries. Some of the terms that we will discuss include 'Kultur,' 'Bildung,' 'Freiheit' and 'Gesellschaft,' all of which have rich semantic histories. Conducted in German. Recommended prerequisite: one course in the GRMN 0500 series.

Spr	GRMN0600BS01	25653	MWF	11:00-11:50(04)	(C. Obst)

GRMN 1321A. Sadistic Reasoning: 'Kant with Sade'.

As Theodor W. Adorno, Max Horkheimer, and Jacques Lacan recognized, there is a certain structural affinity between Immanuel Kant's discourse of practical reason and the discursive practices of the Marquis de Sade. In this course, participants will consider the sadistic traits of reason that are registered and analyzed in the corpuses of Kant, Sade, Adorno, Horkheimer, and Lacan, among others. What is at stake, however, is not only (another) "critique of reason," but also the ethical alternatives that emerge through reading and analyzing these bodies of literature.

Spr	GRMN1321A/S01	25841	TTh	10:30-11:50(09)	(K. Mendicino)

GRMN 1321B. Zeitungsmacher und Kalendermann: Matthias Claudius und Johann Peter Hebel.

Between 1771 and 1775 Matthias Claudius published, as its only editor, the newspaper Der Wandsbecker Bote. In 1775, after its discontinuation, Claudius started collecting his own contributions to the newspaper and to publish them under the title Sämtliche Werke des Wandsbecker Boten. Similarly, yet differently, another project—a calendar addressed to the peasant population of Baden—materialized 40 years later: Der Rheinländische Hausfreund, written by Johann Peter Hebel, who edited the calendar between 1808 and 1815. Due to its huge success, the best stories from the first four issues were published as a book in 1811: Schatzkästlein des rheinischen Hausfreunds. This extraction of their contributions for both newspaper and calendar underlines the subversive character of Claudius' and Hebel's projects. Both their writings went beyond the day: into a sphere where chronological and calendaric time implode.—Taught in German.

Fall	GRMN1321BS01	17438	TTh	10:30-11:50(13)	(T. Schestag)

GRMN 1321C. Zur Frage des Besitzes.

In 1803 the German jurist and historian Carl Friedrich von Savigny publishes a civil treatise Das Recht des Besitzes, dealing with the question of how to describe and justify private property as possession. Almost 50 years later, Jacob Grimm delivers a lecture under a similar yet slightly—and decisively—different title: Das Wort des Besitzes, dealing not only with the history and semantics of the word Besitz but with the word itself. His lecture transforms a juridical question into a linguistic one: how is it possible (and is it possible at all) to possess a word? In other words: to turn a language into one's own in order to possess it? The seminar will discuss aspects of this question in philosophical, linguistic, and literary texts by (among others) Kant, Babeuf, Proudhon, Hölderlin, Marx, Droste-Hülshoff, and Franz Kafka.—Taught in German.

Spr	GRMN1321C/S01	25840	TTh	9:00-10:20(05)	(T. Schestag)

GRMN 1340M. Kafka's Writing.

Writing—vocation or duty, gift or curse, poison or antidote? This course provides an introduction to Kafka's stories, novels, journal entries, and letters, with a focus on his complicated, tortured relationship to the

idea and practice of writing. We will explore how the difficulties of this relationship generate an enigmatic, tragi-comic oscillation between hope and despair that continues to fascinate readers today. This is a writing-intensive course, and the frequent short assignments will involve drafts, revisions, and individual consultations, with the aim of getting you to think critically about your own relationship to writing about literature. In English. Enrollment limited to 40. First year students require instructor permission.

Fall GRMN1340!S01 17283 M 3:00-5:30(03) (Z. Sng)

GRMN 1441N. Bertolt Brecht, Peter Weiss, Alexander Kluge – Theater, Prosa, Film.

This course features three authors who have each in their own way made significant contributions to critical literature and thinking. We will start with Brecht's revolutionary approach to the theory and practice of theater and with selections from his short prose and explore some of his seminal texts on these subjects. Peter Weiss's and Alexander Kluge's work is less well known in the English-speaking world, but they also performed groundbreaking work in the areas of historical and documentary literature and in experimental film and literature. In German

Fall GRMN1441!S01 17437 TTh 1:00-2:20(06) (T. Kniesche)

GRMN 1441O. Childhood Imaginaries: Romanticism, Psychoanalysis, and Beyond.

Since the Enlightenment, childhood has been at the center of the Western imagination. In German-language literature, political models of society, psychological theories on the dynamics of thinking and feeling, and critical discussions of history are often negotiated on the basis of an outline of what childhood is. This is because studying how humans develop promises to provide insight into what it means to be human and permits one to construct images of how humans should live. This line of thought breaks from a centuries-old convention of equating children with animals due to their lack of articulate speech and regretting this phase. In this course, we will read key texts of German-language literature from the Enlightenment to the present day that expound childhood as a special, formative epoch of individual life that, at the same time, grants insight into social dynamics.

Spr GRMN1441!S01 26590 TTh 1:00-2:20(08) 'To Be Arranged'

GRMN 1441P. What Are We Looking At? Paradoxes of the Visual.

In Western cultures, the visual sense has traditionally received preferential treatment, having been associated most closely with knowledge and understanding, as demonstrated by the words 'evidence' and 'theory.' Especially at academic institutions, we want both 'overview' and 'insight,' to 'look at' something 'very closely,' and examine it through various 'lenses' (theoretical frameworks). On the other hand, there is also the obverse, where the optical stands for superficiality, mere appearance, and even deception and confusion. In other words, when we take a closer look at 'seeing,' things appear more complicated than they did at first glance. Texts and movies by Plato, Sophocles, Sigmund Freud, Walter Benjamin, E.T.A. Hoffmann, Goethe, Kleist, Oscar Wilde, Gotthold Ephraim Lessing, Stéphane Mallarmé, Tuvia Ruebner, Michel Foucault, Paul de Man, Wim Wenders, Rainer Werner Fassbinder, and Toni Morrison. Taught in English, no prerequisites.

Fall GRMN1441!S01 19010 MWF 1:00-1:50(08) (C. Obst)

GRMN 1970. Independent Study.

Independent study on a particular topic related to German culture. In German or English. At the discretion of the instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

GRMN 1990. Senior Conference.

Special work or preparation of an honors thesis under the direction of a faculty member. Please check Banner for the correct section number and CRN to use when registering for this course.

GRMN 2450. Exchange Scholar Program.

Fall GRMN2450 S01 16576 Arranged 'To Be Arranged'

Fall GRMN2450 S02 16577 Arranged 'To Be Arranged'

Spr GRMN2450 S01 25238 Arranged 'To Be Arranged'

GRMN 2662S. Dichter—Troubadour—Poet : Gedicht—Tropus—Poem.

What is called poem, poet and poetry, in English today, is called differently, in different languages at different times. The semantics of German Dichter,

Gedicht and Dichtung differ considerably from their Greek equivalents – poieîn, polema, poietês –. A third case, indicated by the names trobador, trouvère and troubadour, opens yet another field: of invention, discovery, and unexpected turns. This seminar will explore all three manifestations of poetic, dichterische or inventive explanations with what is called language in both their incompatibilities and similarities. Texts to be read and discussed will include Emily Dickinson, Ezra Pound and George Oppen; Martin Heidegger, Paul Celan, Emil Staiger, Eduard Mörike; Sappho, Plato, Aristotle, Jesper Svenbro; Cicero, Quintilian, Jacques Roubaud, Jean de La Fontaine, Guillaume IX d'Aquitaine, Daniel Arnaud, and Jaufre Rudel.

Fall GRMN2662!S01 17440 T 4:00-6:30(07) (T. Schestag)

GRMN 2662T. The Darkness of the Lived Moment.

What is a moment? What will a moment have meant? Is a moment completely over as long as I can still conjure it in memory? The more one thinks about the moment, the more inscrutable it appears. Seemingly the most basic of experiences, the moment remains nevertheless shrouded in darkness, as already Plato, in the late dialogue Parmenides, worried. Our seminar will examine the "darkness of the lived moment," as Ernst Bloch, the great political philosopher of hope, named it. What appears in the immediacy of our experience, is actually far removed from our understanding, but it does open onto an unforeclosed futurity. We will contemplate this darkness of the lived moment in a constellation of works drawn from literature and the arts; and in relation to theoretical texts by such thinkers as Bloch, Hegel, Nietzsche, Freud, Heidegger, and Blanchot.

Spr GRMN2662!S01 25842 M 3:00-5:30(13) (G. Richter)

GRMN 2662U. Witnessing Totalitarianism: Fascism, Communism, and their Aftermath in German-language Literatures.

The memory of National Socialism has been as mainstay of post-1990 German politics and culture. However, at least with the end of the Cold War, national German memory culture has also been challenged by non-national perspectives, especially by the necessity to commemorate the entanglement of National Socialism with Communist totalitarianisms and to situate German memory culture within a Central and Eastern European context. To engage with this tension, we will read theoretical texts that continue to inform current memory debates (Arendt, Mitscherlich), recent social sciences approaches to transgenerational transmissions of psycho-social sequelae of perpetration and complicity (Welzer & al., Mihai, Gobodo-Madikizela), and literary texts that have brought transgenerational transmissions into the focus of public attention (Bernhard, Sebald), in order then to focus on contemporary German-language texts that negotiate the difficulties of commemorating totalitarianisms.

Spr GRMN2662!S01 26394 W 3:00-5:30(10) 'To Be Arranged'

GRMN 2662V. Under Analysis: On the History of Truth and the Subject of Science.

The resonances between the oeuvres of Martin Heidegger and Jacques Lacan far exceed such passages as the one from "The Instance of the Letter in the Unconscious, or Reason Since Freud" where Lacan explicitly alludes to his French translation of Heidegger's essay "Logos (Heraclitus, Fragment 50)." In this seminar, participants will probe the various ways in which Heidegger's meditations on the historical essence of truth and the metaphysical framework of modern science intersect with Lacan's analytic formulations concerning the fictional structure of truth and the subject of science. Special attention will be given to their respective conjugations of being, logic, and language, as well as the literary writings that inflect their approaches to placing truth, subjectivity, and science in question.

Fall GRMN2662!S01 17775 W 3:00-5:30(10) (K. Mendicino)

GRMN 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the Registration Fee to continue active enrollment while preparing for a preliminary examination.

Fall GRMN2970 S01 16578 Arranged 'To Be Arranged'

Spr GRMN2970 S01 25239 Arranged 'To Be Arranged'

GRMN 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

GRMN 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	GRMN2990	S01	16579	Arranged	'To Be Arranged'
Spr	GRMN2990	S01	25240	Arranged	'To Be Arranged'

GRMN XLIST. Courses of Interest to Students Concentrating in German Studies.**Hispanic Studies****HISP 0100. Basic Spanish.**

This fast-paced beginning course provides a solid foundation in the development of communicative skills in Spanish (speaking, listening comprehension, reading and writing) as well as some insight on the cultures of the Spanish-speaking world. Individual work outside of class prepares students for in-class activities focused on authentic communication. Placement: students who have never taken Spanish before, or have scored below 390 in SAT II, or below 240 in the Brown Placement Exam. Students who have taken Spanish before and those with an AP score of 3 or below must take the Brown Placement Exam. Students should check Placement and Course Description in the Undergraduate Program section of the Hispanic Studies Website. Enrollment limited to 15; 12 spaces are available for students during pre-registration. 3 spaces will be available at the start of the semester for incoming or re-admitted students who should attend the first class. Pre-enrolled students must attend the first four days of class to maintain their pre-registered status and notify the instructor in advance if they must miss any day before the 4th class when the composition of the course section is finalized.

Fall	HISP0100	S01	17637	MW	9:00-9:50(05)	(S. Sobral)
Fall	HISP0100	S01	17637	TTh	9:00-10:20(05)	(S. Sobral)
Fall	HISP0100	S02	17638	MW	10:00-10:50(13)	(S. Sobral)
Fall	HISP0100	S02	17638	TTh	10:30-11:50(13)	(S. Sobral)
Fall	HISP0100	S03	17639	MW	1:00-1:50(06)	(S. Sobral)
Fall	HISP0100	S03	17639	TTh	1:00-2:20(06)	(S. Sobral)
Fall	HISP0100	S04	17640	TTh	1:00-2:20(06)	(S. Sobral)
Fall	HISP0100	S04	17640	MW	2:00-2:50(06)	(S. Sobral)

HISP 0300. Intermediate Spanish I.

This course involves about 14-15 hours of work/week. It carries on the work initiated in HISP0110-100-200 to develop and strengthen students' linguistic, communicative, academic, and multicultural competencies. It continues to focus on the integration of grammar, vocabulary, and discourse work to advance competence and proficiency in Spanish and to support further development of communication in all the modalities. This course is framed by an inclusive perspective on learning and embraces diverse identities and communities in the Hispanic World. It fosters a community of learning among students and offers a variety of texts, themes, and topics related to students' academic and life experiences that also help them develop professional skills. Enrollment is limited to 12. Pre-enrolled students must attend the first four days of class to maintain their pre-registered status and notify the instructor in advance if they must miss any day before the 4th class when the composition of the course section is finalized.

Pre-requisite: students with an AP score of 3 or below must take the Brown Placement Exam.

Fall	HISP0300	S01	17641	MW	10:00-10:50(13)	'To Be Arranged'
Fall	HISP0300	S01	17641	TTh	10:30-11:50(13)	'To Be Arranged'
Fall	HISP0300	S02	17642	MW	12:00-12:50(06)	'To Be Arranged'
Fall	HISP0300	S02	17642	TTh	1:00-2:20(06)	'To Be Arranged'
Fall	HISP0300	S03	17643	MW	9:00-9:50(05)	'To Be Arranged'
Fall	HISP0300	S03	17643	TTh	9:00-10:20(05)	'To Be Arranged'

HISP 0400. Intermediate Spanish II.

A continuation of HISP 0300. This course continues to develop and strengthen students' linguistic, communicative, academic, and multicultural competencies. It focuses on content and language integration and creates opportunities to use the language in interdisciplinary scenarios related to diverse academic experiences. Enrollment is limited to 15. Pre-enrolled students must attend the first four days of class to maintain their pre-registered status and notify the instructor in advance if they must miss any

day before the 4th class when the composition of the course section is finalized.

Prerequisite: HISP 0300 or placement: SAT II scores between 520 and 590 or Brown Placement Exam scores between 411 and 490. Students with an AP score of 3 or below must take the Brown Placement Exam. Students should check Placement and Course Description in the Undergraduate Program section of the Hispanic Studies Website.

Fall	HISP0400	S01	17644	MWF	10:00-10:50(14)	(E. Gomez Garcia)
Fall	HISP0400	S01	17644	TTh	10:30-11:50(14)	(E. Gomez Garcia)
Fall	HISP0400	S02	17645	MW	2:00-2:50(12)	(E. Gomez Garcia)
Fall	HISP0400	S02	17645	TTh	2:30-3:50(12)	(E. Gomez Garcia)

HISP 0490A. Spanish for Health Care Workers.

This course provides students with the linguistic and cultural competencies necessary to communicate and help treat Spanish speaking patients with limited English. It includes a general review of pertinent grammar and vocabulary relating to health care professions, assessment, and vocabulary useful for establishing patient rapport. Students will practice communicating in common medical situations, conducting patient interviews, and increase their understanding of possible responses from patients. We will broaden knowledge of different cultures, explore health care systems/ professions in a variety of settings, and have pertinent speakers invited to class. This course does not qualify as a pre-requisite for study abroad or for HISP 0600. Students who complete 0490A successfully can continue with HISP 0500 as the next level. This is an intermediate level language course so if you have taken a 600 course or above, you will be too advanced.

Fall	HISP0490A	S01	17646	MWF	11:00-11:50(16)	(J. Kuhnheim)

HISP 0500. Advanced Spanish I.

Offers comprehensive work in listening, speaking, reading, and writing, with targeted grammar review. Students work with a variety of readings (literature, newspaper articles, etc.) and with art forms such as music and film, in order to develop oral and written expression and to explore issues relevant to the Hispanic world. Students explore topics of their own interest through student-led activities and presentations. Prerequisite: HISP0400 or placement: SAT II scores between 600 and 660, Brown Placement Exam scores between 491 and 570, or AP score of 4 in language or literature. Please check Hispanic Studies website (Undergraduate Programs) for course descriptions and placement information. Enrollment limited to 15; 12 spaces are available for students during pre-registration. 3 spaces will be available at the start of the semester for incoming or re-admitted students who should attend the first class. Pre-enrolled students must attend the first four days of class to maintain their pre-registered status and notify the instructor in advance if they must miss any day before the 4th class when the composition of the course section is finalized.

Fall	HISP0500	S01	17647	MW	9:00-9:50(05)	(S. Sobral)
Fall	HISP0500	S01	17647	TTh	9:00-10:20(05)	(S. Sobral)
Fall	HISP0500	S02	17648	MW	10:00-10:50(13)	(S. Sobral)
Fall	HISP0500	S02	17648	TTh	10:30-11:50(13)	(S. Sobral)
Fall	HISP0500	S03	17649	MW	1:00-1:50(06)	(S. Sobral)
Fall	HISP0500	S03	17649	TTh	1:00-2:20(06)	(S. Sobral)

HISP 0550. Intermediate Spanish for Heritage Speakers.

Heritage speakers of Spanish are students who understand and speak Spanish to some degree but have not yet had formal education in Spanish. This course is specifically for students who already possess intermediate communicative skills and can communicate effectively in their home and community. This course is designed to validate, strengthen and expand the previous linguistic and cultural knowledge students bring to the classroom. Through a variety of authentic materials, students will explore issues of identity, linguistic rights, equality, and social justice, while developing their Spanish range to include formal registers, and honing their oral communication, reading and writing skills.

Fall	HISP0550	S01	17650	TTh	1:00-2:20(06)	(E. Gomez Garcia)

HISP 0600. Advanced Spanish II.

Advanced-level work in speaking, listening, reading, and writing, with focused review of challenging Spanish grammar. Course materials include films, music, art works, and a variety of written texts chosen to promote class discussion and in-depth written analysis. There will be individual and group activities, including in-class presentations and creative writing

projects. Prerequisite: HISP0500 or placement: SATII scores between 670 and 740, Brown Placement Exam scores between 571 and 650, or AP score of 5 in language. Enrollment limit 12. Pre-enrolled students must attend the first four classes to maintain their status and notify the instructor in advance if they must miss any day before the 4th class when the course section is finalized. Students with scores of 750 and above on the SAT II, 551 on the Brown Placement Exam, or 5 in AP Literature should consider HISP 0730-0740-0750 range.

Fall	HISP0600	S01	17651	MWF	9:00-9:50(09)	'To Be Arranged'
Fall	HISP0600	S02	17652	MWF	11:00-11:50(16)	'To Be Arranged'
Fall	HISP0600	S03	17653	MWF	12:00-12:50(15)	'To Be Arranged'

HISP 0650. Advanced Spanish Through Literature & Film.

HISP 0650 aims to study literature and film from Latin America and Spain through critical reading and analytical writing. This section is thematic: the majority of its contents revolve around the representation of the self. We will read first person literature, autobiographies, diaries, and myriad other genres, focusing on how they inform our notions of memory, authorship and identity. The course will serve as an introduction to the literatures and cultures of the Spanish-speaking world, covering a range of periods and genres (the story, the novel, poetry, film, and non-fiction). Beyond offering a historical and contextualized panorama of cultural production from the Spanish-speaking world, HISP 0650 will also help you develop new strategies for reading, writing, and thinking about literature and film, preparing you for more advanced literature and culture courses at the 1000 level.

Fall	HISP0650	S01	17654	TTh	10:30-11:50(13)	(A. Rosenberg Navarro)
Fall	HISP0650	S02	17655	MWF	1:00-1:50(08)	(D. Parsard)

HISP 0710F. Introduction to Literary Translation.

This course provides students with an opportunity to enter the fray: working as literary translators, reading texts that reflect on the nature of translation, and considering this frustrating, gratifying, and meaningful field of study and practice for themselves. It offers students an introduction to the field of translation studies (mostly via texts in English, but with discussion in Spanish) as well as a foundation of experience in the practice of literary translation, predominantly from Spanish to English, but with opportunities for translating from English to Spanish or either of these languages to another one. The course is highly interactive, with students frequently called upon to reflect on their experience as translators, and dialogue about this experience with their peers. Throughout the semester, we will engage in regular workshops, with students sharing their work and collaborating with one another throughout.

Fall	HISP0710F	S01	18400	TTh	1:00-2:20(06)	(S. Thomas)

HISP 0750N. Muslims, Christians, and Jews in Medieval Spain.

Spain was one of the most culturally diverse parts of Europe throughout the Middle Ages, with Muslims, Jews, and Christians living side by side in both the Christian and Muslim kingdoms of the Iberian peninsula for nearly eight centuries (711-1492), in fluctuating peace and tension. Uninterrupted contact produced richly complex patterns of cultural exchange whose legacy is variously embraced and debated today. This first-year seminar will examine relationships between Muslims, Jews, and Christians from the perspectives of literature, music, art, architecture, archaeology, and history. While largely focusing on the centuries of co-existence, we will also consider the expulsions and forced conversions of Jews and Muslims that took place after 1492, as well as the resurgence of these communities in contemporary Spain. Throughout, students will acquire theoretical bases for understanding current interreligious conflict and for envisioning its repair. Instruction in Spanish.

Fall	HISP0750N	S01	17657	TTh	2:30-3:50(12)	(L. Bass)

HISP 1210E. History of Romance Languages.

The Romance family is one of the most widely-spoken and politically important language families. The aim of this course is to introduce students to the history and linguistic characteristics of the Romance family. Our purpose is to learn the factors that led to the development of modern standard Romance languages, and provide an understanding of Romance structures and their linguistic relationships. The course covers language families; genetic relationships (family trees); typological comparison; internal versus external history; language contact and borrowing; Romance Pidgins and Creoles; Standard language versus dialect; social

variation; concepts of Phonetics and Phonology; Morphology; Syntax; Semantics; Lexicon. In English.

Fall	HISP1210E	S01	18522	TTh	10:30-11:50	(M. Vaquero)

HISP 1290W. De abuelas a nietas: escritoras españolas y latinoamericanas de 1925 a 2025.

This course delves into the literature produced by Spanish and Latin American women writers over the past century. We will explore novels, short stories, essays, letters, and chronicles. These narratives form "one hundred years of solitude" story, as many of these authors have been sidelined in a literary scene dominated by male voices. We will bridge connections across Spanish-speaking regions and explore how conditions such as gender inequality, family structures, and exile, have consistently molded the discourses and works of these remarkable women. Help us unearth these writers from the dusty shelves of libraries and rescue them from invisibility.

Fall	HISP1290W	S01	18820	Th	4:00-6:30(04)	(E. Durante)

HISP 1371R. Detention and Freedom in the Americas.

On a continent where pretexts for the privation of liberty range from criminal activity to political beliefs to cross-border migration, creative writing - as Chilean-American writer and human rights activist Ariel Dorfman once commented - has a powerful relationship to hope and survival. In this course, we will read poetry, short fiction and testimonial writing from spaces of detention across Latin America and the U.S., asking how subjects in detention represent themselves, their aspirations to freedom, their physical and social environment, and the languages of defense and protection that ostensibly justify their detention. Primary texts by contemporary writers in Cuba, Mexico, Argentina, the U.S. and at the Guantánamo Bay Naval Base; readings and class discussion in Spanish.

Fall	HISP1371R	S01	18402	TTh	10:30-11:50(13)	(E. Whitfield)

HISP 1371U. Posthuman Latin America: Contemporary Imagination and Visions of the Future.

What does it mean to be human? Does the human experience have limits? What happens when we stop being at center stage and something else, animals, plants, technology, the climate, starts occupying our place? Historically, answers to these questions have come from U.S., European and Asian culture, their film industry, literature, speculative artifacts, and academia. In this class, however, we will search to answer these questions from the perspective of Latin American, a standpoint marked by cultural multiplicity, sociopolitical complexity, uneven development, and radical imagination. Starting with Latin American historians who have written on who is and who gets to be human in the region, we will explore various aspects of the Latin American human and posthuman condition through analyzing non-textual media, literature, cultural essays, and the historical framework that produced them. We will concentrate on materials from Argentina, Bolivia,

Fall	HISP1371U	S01	18639	TTh	9:00-10:20(05)	(S. Antezana Quiroga)

HISP 1980. Independent Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HISP 1990. Senior Thesis Preparation.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HISP 2160M. Early Modern Madrid: The Cultural Creation of a Court Capital.

This seminar studies Madrid's transformation from a secondary market town into the epicenter of Spain's global monarchy under the Spanish Habsburgs and how that transformation fueled, and was fueled by, literary and artistic production. The intersection of the court and the city that rapidly expanded around it made Madrid not only Spain's imperial capital, but its cultural capital as well through a confluence of overlapping and competing social interests. Topics include: negotiations of the global and the local in historical chronicles and municipal festivities; the centrality of the theater in urban socialization; the use of poetry for self-fashioning; the transmission of political news. We will study authors canonical (e.g., Lope de Vega, Calderón, Zayas) and lesser known (e.g., Liñán y Verdugo). While Madrid will be our focus, we will give comparative consideration to other cities of the early modern world.

Fall HISP2160M S01 18401 W 3:00-5:30(10) (L. Bass)

HISP 2351E. Book-Objects.

"To survive", wrote Mexican writer-turned-artist Ulises Carrión in 1979, "books need to change their form". This seminar looks at a century of experiments with the form of the book in Latin America, attending to shifting relations between form, content, materiality, and circulation. We will look at avant-garde and neo-avant-garde poetry (Girondo and Cendrars through de Campos and Martínez); books that mimic forms of mapping and travel (Concha Méndez, Bellessi, Thenón, Obrigado); plays with the shape of the book by some established writers (Cortázar, Arguedas, Piglia, Saer); and experiments with different forms of production and circulation (cartoneras, graphic novels, photo-books).

Fall HISP2351E S01 18675 F 3:00-5:30(11) (M. Clayton)

HISP 2450. Exchange Scholar Program.

HISP 2520T. Archive Theory: Imagining Absence Otherwise (HMAN 2401X)..

Interested students must register for HMAN 2401X.

Fall HISP2520T S01 18659 Arranged 'To Be Arranged'

HISP 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall HISP2970 S01 16583 Arranged 'To Be Arranged'

Spr HISP2970 S01 25243 Arranged 'To Be Arranged'

HISP 2980. Research in Spanish and Latin American Literature.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HISP 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall HISP2990 S01 16584 Arranged 'To Be Arranged'

Spr HISP2990 S01 25244 Arranged 'To Be Arranged'

HISP 2990A. Learning & Teaching Spanish as a Foreign Language.

This course provides practicing and prospective teachers of Spanish as a second language (L2) with an introduction to the field of second language acquisition (SLA) and its application to language teaching methodology and pedagogy, with a specific focus on the teaching of Spanish. In addition to the theoretical discussion, there is a significant practical component to the course so you can start (or continue) to develop skills and materials for your own work as an instructor at Brown University and beyond.

Fall HISP2990A S01 17659 T 10:30-12:50(13) (S. Sobral)

HISP 2991. Thesis Preparation.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HISP XLIST. Courses of Interest to Concentrators in Hispanic Studies.

History

HIST 0150A. History of Capitalism.

Capitalism didn't just spring from the brain of Adam Smith. Its logic is not encoded on human DNA, and its practices are not the inevitable outcome of supply and demand. So how did capitalism become the dominant economic system of the modern world? History can provide an answer by exploring the interaction of culture and politics, technology and enterprise, and opportunity and exploitation from the era of the Atlantic Slave Trade to the 2008 Financial Crisis. HIST 0150 courses introduce students to methods of historical analysis, interpretation, and argument. This class presumes no economics background, nor previous history courses.

Spr HIST0150A S01 26185 MWF 1:00-1:50(06) (B. Hein)

HIST 0150C. Locked Up: A Global History of Prison and Captivity.

A long history lies behind the millions of men and women locked up today as prisoners, captives and hostages. Beginning in antiquity and ending in the present, this course draws on materials from a variety of cultures across the world to explore incarceration's centuries-old past. In examining the experience and meaning of imprisonment, whether as judicial punishment, political repression, or the fallout of war, the class

will ask fundamental questions about liberty as well. History 150 courses introduce students to methods of historical analysis, interpretation and argumentation. This course presumes no previous history courses.

Spr HIST0150C S01 26229 TTh 10:30-11:50(09) (A. Remensnyder)

HIST 0150G. History of Law: Great Trials.

Through discussion of a variety of trials spanning more than two millennia, this course will probe the nature of demonstrative and transitional justice, the relationship between ideology and law in different societies and time periods, and how trials affirm or contest legal personhood, criminal responsibility, and social marginalization. Cases to be covered include: Socrates, Jesus Christ, the French Revolutionary Terror, the Amistad case, the Dreyfus Affair, the fictional Japanese Rashomon trial, the Stalinist show trials, and the trials of Charles Manson, O.J. Simpson, Nelson Mandela, Dilma Rousseff, and Saddam Hussein (to name a few).

Fall HIST0150G S01 17805 MWF 1:00-1:50(08) (H. Case)

HIST 0150J. The Ocean in Global History.

This course examines how the ocean and its denizens have influenced and been shaped by diverse social, material, political, and cultural factors across different spaces and chronologies. We will consider how historical actors across global history have approached the ocean and its creatures as sources of sustenance and power, cosmology and knowledge, conveyance and death. We will weigh, too, how adopting an oceanic perspective can open new ways of understanding the past, present, and future of our planet and its inhabitants. Topics considered include contemporary and historic Indigenous seafaring traditions and maritime subjectivities across Moana/Pacific and other oceanic basins; Atlantic seaborne empires, piracy, human trafficking in the age of sail; the establishment of oceanography as a scholarly discipline; the evolution of maritime transportation infrastructure under global capitalism; the political ecology of a warming ocean in the era of climate crisis.

Spr HIST0150J S01 26256 TTh 1:00-2:20(08) (G. Rocha)

HIST 0150L. Ecological Imperialism.

Empires have played important roles in transforming the earth's environments for over two millennia, conquering land and transforming its ecosystems and societies to make them more profitable. This course will examine how European and other empires have reorganized the landscapes of conquered regions from the ancient empires of Rome and China to the Anglo-American empire, focusing in particular on Asia, Africa and Latin America.

Fall HIST0150L S01 17799 MWF 11:00-11:50(16) (B. Lander)

HIST 0202. African Experiences of Empire.

This is a "flipped" course on sub-Saharan Africa from the mid-nineteenth through the mid-twentieth centuries. It presupposes no knowledge of Africa and serves as an introduction to the continent. It focuses on daily life, families, and popular culture. Students will analyze change, question perspectives, and imagine life, and question what "Africa" was during the period of European imperialism. Most readings are primary sources, which include photographs, songs, and oral histories. The course is "flipped"; students' first introduction to the content comes before class meetings through the text and multi-media sources. Class meetings are dedicated to discussion and exercises, including role-playing.

Fall HIST0202 S01 17960 MWF 1:00-1:50(08) (N. Jacobs)

HIST 0203. Modern Africa: From Empire to Nation-State.

This course examines the major historical developments in Africa from 1945 to the present and pays special attention to the diversity of experiences within the vast continent. The first part focuses on Africans' varied responses to the waning European imperial project and explores different ways in which African nationalist leaders and everyday people challenged colonial administrations to ultimately achieve their independence. The second part of the class investigates the consequences and opportunities of decolonization, including questions of political legitimacy, state-building, structural adjustment programs and international aid, human rights, and civil conflicts.

Spr HIST0203 S01 26186 MWF 1:00-1:50(06) (J. Johnson)

HIST 0246. The Ottoman Empire and the Modern Middle East.

The Middle East is the only region of land to connect three continents, and is (arguably) the most controversial to discuss, or even define. Assuming no prior knowledge of a region that persistently captures headlines, this

course provides a robust introduction to modern Middle East history, with two parts: (1) a brief history of the early-modern Ottoman Empire, from the conquest of Constantinople in 1453 to imperial collapse in WWI; and (2) the dramatic remaking of Southern Europe, the Eastern Mediterranean, and North Africa into a new "Middle East/MENA" region from Ottoman partition to present times. Throughout, we explore the pivotal role of the Middle East—and narratives of its past—from a variety of "3D" perspectives, including geopolitics, water, and fossil fuels; religion/spirituality, law, and family life; art, literature, music, and sports; and nationalism, militarism, humanitarianism, and environmentalism.

Fall HIST0246 S01 17789 MWF 11:00-11:50(16) (F. Ahmed)

HIST 0252. The American Civil War.

This course, covering the period roughly from 1820-1865 and focusing mostly on 1860-1865, examines the origins of the Civil War, the war itself, and preliminary efforts at reconstruction during wartime. The class meetings and readings will focus on the transformation wrought by the war, investigating in particular certain issues relevant to current affairs: 1) enslavement, emancipation, and struggles for equality; 2) sectionalism, secession, and insurrection; 3) the role of law in the prosecution and resolution of war; and 4) the role of the Civil War in American popular culture and politics. There are no prerequisites--the course is accessible to students at all levels--but some knowledge of U.S. history might be useful.

Fall HIST0252 S01 17800 MWF 12:00-12:50(15) (M. Vorenberg)

HIST 0253. Religion, Politics, and Culture in America, 1865 - Present.

Religion has played an undeniable role in the contemporary American cultural landscape. This course lends some perspective on the present by investigating the various and, at times, surprising role religion has played in history in the shaping of American culture from 1865 to the present.

Fall HIST0253 S01 17801 MWF 12:00-12:50(15) (L. Fisher)

HIST 0254. Reconstruction and the Politics of Violence.

Examines Reconstruction (conventionally, 1863-1877, and often called the first civil rights revolution in the United States), and the political violence used to combat it. The course places the events of this period in the broader American history of civil rights and the American penchant for political violence, with particular attention to antebellum mobbing, the Civil War, and Jim Crow lynching, but also looking at other forms of political violence such as Native American dispossession and labor unrest.

Spr HIST0254 S01 26233 MWF 10:00-10:50(03) (C. Grasso)

HIST 0255A. Mexican American History.

This course provides a comprehensive historical examination of ethnic Mexicans in the United States. Students first address Native American societies prior to European colonization in order to understand the historical antecedents of Mexican people in the US. Proceeding chronologically, students then examine how the Spanish colonial era, Mexican Independence, and other major events during the nineteenth century shaped the "Mexican American" experience. We also explore the history of Mexican community in the U.S. during the American conquest of the Southwest, the twentieth century immigration experience, and the development of diverse Mexican American communities after 1900. By utilizing primary and secondary sources, we will explore major questions, theory, and research methods pertinent to Mexican American & Chicano/a/x history, including, immigration, xenophobia, ethnic identity formation, gender, articulations of race and labor in urban and rural settings, political activism, and urban cultures.

Spr HIST0255A S01 26193 TTh 9:00-10:20(05) (M. Ocegueda)

HIST 0285A. Modern Genocide and Other Crimes against Humanity.

This lecture course explores genocide and other crimes against humanity across the world during the 20th century. We will discuss the origins of modern genocide in the transition to modernity and subsequent conceptualizations of this phenomenon; review examples of colonial, imperial, racial, communist, anti-communist, and post-colonial genocides; discuss war crimes and other mass crimes perpetrated by authoritarian regimes; and consider policies of mass deportation and ethnic cleansing. This course will conclude with a discussion of attempts by the international community to prevent and punish genocide along with various ways in which genocide has been commemorated or denied.

Spr HIST0285A S01 26230 TTh 2:30-3:50(11) (O. Bartov)

HIST 0286A. History of Medicine I: Medical Traditions in the Old World Before 1700.

People have always attempted to promote health and prolong life, and to ameliorate bodily suffering. Those living in parts of Eurasia also developed textual traditions that, together with material remains, allow historians to explore their medical practices and explanations, including changes in their traditions, sometimes caused by interactions with other peoples of Europe, Asia, and Africa. We'll introduce students to major medical traditions of the Old World to 1700, with emphasis on Europe, and explore some reasons for change. A knowledge of languages and the social and natural sciences is welcome not required. P

Spr HIST0286A S01 26238 MWF 9:00-9:50(02) (H. Cook)

HIST 0537A. Popular Culture in Latin America and the Caribbean.

From tango to plastic surgery, Donald Duck to reggaeton, this course places popular culture at the center of modern Latin American and Caribbean history. How, we will ask, did popular culture reflect and shape struggles over national belonging? How did foreign cultural products come to bear on international relations and transnational flows? In what contexts has culture served as a vehicle of resistance to dominant ideologies and systems of power? Far from a mere "diversion," popular culture instead offers a compelling lens onto the relationship between state and society in Latin America and beyond.

Spr HIST0537A S01 26713 M 3:00-5:30(13) (J. Lambe)

HIST 0657A. Early American Lives.

This is a writing-designated (WRIT) course that examines the intersection of biography and history. We will focus on 17 to 19th c. North America and read studies of a female Mohawk, a renegade New England colonist, an enslaved African American who escaped from George Washington, a lesbian couple, a forgotten 19th c. celebrity, and a Civil War spy. Students will also research and write their own historical-biographical essays.

Fall HIST0657A S01 17811 TTh 9:00-10:20(05) (C. Grasso)

HIST 0658D. Walden + Woodstock: The American Lives of Ralph Waldo Emerson and Bob Dylan.

Emerson and Dylan are cultural icons. Emerson has been called "Mr. America" and Dylan has just won the Nobel Prize for Literature. Both had boundless energy for public performance and self-representation; both actively supported turning points in the civil rights struggle; both raged against American military aggression; both were at the epicenter of a wide circle of intellectuals, while denying their own centrality. What is the celebrity intellectual's responsibility to society while remaining true to oneself? Poems, essays, autobiographies, songs, and movies provide insight into these eternally fascinating geniuses and their times.

Spr HIST0658D S01 26268 Th 4:00-6:30(17) (K. Sacks)

HIST 0690D. Bodies that Matter: Environmental Histories of Disability in the United States.

This course places two stories side-by-side: changing experiences and conceptions of disability in the United States and changing experiences and conceptions of the nonhuman environment. Reading scholarship in environmental and disability history and relying on a diverse array of primary sources, this course traces relationships between bodies, minds, and land in the U.S. over the past 200 years. Through histories of slavery, animal labor, wilderness preservation, atomic radiation, disability and environmental activism, and COVID-19, we will ask how human and nonhuman bodies were made and unmade in processes of environmental change indoors and out, how the political meanings of disability, incapacity, and productivity were constructed over time, and what a just future for disabled life and the nonhuman world might entail. This course requires no prerequisites and introduces key topics and approaches in both U.S. environmental history and disability history/studies.

Spr HIST0690D S01 26302 M 3:00-5:30(13) 'To Be Arranged'

HIST 0931B. An Introduction to Africana Studies (AFRI 0090)..

Interested students must register for AFRI 0090.

Fall HIST0931B S01 18772 Arranged 'To Be Arranged'

HIST 1032. South Africa: Apartheid and After.

This course considers the most extreme form of settler colonial dispossession -- South African apartheid. We examine the ideological and capitalist foundations of economic, political, social, and territorial segregation. We also explore the range of visions for how to do away with

apartheid and what should come after it. The dramatic story of struggle ended with what some considered a near-miraculous resolution in 1994. Our consideration of the decades since then reveals the compromises of that resolution and the enduring burden of South Africa's colonial past.
 Spr HIST1032 S01 26139 MWF 10:00-10:50(03) (N. Jacobs)

HIST 1101. Chinese Political Thought from Confucius to Xi Jinping.

This lecture-discussion course traces the rich history of Chinese political thinking from the beginnings of written history—when different visions of good governance competed for the attention of the rulers of the day—through to the present. We begin with the study of ancient political ideas, for it is during the earliest periods of Chinese history that the greatest variety of government modes are proposed. Political philosophy is the focus, but we also examine the institutions that were developed to translate ideals into action and to the tensions that arose as a consequence of efforts to reconcile different political philosophies in practice during the imperial period. The last section of the course is devoted to the radical changes in thinking and government institutions that take place over the course of the late nineteenth, twentieth, and twenty-first centuries.

Spr HIST1101 S01 26191 TTh 9:00-10:20(05) (C. Brokaw)

HIST 1120. At China's Edges.

What does it mean to live on the borders of a rising world power? This course explores the commonalities and differences of the vast areas where China meets Central, South, Northeast, and Southeast Asia. We will analyze the modern histories of such places as Xinjiang, Hong Kong; Taiwan; Manchuria; Sichuan; Yunnan; and Tibet through a number of overarching themes, starting with environment and place-making. Other topics include comparative colonialisms and experiences of decolonization; the experience of war in borderlands; conceptions of ethnicity over time; and nation-building, citizenship, and the "art of not being governed."

Fall HIST1120 S01 17807 MWF 1:00-1:50(08) (R. Nedostup)

HIST 1149. Imperial Japan.

This course is for students interested in exploring the changing ideas, technologies and practices that shaped Japan's history from the 1850s, when it confronted the power of an encroaching West, to the 1930s when its choices led the nation to the edge of ruin. Lectures and readings will address the collapse of the Tokugawa regime, the Meiji Restoration, the construction of empire, and the emergence of new forms of cultural and political expression. Students will also learn how ideas about gender, race, and tradition were understood and made use of in Imperial Japan. Open to all students.

Fall HIST1149 S01 17787 MWF 10:00-10:50(14) (K. Smith)

HIST 1155. Japan's Pacific War: 1937-1945.

Uses film, oral histories, historical fiction, and more traditional forms of historical interpretation to explore the events, ideas, and legacies of Japan's Pacific War. The armed conflict began in 1937 with the Japanese invasion of China and ended in 1945 with the atomic bombing of Hiroshima and Nagasaki. Some attention is paid to military developments, but the principle concerns fall into the areas of mutual images, mobilization, and memory.

Spr HIST1155 S01 26181 MWF 11:00-11:50(04) (K. Smith)

HIST 1205. The Long Fall of the Roman Empire.

The collapse of the Roman Empire was the crucible in which the cultures of the medieval West, Byzantium, and Islam were forged. This class examines the tensions and transformations within Mediterranean society between 250 and 1100 CE and how these tribulations gave birth to new identities, boundaries, economies, and religious beliefs. We will explore too the points of contact between the emerging Latin, Byzantine, and Islamic worlds and how people living in the late ancient and early medieval Mediterranean sought to devise solutions to the challenges that confronted them as their worlds collapsed, expanded, and changed. Class meetings will interweave narrative and thematic lectures with student analysis of primary sources in translation. Topics include early Christianity, the body, gender, barbarian invasions and the fall of the Western Roman Empire, the rise of Islam, Charlemagne, and the Vikings. P

Fall HIST1205 S01 18208 TTh 2:30-3:50(12) (J. Conant)

HIST 1210A. The Viking Age.

For two centuries, Viking marauders struck terror into hearts of European Christians. Feared as raiders, Norsemen were also traders and explorers who maintained a network of connections stretching from North America to Baghdad and who developed a complex civilization that was deeply concerned with power and its abuses, the role of law in society, and the corrosive power of violence. This class examines the tensions and transformations within Norse society between AD 750 and 1100 and how people living in the Viking world sought to devise solutions to the challenges that confronted them as their world expanded and changed. P

Spr HIST1210A S01 26187 MWF 2:00-2:50(07) (J. Conant)

HIST 1262M. Truth on Trial: Justice in Italy, 1400-1800.

Why do we think that one human being can judge another? How did this activity, enshrined in legal and political systems, profoundly shape society? This course examines the changing face of justice, from the medieval ordeal to judicial torture; the expansion of inquisitorial and state law courts; and the critical role the judicial system played in shaping Italian society. Using Italy as a focus, the course explores how law courts defined social, political, scientific, and religious truth in the early modern period. P

Spr HIST1262M S01 26231 TTh 2:30-3:50(11) (C. Castiglione)

HIST 1266C. English History, 1529-1660.

Examines politics, religion, and society from the Protestant Reformation to the Puritan Revolution—a period of rapid and dramatic change when the world, for most English people, was turned upside down. Considers the experiences and concerns of ordinary men and women, as well as the elite. Takes in Scotland, Ireland, and the great migration to New England. P

Fall HIST1266C S01 17808 MWF 2:00-2:50(01) (T. Harris)

HIST 1266D. British History, 1660-1800.

A survey of British history from the restoration of monarchy to the Wilkes affair and the loss of the American colonies. In addition to political developments such as the Glorious Revolution and the rise of party, examines political ideology (including the great political theorist, John Locke) and various themes in social history (such as crime, popular protest, the sexual revolution, and the experiences of women). P

Spr HIST1266D S01 26188 MWF 2:00-2:50(07) (T. Harris)

HIST 1267. The Global British Empire, 1600-The Present.

This course charts the long history and continuing legacies of the British Empire, an entity that has transformed every single continent over the last four centuries and is widely associated with the makings of the modern world. We examine how and why a powerful and expansive British Empire emerged and sustained itself. Equally, we zoom in on the regular contestation and even outright rebellion that this transcontinental polity inspired. This course is an opportunity to think connectively and comparatively about historical experiences in America, India, the Caribbean, and Africa among multiple other British imperial spaces. We will track the making and unmaking of the British Empire by studying the evolution of global trade, labor regimes including slavery, the consumption of commodities such as sugar, as well as new ideas about governance, race, and identity.

Spr HIST1267 S01 26189 MWF 2:00-2:50(07) (T. Bains)

HIST 1320. Rebel Island: Cuba, 1492-Present.

Cuba, once the jewel in the Spanish imperial crown, has been home to some of the world's most radical revolutions and violent retrenchments. For two centuries, its influence has spread well beyond its borders, igniting the passion of nationalists and internationalists as well as the wrath of imperial aggression. This course traces the history of Cuba from its colonial origins through the present, foregrounding the revolutionary imaginary that has sustained popular action—from anti-slavery rebellions through the Cuban Revolution and its discontents—in addition to the historical processes that have forged one of the world's most vibrant socio-cultural traditions.

Fall HIST1320 S01 17814 TTh 10:30-11:50(13) (J. Lambe)

HIST 1381. Latin American History and Film: Memory, Narrative and Nation.

This course is centered around the relationship between history and storytelling. It takes as a starting point that history is itself political, and asks that we always consider both how and why we tell stories about the

past. Together, we will critically examine a broad range of films and texts that engage with the Latin American past, and explore what they have to say about how gender and sexuality, imperialism, slavery, the church, revolution and repression shaped the region. How do films represent the past, and how do we approach “historical film”? How have narrative and documentary films been used as in various social and political struggles? Each week, we will examine documentary, narrative, or experimental films in relation to other modes of historical storytelling, from academic historiography to graphic novels, first person testimonios, memoirs, oral histories, and journalism.

Spr HIST1381 S01 26227 TTh 10:30-11:50(09) (D. Rodriguez)

HIST 1441. 'Neither of the East nor the West': The Ottoman Empire in Asian, African, and European History.

The Ottoman Empire (1299—1923) was the longest-lived and most powerful Islamicate dynasty in history. From nomadic Turkic warriors in Asia to multiethnic empire straddling three continents, the Ottomans became the premier power in the Mediterranean world and the last to single-handedly govern most of today's Middle East/MENA. Yet, Ottoman formation and evolution—fusing Roman, Mongol, and Persianate imperial heritages, as well as Muslim, Christian, and Jewish faith communities—remain little understood. This course explores West Asia, Southern Europe, and North Africa through the prism of Ottoman history from medieval beginnings to modern legacies, including those surviving Ottoman partition after WWI. We shall engage difficult questions surrounding law and empire, religion and secularism, nationalism and state-building, and the legacies of Ottoman rule in and outside today's Turkey—from Bosnia to Baghdad, Ukraine to Yemen, and “where East meets West”: Constantinople/Istanbul.

Spr HIST1441 S01 26253 MW 3:00-4:20(10) (F. Ahmed)

HIST 1457. Understanding the Palestinians.

Palestinians are largely absent in histories of Palestine/Israel. This course introduces new scholarship that draws on local sources, oral history, ethnographic research to help us explore three fundamental questions: Who are the Palestinians? What do they want? And why has the Palestinian question become a central issue in global debates about the making of the modern world and its potential futures? The course covers the modern period (1750 to the present) and engages larger themes of capitalist transformation, imperialism, settler-colonialism, nationalism, and indigeneity.

Fall HIST1457 S01 18499 TTh 2:30-3:50(12) (B. Doumani)

HIST 1502. The Early Republic United States.

This course explores the politics and culture of the United States between the ratification of the Constitution in 1789 and the financial crisis of the late 1830s. The establishment of the federal government still left crucial questions unresolved: the characteristics of national identity, the boundaries of citizenship, the legitimacy of slavery, and the tense relationship between capitalism, colonialism, and democracy. Relying on primary sources and secondary scholarship, the course will revisit familiar debates over warfare, sovereignty, and public policy, while also introducing students to a wide range of critical voices seeking to fulfill the idealistic possibilities of the American Revolution.

Fall HIST1502 S01 17816 TTh 1:00-2:20(06) (S. Rockman)

HIST 1533. Cities and Inequality Since 1920: The United States.

This lecture course takes up the relationship between cities and social and economic inequality—especially racial, but also other forms of social disadvantage along lines of class, gender, sexuality, indigeneity, and geography. Its focus is the urban history of American cities, suburbs, and towns and how urban development since the advent of the motor-car suburb in the 1920s shaped American social life. Students will learn about and explore topics such as zoning, racial redlining and other forms of segregation, real estate markets, the home building industry, urban public policy and law, urban leisure, transportation, and many others. At the center of the course is the question of how people live in dense connectivity and community and what the history of the modern American city can tell us about the nature and durability of social inequality.

Spr HIST1533 S01 26183 MWF 12:00-12:50(01) (R. Self)

HIST 1553. Empires in America to 1890.

In this class, we'll consider some of the forms of empire-building by various groups of indigenous and colonizing peoples in what is now the

United States in order to understand the development of imperial U.S. power in both domestic and international contexts. Rather than resting upon a foregone conclusion of European settler colonial “success,” the course explores the contingent and incomplete nature of empire-building even within unbalanced power relationships.

Fall HIST1553 S01 17810 MWF 2:00-2:50(01) (N. Shibusawa)

HIST 1554. American Empire Since 1890.

This survey of twentieth-century US history through the lens of racial capitalism and empire will focus on the United States as a settler state whose power also relies on overseas colonialism and free trade imperialism. Topics include: ideology and political culture, labor and extraction, social movements and resistance, knowledge production and the military-industrial-complex, neoliberal scarcity and financialization.

Spr HIST1554 S01 26182 MWF 11:00-11:50(04) (N. Shibusawa)

HIST 1570. American Legal and Constitutional History.

History of American law and constitutions from European settlement to the present. Not a comprehensive survey but a study of specific issues or episodes connecting law and history, including morals and marriage laws, slavery, contests over Native American lands, delineations of race and gender, economic regulation, and the construction of a right to privacy.

Spr HIST1570 S01 26184 MWF 12:00-12:50(01) (M. Vorenberg)

HIST 1820B. Environmental History of East Asia.

With a fifth of the world's population on a twentieth of its land, the ecosystems of China, Japan, Korea and Vietnam have been thoroughly transformed by human activity. This course will explore the human impact on the environment from the first farmers to the industrial present, exploring how wildlife was eliminated by the spread of agriculture, how states colonized the subcontinent, how people rebuilt water systems, and how modern communism and capitalism have accelerated environmental change. Each week we will examine primary sources like paintings, essays, maps and poems. The course assumes no background in Asian or environmental history.

Spr HIST1820B S01 26255 TTh 1:00-2:20(08) (B. Lander)

HIST 1820C. Sovereignty and Ecology: Law, Land, and Environmental Change.

Can law change rivers? Do rivers shape law? This course uses the Yukon River—running 2000 miles through Arctic and Subarctic Alaska and Canada—to explore how Indigenous, Russian and British Imperial, and nation-state sovereignties and the legal ideas they contain interacted with ecological and social life. From salmon and migratory birds to wildfires, plastic pollution, and climate change, the course covers the 1800s-2000s. Tuesday lectures will alternate with collaborative readings & short writing assignments based on primary sources, including oral histories, court transcripts, and government documents on Thursdays, with the goal of building new ways of linking law, sovereignty, and ecological change. Readings will be supplemented with secondary works of history, anthropology, theory, ecology, and guest visits from regional experts and Elders. Previous coursework in history, Native American & Indigenous Studies, or ecology is a plus but not required.

Fall HIST1820C S01 17817 TTh 1:00-2:20(06) (B. Demuth)

HIST 1825F. Nature, Knowledge, Power in Early Modern Europe.

This course examines the creation and circulation of scientific knowledge in early modern Europe, ca. 1450-1600. We will explore the practices, materials, and ideas not just of astronomers and natural philosophers, but also of healers, botanists, astrologers, alchemists, and artisans. How did social, political, economic, and artistic developments during this period reshape how naturalists proposed to learn about, collect, manipulate, and profit from nature? We will also consider the ways in which colonial projects forced Europeans to engage with other “ways of knowing” and rethink classical knowledge systems. P

Fall HIST1825F S01 17785 MWF 10:00-10:50(14) (T. Nummedal)

HIST 1825H. Science, Medicine and Technology in the 17th Century.

This course examines the development of science and related fields in the period sometimes called ‘the scientific revolution’. It will both introduce the student to what happened, and ask some questions about causes and effects. The new science is often associated with figures like Harvey, Galileo, Descartes, Boyle, Leeuwenhoek, and Newton. But it is also associated with new ways of assessing nature that are mingled with

commerce. The question of the relationship between developments in Europe and elsewhere is therefore also explored. P

Fall HIST1825H S01 17784 MWF 9:00-9:50(09) (H. Cook)

HIST 1825J. History of Artificial Intelligence.

The course will trace the origins and trajectory of ideas about artificial intelligence, starting with the "active intellect" of Aristotle, early analog computers and automata, Ada Lovelace's "calculus of the nervous system," through the "general intellect" and "machine capital" of Karl Marx, Karel Čapek's "Universal Robots," the "Turing test," "cyberpositivity" and Donna Haraway's "Cyborg Manifesto," and concepts like "swarm intelligence," "singularity," and the "black box" problem. Sources will encompass a range of disciplinary approaches (philosophy, sociology, computer science, etc.), formats (text, film, graphic novel), and genres including Japanese anime and Afrofuturism.

Spr HIST1825J S01 26254 TTh 1:00-2:20(08) (H. Case)

HIST 1830B. Politics and the Psyche from Sigmund Freud to Donald Trump.

This combined lecture/discussion course explores the relation between politics and the emotions from Sigmund Freud's discovery of the unconscious in Vienna around 1900 to the rise of populist and anti-democratic politics in the United States and Europe today. Historical knowledge generally focuses on civilizations, societies, systems, and events as they move, evolve, and transform through time. Psychoanalytic knowledge added the inner, mental (psychic) lives of people and cultures. Psychoanalysis redefined the humanities, the social sciences, and their relationships, paving the way as well for new approaches such as gender and sexuality studies. We will focus on the role of psychoanalysis as a political science, attuned to the modes of mass and media politics of the 20th and 21st centuries.

Fall HIST1830B S01 17815 TTh 10:30-11:50(13) (M. Steinberg)

HIST 1930S. Roman History II: The Roman Empire and Its Impact (CLAS 1320).

Interested students must register for CLAS 1320.

Fall HIST1930S S01 18769 Arranged 'To Be Arranged'

HIST 1931F. Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC (CLAS 1210).

Interested students must register for CLAS 1210.

Fall HIST1931F S01 18774 Arranged 'To Be Arranged'

HIST 1931L. Women, Gender and Feminism in Early Modern Italy (ITAL 1262).

Interested students must register for ITAL 1262.

Fall HIST1931L S01 18771 Arranged 'To Be Arranged'

HIST 1942A. Taiwan's Geographies.

Too frequently understood only as a geopolitical anomaly and foreign relations battleground, Taiwan has a rich history as a complex site of overlapping geographies and shifting spatial imaginations. These include indigenous geographies; non-human environments; human circulation and migration in the Pacific and Southeast, East, and Northeast Asia; successive eras of European and Asian colonization and empire; and twentieth century regional and global communities of politics, labor, affect, and more. We'll approach these histories via scholarly writing, film, music, literature, digital visualizations, and other sources.

Fall HIST1942A S01 18758 W 3:00-5:30(10) (R. Nedostup)

HIST 1952B. The Intimate State: The Politics of Gender, Sex, and Family in the U.S..

This seminar examines the "intimate politics" of gender, sexuality, and race in modern American history, focusing on law and political conflict from Reconstruction to the present. Its central concern is how the "private" (the intimate) is constructed and regulated by state power—by government. Topics include laws regulating sex and marriage; social norms governing gender roles in both private and public life; the range of political perspectives (from feminist to conservative) on sex, sexuality, and family; the transition from slavery to freedom; gender, sexuality, and U.S. empire; and the relationship of gender, sexuality, and race to notions of nationhood and the role of the modern state. Some background in history recommended but not required.

Spr HIST1952B S01 26239 M 3:00-5:30(13) (R. Self)

HIST 1956R. Antisemitism and Modern History.

A new course in the history and theory of antisemitism from 1850 to the present with an emphasis on Europe and attention to the United States and the Middle East.

Spr HIST1956R S01 26263 Th 4:00-6:30(17) (M. Steinberg)

HIST 1961F. Women in Early Modern China.

"Women in Early Modern China" explores the changes in the roles of women and the definition of gender relations that mark the early modern period (roughly, late fifteenth through the eighteenth centuries) in Chinese history. These changes were crucial to the conceptions of women and their place in society that shaped the modern feminist movements of the late nineteenth and early twentieth century. Throughout the course we will be thinking about gender relations as relationships of power: about how power was gendered in political, economic, social, and cultural institutions and spheres; and about how the intersection of gender with class, religious belief, and medicine shaped power relationships. We will also be particularly attentive to women's participation in these power relationships—that is, the ways in which they could (and did) reinforce, manipulate, exploit, subvert, or resist them.

Spr HIST1961F S01 26259 W 3:00-5:30(10) (C. Brokaw)

HIST 1962F. Assembling Chinese History.

The goal of this seminar is to build a community of researchers in the history of China and the Sinophone world, with a focus on understanding the relationships between self, social frameworks, and human geography in the modern era. We'll discuss critical methodologies and research ethics for conducting and using oral interviews; contextualizing and reading archives and a range of published and unpublished documents; understanding material culture; and problems of interpreting evidence at scale. Students will work on their own research project, which could be a paper, film, zine, website, etc. Ability in a spoken or written Chinese language strongly encouraged.

Spr HIST1962F S01 26693 W 3:00-5:30(10) (R. Nedostup)

HIST 1963Q. Sex, Power, and God: A Medieval Perspective.

Cross-dressing knights, virgin saints, homophobic priests, and mystics who speak in the language of erotic desire are but some of the medieval people considered in this seminar. This course examines how conceptions of sin, sanctity, and sexuality in the High Middle Ages intersected with structures of power in this period. While the seminar primarily focuses on Christian culture, it also considers Muslim and Jewish experience. Enrollment limited to 20. P

Fall HIST1963Q S01 18819 Th 4:00-6:30(04) (A. Remensnyder)

HIST 1964I. England Without a Monarchy: Regicide and Republic, 1649-1660.

This course examines England's mid-seventeenth century revolution, looking at high and low politics, the rise of popular radicalism, and the conflict in the empire. Themes explored include: the trial of Charles I: the commonwealth, 1649-53; the Ranters and the sexual revolution; the Digger commune at St. George's Hill; Oliver Cromwell's war crimes in Ireland; Cromwell as Lord protector, 1653-58; the social and gender egalitarianism of the Baptists, Quakers, and Fifth Monarchists; the revolutions in the Caribbean and Atlantic; and the Western Design and capture of Jamaica.

Fall HIST1964I S01 17838 M 3:00-5:30(03) (T. Harris)

HIST 1964L. Slavery in the Early Modern World.

There were multiple forms of slavery in the Early Modern world. We will look at three major systems: Mediterranean slavery and the Barbary Corsairs, Black Sea slavery and slave elites of the Ottoman Empire, and the Atlantic triangular trade. We will examine the religious, political, racial, and economic bases for these slave systems, and compare the experiences of individual slaves and slave societies. Topics discussed include gender and sexuality (e.g. the institution of the Harem and the eunuchs who ran it), the connection between piracy and slavery, and the roles of slavery in shaping the Western world. P

Fall HIST1964L S01 17852 Th 4:00-6:30(04) (A. Teller)

HIST 1965C. Stalinism.

In this course we will examine in detail one of the deadliest and most perplexing phenomena of the twentieth century: Stalinism. During Joseph Stalin's reign the people of the Soviet Union experienced events of

astounding scale and revolutionary change. Rapid industrialization, massive collectivization, famine, purges, state terror, devastating world war, and foreign occupation brought unprecedented suffering and premature death to tens of millions of Soviet citizens. Given the size of the topic and the limited hours in a semester, this course focuses on Stalin's rise to power and his reign in the 1930s. Rather than surveying the views of a wide range of scholars, we will delve into two very long works of recent scholarship in depth. This is a reading intensive course.

Fall HIST1965C S01 17840 M 3:00-5:30(03) (E. Pollock)

HIST 1965E. Politics of the Intellectual in 20C Europe.

This course will concentrate on European thinkers' engagement with the politics of the 20th century. Discussion will cover a range of cultural and intellectual currents and ideologies—modernism, fascism, communism, "dissidence," "internal" migration, "anti-politics"—as well as genres (essays, letters, fiction, criticism, poetry, film).

Fall HIST1965E S01 17841 M 3:00-5:30(03) (H. Case)

HIST 1968A. Approaches to the Middle East.

When and why did the Middle East emerge as a field of study? What are the competing approaches to framing our understanding of this pivotal region? How did these approaches change over time? This upper-level seminar explores these questions within the larger context of colonial, national, and other ongoing encounters that have shaped modern regimes of knowledge production. The class features visits by leading scholars from different disciplines who reflect on the questions they ask and how they go about answering them. Readings range from canonical works to innovative new scholarship. No pre-requisites but previous coursework on this region recommended.

Fall HIST1968A S01 17846 W 3:00-5:30(10) (B. Doumani)

HIST 1970F. Early American Money.

The history of finance has become a crucial site for studying governance and statecraft, for recovering the organizing logic of capitalism, and for recognizing the structures of power in any given society. Topics include the recurring debates over metallic and paper currencies, the emergence of a national banking system, and the technologies of coinage, assaying, and counterfeiting. Particular focus on the relationship of finance and slavery, as well as the many "bank wars" that riled American politics from the seventeenth century through the nineteenth century.

Spr HIST1970F S01 26240 M 3:00-5:30(13) (S. Rockman)

HIST 1970G. Captive Voices: Atlantic Slavery in the Digital Age.

The digital revolution is transforming the study of history. But is it allowing us to better recover the voices and lived experiences of people in the past? This course considers the possibilities and pitfalls of using digital tools to understand the lives of enslaved men and women in the Americas between 1500 and 1800. Each session considers a different digital humanities project, supplemented by primary sources and recent books. For their final project, students will contribute to the Database of Indigenous Slavery in the Americas, which is hosted here at Brown. There are no prerequisites for this course. P

Spr HIST1970G S01 26267 Th 4:00-6:30(17) (L. Fisher)

HIST 1971D. From Emancipation to Obama.

This course develops a deep reading knowledge of significant issues and themes that define African American experiences in the 20th century, experiences that begin with the years following Emancipation and culminates with the election of President Obama. Themes include citizenship, gender, labor, politics, and culture. The goal is to develop critical analysis and historiographical depth. Some background in twentieth century United States history is preferred but not required. Assignments include weekly reading responses, class participation and presentation, and two written papers. Enrollment limited to 20.

Fall HIST1971D S01 17836 M 3:00-5:30(03) (F. Hamlin)

HIST 1973Q. Environmental Pressures of South Asia.

South Asia is one of the most densely populated geographical regions of the world. The traditional environmentalist view of separating/protecting 'nature' from human settlements often leads to conflicts of resources/land use here. This course studies the evolution of environmental governance in the diverse ecologies of South Asia across four substantive and methodological parts. Part I involves readings on environmental and agrarian systems in the Mughal Empire from the precolonial period

(1526-1757) in South Asia. Part II involves readings on forestry laws from the British colonial period (1757-1947) in South Asia. Part III involves reviewing a series of books and films on environmental history in Asia. Part IV involves researching case studies focusing on local environment cultures from the postcolonial period (1947 to present) in South Asia. The course requires writing a final research paper based on a case study.

Fall HIST1973Q S01 18570 Th 4:00-6:30(04) 'To Be Arranged'

HIST 1974E. The Intellectual History of Imperialism.

What is an empire? What does an empire do? What is the difference between imperialism and colonialism? How have historical actors as well as historians between the seventeenth and twentieth centuries answered these questions? This seminar considers the long history of intellectual debate over imperialism and its relationship with state formation, capitalism, labor, subjecthood, and the environment. We will read proponents of imperial expansion, advocates of imperial reform, and fierce critics of imperialism. Readings will include canonical texts authored by major historical figures such as John Locke and Vladimir Lenin as well as pamphlets and legislative debates that document the everyday practice of imperialism. In engaging with such primary sources, we will consider how rival visions of imperialism shaped ideological traditions as diverse as liberalism, fascism, conservatism, and communism.

Fall HIST1974E S01 17843 W 3:00-5:30(10) (T. Bains)

HIST 1974P. Modernity's Crisis: Jewish History from the French Revolution to the Election of Donald Trump.

As the modern world developed and grew, the question of the Jews' place within it became increasingly important for the majority societies and the Jews themselves to deal with. The solutions found have ranged from inclusion on equal terms through exclusion not only from society but from humanity altogether. In many ways, the debates around this issue have touched on the very meaning of modernity itself. In this advanced undergraduate seminar, we will examine the ongoing polemics on the place of the Jews from the perspectives of both the proponents of the different solutions and the Jews themselves.

Spr HIST1974P S01 26266 Th 4:00-6:30(17) (A. Teller)

HIST 1974U. Race, Incarceration, and Freedom in the Americas.

This course examines the history of mass incarceration in the Americas, focusing on the relationship between race, policing, and punishment from colonial Latin America to twenty-first century United States. Together, we will explore ways of thinking about the long history of punishment and its relationship to racial and gender politics as well as different forms of labor exploitation, and think about how different temporal and geographic framings help us think in new ways about the history of incarceration and (perhaps) point to new futures. Among the topics we will explore are the ways contemporary carceral regimes have been shaped by the afterlives of slavery; the shifting meanings of rehabilitation; the experiences of incarcerated individuals; the Cold War politics and transnational roots of militarized policing in the United States; and the ways gender, sexuality, and age shape imprisonment across the hemisphere.

Fall HIST1974U S01 18962 Th 4:00-6:30(04) (D. Rodriguez)

HIST 1975J. Portuguese Discoveries and Early Modern Global History.

This seminar introduces students to the study of Portugal and its connections to Africa, Asia and the Americas between the fifteenth and eighteenth centuries. Rather than offering a chronological or geographic overview of the topic, we will consider the shifting meanings of "discovery" as understood by early modern individuals and historians since, and how expressions of "discovery" have reflected tensions and struggles around empire, race, gender, and other social categories of difference.

Spr HIST1975J S01 26261 W 3:00-5:30(10) (G. Rocha)

HIST 1976N. Topics in the History of Economic Thought.

This reading and writing intensive seminar exposes students to the history of economic thought. Each year it is offered, we make our way through a different set of materials that touch upon a variety of topics, including theories of value, property, markets, labor, and inequality. We will also ask how ideas about the relationship between capitalism and other forms of economic production have changed over time. In the Fall of 2024, we will discuss the deep history of Surveillance Capitalism.

Fall HIST1976N S01 17844 W 3:00-5:30(10) (L. Rieppel)

HIST 1976U. Planning the Family.

This course explores 20th-century efforts to address population growth and family planning in a variety of global contexts, ranging from macro-level initiatives to individual practices. For some women, state leaders, and international experts, contraception meant sexual liberation, increased autonomy, and the reduction of economic hardship. But for others, the same biomedical technologies were associated with colonial control and efforts to reduce “undesirable” people. How is it possible for contraception to hold such expansive and contradictory meanings? In order to assess this central question, students will engage with critical theories of gender, race, class, nationalism, and decolonization.

Fall HIST1976U S01 18494 F 3:00-5:30(11) (J. Johnson)

HIST 1977I. Gender, Race, and Medicine in the Americas.

This course examines the relationships among sex, gender, race, disease and modern medicine in the Americas. Together, we will explore ways of thinking about disease and public health as topics of historical inquiry, and examine how health politics have been shaped by processes of imperialism, sexuality, and racial inequality. From nineteenth-century obstetrical experiments on enslaved women, to more recent debates over the disease threat posed by Haitians during the HIV/AIDS pandemic, race and sexuality have both shaped the development of medical knowledge and been used to isolate certain groups as threats. Social concerns over women's bodies and reproductive capacities have also shaped medical research and public health policy across the hemisphere. Through shared readings and guided independent research, this course gives students an opportunity to explore a wide variety of topics related to the history of medicine, race, and gender.

Spr HIST1977I S01 26258 W 3:00-5:30(10) (D. Rodriguez)

HIST 1980L. Islam in America: A Global History (HMAN 1973N).

Interested students must register for HMAN 1973N.

Spr HIST1980L S01 26763 Arranged 'To Be Arranged'

HIST 1982D. Africana Studies Junior Seminar (AFRI 1330)..

Interested students must register for AFRI 1330.

Fall HIST1982D S01 18768 Arranged 'To Be Arranged'

HIST 1982E. China's Environmental History: Sources and Themes (ENVS1820)..

Interested students must register for ENVS 1820.

Fall HIST1982E S01 18773 Arranged 'To Be Arranged'

HIST 1990. Undergraduate Reading Courses.

Guided reading on selected topics. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIST 1992. History Honors Workshop for Prospective Thesis Writers.

Prospective honors students are encouraged to enroll in HIST 1992 during semesters 5 or 6. HIST 1992 offers a consideration of historical methodology and techniques of writing and research with the goal of preparing to write a senior thesis in history. The course helps students refine research skills, define a project, and prepare a thesis prospectus, which is required for admission to honors. Students who complete honors may count HIST 1992 as a concentration requirement. Limited to juniors who qualify for the honors program.

Fall HIST1992 S01 17856 Th 4:00-6:30(04) (E. Owens)

Spr HIST1992 S01 26269 Th 4:00-6:30(17) (E. Owens)

HIST 1993. History Honors Workshop for Thesis Writers, Part I.

All students admitted to the History Honors Program must enroll in HIST 1993 for two semesters of thesis research and writing. They may enroll in the course during semesters 6 and 7, or 7 and 8. Course work entails researching, organizing, writing a history honors thesis. Presentation of work and critique of peers' work required. Limited to seniors and juniors who have been admitted to History Honors Program. HIST 1993 is a mandatory S/NC course. See History Concentration Honors Requirements.

Fall HIST1993 S01 18190 TTh 9:00-10:20(05) (E. Owens)

Spr HIST1993 S01 26194 TTh 9:00-10:20(05) (E. Owens)

HIST 1994. History Honors Workshop for Thesis Writers, Part II.

This is the second half of a year-long course, upon completion the grade will revert to HIST 1993. Prerequisite: HIST 1993.

Fall HIST1994 S01 18505 Arranged (E. Owens)

Spr HIST1994 S01 26312 Arranged (E. Owens)

HIST 2450. Exchange Scholar Program.

Fall HIST2450 S01 16585 Arranged 'To Be Arranged'

Fall HIST2450 S02 16586 Arranged 'To Be Arranged'

Spr HIST2450 S01 25245 Arranged 'To Be Arranged'

HIST 2890. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall HIST2890 S01 16587 Arranged 'To Be Arranged'

Spr HIST2890 S01 25246 Arranged 'To Be Arranged'

HIST 2910. Reading and Research.

Section numbers vary by instructor. Please see check Banner for the correct section number and CRN to use when registering for this course.

HIST 2920. History Now.

Focused on current trends in historical writing and research, with emphasis on presenting a diverse range of cutting-edge work in historical and historiographical context. Required for all first-year PhD students in History.

Fall HIST2920 S01 17813 W 9:30-12:00(09) (J. Lambe)

HIST 2930. The Roots of History.

“The Roots of History” encourages critical thinking about some of the different ways in which historians approach thinking and writing about the past. In particular, we will explore some of the major theoretical stances that have influenced the discipline of history. Our focus throughout will be the interplay between theory and practice. By examining how historians have grappled with questions posed by influential thinkers (often working within other fields of knowledge), we will chart the trajectory of the discipline and assess its working methods. Required for all first-year PhD students in History.

Spr HIST2930 S01 26190 W 9:30-12:00 (J. Johnson)

HIST 2940. Writing History.

Required of all 3rd semester Ph.D. students.

Fall HIST2940 S01 18209 Th 9:30-12:00 (S. Rockman)

HIST 2950. The Practice of History.

This graduate seminar is about the professional skills, tools, and careers of historians—from hallmark best practices to new directions. We will engage different kinds of careers historians are pursuing today, the practical skills and resources necessary to meet them, and how historians are deploying those skills in multiple professional arenas, both in and beyond the academy. We shall also discuss some of the prevalent (although often unwritten) social and cultural norms of academia and university life to prepare you to navigate your training, career, and various institutional contexts that accompany and follow completion of a Ph.D. in History.

Spr HIST2950 S01 26271 MW 8:30-9:50(02) (M. Vorenberg)

HIST 2960. Prospectus Development Seminar.

This collaborative seminar focuses on identifying and contextualizing a dissertation topic; choosing a dissertation committee and a support network; designing and executing plans for research and writing; and articulating a thesis project as a prospectus, grant proposal, and other oral and written forms. This is a required course for and open only to third-year students in the History Ph.D. program.

Spr HIST2960 S01 26257 F 3:00-5:30(15) (J. Lambe)

HIST 2971W. Readings in Environmental History.

This course will introduce graduate students to major themes and problems in the field of environmental history. Topics may include climate, animals, the Anthropocene, empire, capitalism, comparative history, marine spaces, and the intersection of cultural, social, and gender history with the environment field, but will be chosen in part based on the interests of enrolled students. Readings will draw from classics and newly published material. Geography and time period are expansive. Discussion will use these works to ground major historiographical questions in environmental history, as well as issues of method, evidence, and narrative style.

Fall HIST2971W S01 17850 W 3:00-5:30(10) (B. Demuth)

HIST 2972A. Histories of Modernity.

Far from describing the merely recent past, the term modernity often signifies a distinct epoch in the human past. In this course, we will consider what historians studying various, distinct geographies mean by the modern period as well as what their choices might tell us about historical approaches to periodization and scales of analysis. Particular emphasis will be placed on past and present debates about the long nineteenth century as a threshold to modernity. We will consider major historiographical interventions on the Industrial Revolution, the Great Divergence, imperialism, nationalism, and mass politics and culture.

Spr HIST2972A S01 26262 W 3:00-5:30(10) (B. Hein)

HIST 2972B. Graduate Readings in African History.

This course is a wide-ranging readings course in the field of African history. Readings will concentrate on, but not be restricted to, sub-Saharan Africa and the colonial and post-colonial periods. Taking a roots of history/new directions approach, the seminar will feature classic and recent works in economic, cultural, social, and environmental history. All graduate students welcome.

Spr HIST2972B S01 26272 F 3:00-5:30(15) (N. Jacobs)

HIST 2972C. African American Women's History.

This graduate seminar examines the cultural, economic, political, and social history of Black women in the United States from slavery to the Civil Rights-Black Power era. Through a variety of secondary and primary sources, film and other multimedia, the course explores the myriad ways these women have experienced and resisted the "double burden" of racism and sexism in United States history. The course will consider the legacy of slavery and how African American women have defined their own identities as individuals, wives, mothers, community leaders, activists, and theorists. Paying careful attention to their diverse experiences, the course will examine Black women's participation and leadership in a variety of institutions, organizations, and social movements. Major course themes include labor, class, politics, radicalism, feminism, internationalism, religion, sexuality, violence, and family.

Fall HIST2972C S01 17842 M 3:00-5:30(03) (K. Blain)

HIST 2972D. Graduate Readings in Native American and Indigenous Histories: Decolonization and Methodologies.

This PhD-level readings seminar has two primary objectives. The first is to read widely in the recent literature of Native American and Indigenous History, including monographs and articles (readings admittedly tilt towards North America, but with a keen eye to other regions). The second aim is to engage the question of methods, epistemologies, and ways of knowing, both through traditional academic writing as well as Indigenous scholarship that models supplemental and even alternate epistemologies and understandings of what it means to do history and know about the past. As part of this class, we will hear directly from 2-3 Native and Indigenous scholars and knowledge keepers to help us think more critically about where the field is and where it should go.

Spr HIST2972D S01 26281 T 1:30-4:00 (L. Fisher)

HIST 2972E. Readings in Oppression and Resistance.

This seminar focuses on close readings of several iconic and influential texts on oppression and resistance in the modern era. Despite our growing awareness of the legacies and current realities of oppression, the deeper history of the mobilization of resistance to pervasive oppression in the past has become obscured by the passage of time, and misunderstood through selective citation and decontextualization. By carefully analyzing and contextualizing the writings by earlier generations we can thus better understand our own time, how we got to where we are, and how we can steer our future to safer and more just shores. Some great minds in the past have thought about the questions that concern us today. This course introduces students to these voices in the belief that they can serve as a guide to grasp the complexities of our own time.

Fall HIST2972E S01 17849 W 3:00-5:30(10) (O. Bartov)

HIST 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall HIST2990 S01 16588 Arranged 'To Be Arranged'

Spr HIST2990 S01 25247 Arranged 'To Be Arranged'

HIST 2991. History Dissertation Writing Workshop.

This seminar is for History PhD students in residence at Brown who are post-exams and are at any stage of writing their dissertations. It is intended to support dissertators by providing a structured community for setting and sharing goals, writing, and discussing chapters-in-progress. It meets every other week and is a half credit S/NC course.

Fall HIST2991 S01 17855 Th 2:00-4:30 (E. Pollock)

Spr HIST2991 S01 26270 Th 2:00-4:30 (E. Pollock)

History of Art and Architecture**HIAA 0023. South Asian Art and Architecture.**

This course is an introduction to South Asian Art & Architecture, from 2500 BCE until the present, and to Southeast Asian Arts connected to them through religion, trade, or conquest. We will explore a range of media—including architecture, painting, sculpture, textiles, and photography—to ask critical questions about the nature of images and their relationship to emotions, the environment, devotion, politics, performance, and other art forms, like literature, music, and dance. The course will include regular visits to the RISD museum (A)

Fall HIAA0023 S01 18460 TTh 9:00-10:20(05) (H. Shaffer)

HIAA 0089. Contemporary Photography.

This course surveys the rise of photography in the art world in the period after 1960. It examines both the development of photography as an independent medium and the appropriation of lens-based imagery by Pop Art, conceptual art, minimalism, and eventually Postmodernism.

Fall HIAA0089 S01 18464 MWF 11:00-11:50(16) (D. Nickel)

HIAA 0100. Introduction to Architectural Design Studio.

The class introduces students to basic tools and strategies in architectural design. A warmup exercise and several design assignments guide students to explore questions about form, function, structure, and light. The semester is devoted to the design of a small house. Students are trained in rigorous, conceptual thinking and graphically and verbally clear pronunciation of consequential design logic. By the end of the semester, the proposed building design is presented in concept diagrams, plans, sections, elevations, and a model. Course is intended for first and second year students. Preference is given to actual and future architecture concentrators. To apply for this class, students are required to submit an override request and a note via CAB to specify their concentration, semester level, and previous applications for this class. Enrollment limited to 15.

Fall HIAA0100 S01 18660 TTh 10:20-11:50(13) 'To Be Arranged'

HIAA 0140. Structural and Architectural Analysis.

This course examines in greater detail the importance of materials, structures, and processes in architecture and helps students understand how buildings are made and 'hold together.' The students will study key examples in brick, wood, reinforced concrete, and steel, and design a series of small sample structures.

Fall HIAA0140 S01 18662 MW 1:00-2:20 'To Be Arranged'

HIAA 0190. Advanced Design Studio.

This double-credit studio course builds on the skills taught in the Introductory and Intermediate Studios and will challenge students to design a more complex building. Urban planning strategies are developed to carefully insert the proposed building into a hybrid, densely populated urban context within a city. Students will be briefed to either design a residential housing project or a large public building. Students will analyze the built environment and character of the site to create contextual building designs that strengthen a neighborhood. The final presentation will require a complete set of drawings, renderings, a shared urban context model, and a large-scale model of the proposed building design. A jury of invited architects and professors will conduct a discussion of each project in an exhibition-like setting at the List Art Center. This course can be repeated once for credit.

Fall HIAA0190 S01 18663 TTh 1:00-3:30(06) (J. Von Der Schulenburg)

HIAA 0405. Arts of the Sacred and the Demonic in the Ancient Mediterranean.

From rural temple to urban shrine, to elegant synagogue or village church, from household prayer nook to adorned tomb, people in the ancient world

honored, encountered, and experienced their gods. They practiced a piety in which human flourishing depended on gestures, rituals, and built articulations of devotion mediated by beauty. But holy powers could also be malevolent, so ancient art served to protect, warn, or ward off evil spirits. This course will explore the art, architecture, and material cultures of ancient Greeks, Romans, Jews, and Christians between the 6th century BCE and the 6th century CE. We will consider a wide variety of evidence, including texts, sculpture, frescoes, mosaics, architecture, and domestic artifacts, to explore the many ways in which these distinct but connected communities expressed their beliefs through visual representations and material practices.

Fall HIAA0405 S01 18760 MWF 12:00-12:50(15) (G. Rodriguez)

HIAA 0850. Modern Architecture.

The "classic" period of European and American modern architecture from the turn of the century to the 1950s. Presents both the established canon of masterpieces by among many others, Frank Lloyd Wright, Mies van der Rohe, and LeCorbusier, and counterbalances this approach with information about new building materials, changing conditions of architectural production, and the "mechanisms of fame." A

Fall HIAA0850 S01 18514 TTh 1:00-2:20(06) (D. Neumann)

HIAA 1171. Cities, Landscapes, and Design in the Age of Pandemics.

This is a course about design and public health. Over the course of the semester, we will examine design proposals by architects, landscape architects, and urban planners which respond to a range of concerns about public space and public health. As a part of our study, we will explore topics including urban planning, and policy strategies proposed by Olmsted, Howard, Burnham, le Corbusier to address to fears about urban density, immigration, and contagion; the effect of treatment protocols for infectious diseases like tuberculosis (hygiene, fresh air, sunlight) on the evolution of the work of designers including Aalto, Neutra, Eames, and others.

Fall HIAA1171 S01 18476 T 4:00-6:30(07) (C. Barton)

HIAA 1721. Real and Unreal Landscapes.

This seminar is about how artists imagine the land, and the relationship between people and the places that they inhabit. We will think broadly about how people have conceptualized "nature," the "landscape," and "colonization" from the eighteenth century to today as well as hone in on specific artistic traditions, including those in Africa, Europe, and South Asia and across the Atlantic, Indian, and Pacific oceans. This class will investigate materials that come from the land, such as oil, clay, and pigments; other aspects of the environment, like waterways and clouds; and other art forms, including music, fiction, and dance. A

Fall HIAA1721 S01 18477 Th 4:00-6:30(04) (H. Shaffer)

HIAA 1920. Individual Study Project in the History of Art and Architecture.

Reading and reports on an approved topic, supervised by a member of the staff. Project proposals must be submitted and approved no later than the first week of the semester. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIAA 1990. Honors Thesis.

The subject of the thesis and program of study will be determined by the needs of the individual student. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIAA 1991. Independent Study - WRIT.

This course should be taken in place of HIAA 1990 if students will receive substantive feedback on their prose -- on at least two assignments of any length. Completion of this course may be used to satisfy the writing requirement.

HIAA 2450. Exchange Scholar Program.

Fall HIAA2450 S01 16580 Arranged 'To Be Arranged'

HIAA 2721. Real and Unreal Landscapes.

This seminar is about how artists imagine the land, and the relationship between people and the places that they inhabit. We will think broadly about how people have conceptualized "nature," the "landscape," and "colonization" from the eighteenth century to today as well as hone in on

specific artistic traditions, including those in Africa, Europe, and South Asia and across the Atlantic, Indian, and Pacific oceans. This class will investigate materials that come from the land, such as oil, clay, and pigments; other aspects of the environment, like waterways and clouds; and other art forms, including music, fiction, and dance.

Fall HIAA2721 S01 18479 Th 4:00-6:30(04) (H. Shaffer)

HIAA 2920. Methods of Research and Art Historical Interpretation.

Required of first-year and second year history of art and architecture A.M./Ph.D. students. Enrollment limited to 12. Instructor permission required.

Fall HIAA2920 S01 18776 M 3:00-5:30(03) (M. Graves)

HIAA 2940. Master's Qualifying Paper Preparation.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIAA 2980. Individual Reading (Single Credit).

Single credit. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIAA 2981. Individual Reading (Double Credit).

Double credit. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIAA 2982. Individual Reading for the Doctoral Candidate.

Single Credit. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIAA 2983. Dissertation Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

HIAA 2990. Preparation for Qualifying Examination.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall HIAA2990 S01 16581 Arranged 'To Be Arranged'

Spr HIAA2990 S01 25241 Arranged 'To Be Arranged'

HIAA 2991. Dissertation Preparation.

For graduate students who are preparing a dissertation and who have met the tuition requirement and are paying the registration fee to continue active enrollment.

Fall HIAA2991 S01 16582 Arranged 'To Be Arranged'

Spr HIAA2991 S01 25242 Arranged 'To Be Arranged'

HIAA 2992. Master's Thesis Preparation.

For students preparing a terminal MA thesis, may be repeated in the following semester. Sign up for sections according to individual primary advisor.

HIAA XLIST. Courses of Interest to Concentrators.

International and Public Affairs

IAPA 0400. Fiscal Plumbing 101: The American Tax State in Comparative and Historical Perspective.

This IAPA Gateway course explores the origins and development of the American Tax State in comparative and historical perspective. It's designed as an interdisciplinary introduction to the welter of problems associated with the raising and spending of public revenue --the life blood of contemporary nation-states. It should be of use to students interested in the political and institutional development of the welfare state, and in the origins, fault lines and prospects of American federalism. We explore the origins and development of the American Tax State in comparative and historical perspective. It is designed as an interdisciplinary introduction to the welter of problems associated with the raising and spending of public revenue --the life blood of contemporary nation-states.

Fall IAPA0400 S04 18027 MW 8:30-9:50(09) (A. Levitas)

IAPA 1001. Foundations of Development.

This course presents an interdisciplinary approach to the study of development. The course examines what constitutes development from a variety of different disciplinary perspectives, and the course examines how and in what context the term "development" itself has evolved over time. The goal of this course is to provide students an intellectual

and conceptual grounding for study a variety of issues surrounding development, whether in the global North or South.

Fall IAPA1001	S01	17279	TTh	1:00-2:20(06)	(N. Chorev)
Spr IAPA1001	S01	26609	TTh	1:00-2:20(08)	(P. Heller)

IAPA 1002. Foundations of Policy and Governance.

An overview of policymaking and policy analysis in the contemporary United States. The course begins with an examination of traditional justifications for government action. We will then examine the discipline of policy analysis that has arisen to design and evaluate public policies. We will also consider critiques of the rational method and ask questions about how policy expertise fits into the political system. The course ends with classic works on organizations and implementation. Not open to graduate students.

Fall IAPA1002	S01	16774	TTh	6:40-8:00PM(02)	(R. Hackey)
Spr IAPA1002	S01	26598	TTh	6:40-8:00PM(18)	(R. Hackey)

IAPA 1003. Foundations of Security.

This course introduces students to contemporary international security topics with a special focus on problems associated with war and violent conflict in the 21st century. It mixes the theoretical, historical, analytical, and practical. Students learn theory on the causes of war, how wars are fought, civil-military relations, the costs and consequences of warfare, and more. They also learn about the organization of the U.S. and other national security establishments. Using these tools, we will apply social science methods and critical thinking to security "hot spots" and wars around the world. There will be an emphasis on analyzing the unfolding war in Ukraine, as well as the prospects for U.S.-China rivalry and/or military conflict in the future, including within a Taiwan scenario. Aside from readings, lectures and discussions, students will benefit from a variety of films, simulations, walking excursions, and debates.

Fall IAPA1003	S01	16775	TTh	10:30-11:50(13)	(D. Brancati)

IAPA 1201D. Social Entrepreneurship.

Social Entrepreneurship, engages students in the process of exploring significant global problems and developing innovative solutions that drive transformative social change. The course helps students understand the strategies that social entrepreneurs employ to tackle complex and entrenched social problems with transformative approaches that work and impact systems. Students will learn about real organizations and interact with entrepreneurs leading this work. Case studies, complemented by articles and guest speakers, will show different approaches to social entrepreneurship and illustrate the strengths and weaknesses of various models and strategies.

Fall IAPA1201D	S02	18339	W	3:00-5:30(10)	(W. Allen)

IAPA 1201E. Nonprofit Organizations.

Contemporary nonprofits and their role in community building and shaping public policy are central to this course. Topics include how strong coalitions impact housing, welfare and children's policy, organizing empowered communities, the influential and engaged donor and building the value of nonprofits. Case studies will be featured and new nonprofit models will be conceptualized to strategically address critical human need. Enrollment limited to 20 juniors, seniors, and graduate students concentrating in Public Policy. This course satisfies the American Institutions requirement.

Spr IAPA1201E	S01	26602	M	3:00-5:30(13)	(W. Allen)

IAPA 1203. History of American Intervention.

Fall IAPA1203	S01	16788	TTh	2:30-3:50(12)	(S. Kinzer)

IAPA 1401. Economic Development in Latin America.

This course covers some of the unique events and characteristics that have shaped the economic development landscape of Latin America since colonial times until the present. Topics include: the historical legacy, why Latin America fell behind, import substitution industrialization, the debt crisis, poverty and income inequality, inflation, trade and financial liberalization and competitiveness. The class exposes students to a number of concepts and tools that can be broadly applied to the understanding of development in other geographic areas.

Fall IAPA1401	S01	17284	TTh	9:00-10:20(05)	(V. Ingham)

IAPA 1402. Beyond Sun, Sea and Sand: Exploring the Contemporary Caribbean.

For many people, their image of the Caribbean is the tourist brochure and television advertisement representation of sun, sea and sand. This course challenges that through a broad introduction to the real society, economy and politics of the Caribbean region. Using literature, film and traditional texts, it captures the cultural and linguistic complexity of the region through the exploration of a range of central themes such as ethnicity, color, class, politics, as well as more specific, targeted areas including economic inequality, migration, and tourism.

Spr IAPA1402	S01	26599	Th	4:00-6:30(17)	(P. Lewis)

IAPA 1500A. Ethnographic Research Methods.

This course introduces students to ethnographic research methods as a capacious set of tools for understanding the diverse ways people make sense of social issues that affect their lives and shape their experiences. It also addresses the ethical, legal, and political dilemmas that ethnographers encounter while engaging in field research. The course consists of weekly lectures, fieldwork practice, and ethnographic lab sessions. Students learn how ethnographers design their research projects, undertake participant observation in their chosen field sites (including online), write fieldnotes, prepare for and conduct interviews, collect and analyze artifacts, use visual and audio tools to experiment with multimodality, and work with archives, both historic and contemporary. Throughout the course, students will practice and apply these methods to pursue independent research projects on a topic of their choice. (IAPA Qualitative Research Methods course)

Fall IAPA1500A	S01	16957	W	3:00-5:30(10)	(I. Jusonyte)

IAPA 1502. What Works: Evaluating the Impact of Social Programs.

Public and non-profit sector resources are limited, and decisions about how to allocate scarce resources must be informed by an understanding of the impact of social programs and policies. However, measuring impact can be a challenge. This course provides a broad – yet rigorous – overview of the methods and tools available for evaluation of the impact of public and non-profit sector programs. Students become familiar with the concepts and methods of program evaluation. They gain knowledge and skills relevant to the planning and implementation of process and impact evaluations. We cover the pros and cons of various methods, including experimental and quasi-experimental designs, qualitative methods and mixed methods. Students will also learn how to critically review evaluation methods and findings. We will use real-life examples and case studies from a range of substantive areas to support and promote course learning.

Spr IAPA1502	S01	26611	TTh	10:30-11:50(09)	(W. Sheldon)

IAPA 1555. The Political Economy of Strategy: From the Financial Revolution to the Revolution in Military Affa.

This is a course about how major powers make, maintain and potentially undermine themselves using several recent examples -- Great Britain, the United States, Germany, the Soviet Union, and Japan. We make no claims that this course will reveal clues about the end of the American Empire, or the Pax Americana, but we do argue that only through an honest accounting of the history of the political economy of strategy can students understand both the costs and benefits of hegemony.

Fall IAPA1555	S01	18719	Th	4:00-6:30(04)	'To Be Arranged'

IAPA 1701N. Diplomacy, an Art That Isn't Lost.

This seminar is offered in Washington DC to Brown in Washington students and remotely to students on campus. It examines the practice and profession of diplomacy and its relationship to the policy process. While the practice of diplomacy and the policy-making process has a U.S. focus, the lessons learned apply to other nation states as well. We briefly review the history of inter-state relations, including the international legal basis for diplomatic relations. Diplomacy has evolved over the years and has been greatly influenced by modern technology; however, it continues to incorporate such common functions as policy formulation, representation, reporting, negotiation, intercultural contacts and interaction with the media, parliamentary bodies and other external actors. The course will provide a knowledge base for understanding the policy process and will expose students to policy analysis, memo writing for decisionmaking, negotiations and verbal communications.

Fall IAPA1701N	S01	17282	W	3:00-5:30(10)	(J. Atwood)

Fall IAPA1701N	S02	17804	W	3:00-5:30(10)	(J. Atwood)

IAPA 1701V. Democratization.

This course examines why autocratic states democratize and why democracy breaks down in already democratic states. The course analyzes domestic factors (e.g., values, norms, religion, culture, economic development and inequality, natural resources, protests, insurgencies, and coups d'état), as well as international ones (e.g., trade, foreign aid, international organizations, and international war). The course also examines the reasons for and the effectiveness of different ways that governments resist democratization, including accommodation, censorship, and repression.

Fall IAPA1701V S01 18014 W 3:00-5:30(10) (D. Brancati)

IAPA 1701X. American Education Policy in Historical and Comparative Perspective.

This seminar examines the historical roots of—and contemporary debates over—select but fundamental issues in the finance, regulation, and governance of public education. Our focus is on the American expression of these issues and debates. But we will look to the experience of other multilevel democracies to highlight conceptual and institutional differences that are of theoretical interest and perhaps of practical use. In particular, the seminar will explore how the goals of education as a public good get defined; the history of school finance and governance in America; the ways in which 'school choice' has intersected in practice and in theory with segregation, integration, and debates over mechanisms to improve school quality; on the problems of test-based accountability regimes; and on the role teacher training systems in educational improvement.

Fall IAPA1701X S01 18016 W 3:00-5:30(10) (A. Levitas)

IAPA 1702C. Inequality and Social Mobility in America.

Income and wealth inequality in America are at their highest levels in a century. Historically, one reason Americans have been thought to tolerate inequality is that we tend to believe that our society is a mobile one, where people can easily move from one social class to another. But in recent years, inequality and stagnant social mobility have been associated with increasing social and political distrust and unrest. In this junior seminar, we will examine the economic and political, and ideological factors that have contributed to this historical moment, learn about how Americans experience living in an unequal society, and consider the future of equality and social mobility in the United States. How should our society be shaped, and what are our obligations as members of that society?

Spr IAPA1702C S01 26705 Th 4:00-6:30(17) (A. Bassett)

IAPA 1702E. Smart, Fluid, & Out of Control: The Political Economy of Production.

New technologies like smart production, AI, and 5G, are fundamentally changing how we consume and how produce is being produced. This class explores technological innovation to better understand the changing dynamics of the global political economy and relations between the market and the state. It focuses on the concept of smart production as an outgrowth of flexible production, which is changing relationships between the human body and machine, collective and individual data extraction, and their social adaptations. Through an analysis of these transformations, the class will examine how our ideas of scale, especially the concept of "local", and the meaning of value are being reimagined, and what effect this has on interactions between state, society and market.

Fall IAPA1702E S01 16781 M 3:00-5:30(03) (N. Fu)

IAPA 1702F. Political (dis)engagement, (de)mobilization, and dissent in Eastern Europe.

The course will explore the forms and dynamics of popular political participation, engagement, and disengagement, as they have been emerging and evolving in the region of Eastern Europe, which has been defined by popular mobilizations and revolutions as well as authoritarianism, imperialism, and large-scale war. We will analyze the variations, divergences, and commonalities between the social and political contexts of different states with a special focus on Russia, Ukraine, and Belarus, whose relations are characterized by intertwined histories, power asymmetries, close connections, and extreme confrontations. By situating the developments in this region within broader global and historical contexts, participants will reflect on the possibilities and dynamics of political and societal change and its trajectories. The course is specifically preoccupied with popular politics and the ways agency is historically forged and structurally conditioned.

Fall IAPA1702F S01 16783 T 4:00-6:30(07) (V. Biziukova)

IAPA 1702G. Governing Marginalized Groups: How State Institutions Shape Social Inequality in the U.S..

How does the state govern marginalized groups? And how do the processes of state governance—from population-level policies to everyday institutional interactions—intersect to shape the lives of group members? This course will draw primarily on sociological literature and methods to explore theories and case studies of governance at the margins, highlighting the role of state institutions from courts and prisons to hospitals and schools. The course material will focus on the governance of low-income Black and Brown families in the United States, though much of what we study will apply to other marginalized groups and contexts as well. As we learn together, we will consider the implications of various modes of governance for the reproduction of social marginality—as well as the possibilities of governance for promoting care and justice.

Fall IAPA1702G S01 17780 M 3:00-5:30(10) (C. Sirois)

IAPA 1702H. The Politics of Industrial Transformation.

This course examines the political sources and ramifications of industrial change, which is closely related to the distribution of wealth between and within nations and the response to global challenges. The course will explore why some nations have been more successful in industrial and technological development and how globalization has affected uneven development. Key topics include the relationship between state and market; institutional sources of comparative advantage; the role of national security; globalization; the debate on industrial policy; and the potential of mobilizing industries to address climate change. The experiences of developed countries, particularly those of the U.S., will be discussed in conjunction with those of developing countries.

Fall IAPA1702H S01 16780 T 4:00-6:30(07) (Y. Xu)

IAPA 1702I. Governance from Socialist to Post-socialist China.

This course leads students to investigate the issue of governance under the People's Republic of China (PRC). Who govern? Who is governed? What are the typical techniques and institutions of governance, as well as the rationales, ideologies, and interests behind them? Do state-initiated marketization and globalization create discontinuities in socialist governance? Should one understand Beijing's reinforcement of state sovereignty in the contemporary era as a simple revival of an authoritarian regime, or as more innovative practices? In what ways are governing practices under the Chinese socialist system similar to, or different from, those under liberal democracies? In this seminar course, students will explore these questions through scholarly discussions on governance in the realms of bureaucracy, economic market, technology and media, population, public health, and family. Course materials are drawn from anthropology, political science, sociology, and history.

Fall IAPA1702I S01 16779 M 3:00-5:30(03) (S. Zhao)

IAPA 1702J. The (Racial) Politics of National Culture.

In this junior seminar, we will focus our attention on understanding how culture is constructed and mobilized in defining national belonging following racial logics. We will approach the topic on several levels: a macro-level understanding of national identity formation processes and policies, the meso-level of institutional processes playing a part in deploying concepts of national culture, and micro-level experiences and understanding of these politics among everyday citizens. We will explore the nexus between national culture, identity, citizenship, and whiteness in Western nations with a focus on France, the U.S., and possibly others. Students will write and present final papers on a country of their choosing.

Fall IAPA1702J S01 17783 M 3:00-5:30(03) (S. Planson)

IAPA 1702K. The Political Economy of a Global Green Transition.

How can we green the global political economy? The seminar provides an understanding of the political economy of a global green transition by discussing the inadequacy of our current efforts and the pathways for future transformation. To capture the interdisciplinarity of environmental issues, the seminar is rooted in political economy, drawing from across political science, economics, sociology, and history. The seminar looks at green transition as a global phenomenon and covers issue areas across finance, industrial policy, trade, and security, with a geographic emphasis on the US, the EU, China, and other global South countries. At the end of the seminar, students will have the skillset to grasp the highly complex nature of a global green transformation.

Fall IAPA1702K S01 18012 T 4:00-6:30(07) (M. Larsen)

IAPA 1702L. How Can Activists Change the World? The Dynamics of Power and Resistance.

Who protests, why, and how? Does collective action matter for social and political change? When does non-violent mobilization escalate into full-blown civil war? Why do some social movements succeed while others decline? The analysis of how people make conflicting collective claims on each other, the state, or on third parties can help us understand why and how different forms of political contention such as social movements, revolutions, and ethnic wars have developed in different times and places with varying degrees of success.

Fall IAPA1702L S01 18015 Th 4:00-6:30(04) (L. Acosta)

IAPA 1801D. Politics & Journalism: A Practical Guide to How We Got Here and Where We're Going.

Politics in America has never been so manic, so divided, so pervasive, so vital. But we're not just in overlapping crises of government and democracy and economics and race. We're also in a crisis of truth. It's impossible to think about what is happening in politics without thinking about how it's covered. This course will explore that connection—in a practice-oriented, writing intensive approach which will aim to transform your understanding both of what's really happening in politics and how those developments are presented to the public. Fulfills IAPA senior capstone/seminar requirement.

Spr IAPA1801D S01 26721 T 4:00-6:30(16) (E. Dove)

IAPA 1801F. Prison Abolition as Policy.

We collaborate with the Urban Institute's Justice Policy Center and Office Racial and Equity Research for a collaborative research experience where we will be briefed on a major policy issue that they are working on and create several blogs, Tik-Toks, or a research report. Across each medium, you will provide policy recommendations on an issue of importance to their mission and work. We tackle a central problem in criminal legal system reform: prison abolition. Our work will be presented to the Urban Institute a nonprofit research organization that provides data and evidence to help advance upward mobility and equity. A trusted source for changemakers who seek to strengthen decision-making, create inclusive economic growth, and improve the well-being of families and communities. For more than 50 years, Urban has delivered facts that inspire solutions. Senior seminar.

Fall IAPA1801F S01 17786 Th 4:00-6:30(04) (J. Eason)

IAPA 1801W. National Security, Innovation, and the Congress.

The seminar course will explore the role that Congress and policy making can play in creating an environment to support or impede innovation in our national security science and technology enterprise. The course will discuss the opportunities and challenges of implementing innovative technologies and practices into the complex defense establishment and understand how policymakers can work to create a legal framework, regulations, culture, and financial resources that can support or inhibit innovation. The course will explore the legislative process, focused on how Congress provides legal authorities and funding, and performs oversight activities over the Pentagon. The course will also examine the complementary roles of the legislative branch, executive branch, and the private sector in shaping the policy and innovation environment.

Fall IAPA1801W S01 18956 Th 4:00-6:30(04) 'To Be Arranged'

IAPA 1801X. Surveillance: State, Capitalism, and Society.

When we talk about surveillance, are we thinking of Orwell's Big Brother, the scenarios portrayed in Black Mirror, or Edward Snowden's disclosures? Although technological advances have intensified interest in this subject, surveillance is not a recent development; it has been a fundamental element of modernity. In this course, we will start with the theoretical bases for understanding surveillance. The subsequent weeks are divided into three modules, each focusing on a different participant in surveillance: the state, corporations and the emergence of "surveillance capitalism," and citizens who may embrace, participate in, or resist surveillance. Adopting a global viewpoint, we will explore surveillance practices across various political regimes, throughout different historical periods, and technological advancements. There are no pre-requisites for this seminar.

Fall IAPA1801X S01 18957 Th 4:00-6:30(03) 'To Be Arranged'

IAPA 1801Y. The Politics of Regulation: Technology, Finance, and Climate Change.

Technological innovations are a central force for economic development, but today we are facing some of their most severe and unintended consequences. Some observers argue that only market competition can enable the blossoming of human ingenuity, while others argue that state planning is essential for controlling the dangers inherent in new technologies. Rather than extol or deny the benefits that can come from technology, this course examines how governments in different historical circumstances have attempted to shape and regulate three of the most challenging risks facing advanced societies.

Fall IAPA1801Y S01 18959 Th 4:00-6:30(10) (J. Ziegler)

IAPA 1802S. Human Security and Humanitarian Response: Increasing Effectiveness and Accountability.

Disasters, epidemics, and conflicts all pose significant threats to human security, including the very ability for people to meet their basic needs for protection, food, water, shelter, and healthcare. This course will take a pragmatic approach to understanding how the legal, ethical, and technical principles of humanitarian assistance get translated into actual impact on the ground during large-scale emergencies worldwide. In particular, we will explore the justifications and limitations for humanitarian response as a tool for addressing modern challenges ranging from climate change to civil conflict, alongside new efforts to improve both the effectiveness of humanitarian response and its accountability to affected populations. This course will cover a diverse range of topics including the history, structure, and financing of humanitarian response; the public health evidence base for common human security interventions; and the intersections between human rights and humanitarianism.

Fall IAPA1802S S01 18637 W 3:00-5:30(10) (A. Levine)

IAPA 1803. Humanitarian Response in Modern Conflict.

Armed conflict significantly affects civilian populations, often on a massive scale, and often in ways that generates large-scale humanitarian crises that can last decades or longer. Professional military organizations today are tasked both with prosecuting war and dealing with the humanitarian consequences. How do armed forces deal with this dual challenge? How do humanitarian organizations? What about governments and the private sector? How do policy makers think about these challenges? What accounts for successes and failures? How do military and civilian organizations interact in these settings, and what can be done to improve their engagements to better save lives and alleviate the suffering of affected populations? How can civilian protection, aid worker security, and humanitarian access efforts be improved upon so that humanitarian crises related to conflict can be more effectively addressed?

Fall IAPA1803 S01 16956 M 3:00-5:30(07) (D. Polatty)

IAPA 1804. Diplomacy, Crisis, War in the Modern Era.

This seminar examines war and peace after 1945 through the context of international relations (IR) theory. It teaches students theoretical perspectives on IR and to critically evaluate the changing ways in which states have interacted with one another since the end of World War II. Was the Cold War inevitable? Did nuclear weapons change the way that states negotiated with one another? How much did individuals make a difference during diplomatic crises? Why did states sometimes fail to reach peaceful settlements with one another? How have social and economic institutions changed international politics in the twenty-first century?

Fall IAPA1804 S01 17610 T 4:00-6:30(07) (T. Jost)

IAPA 1804A. Iran and the Islamic Revolution.

Shattering events of 1978-80 in Iran unfolded against the backdrop of the previous decades of Iranian history, knowing that history is essential to understanding the revolution. The revolution cannot be appreciated without studying the enormous effects it's had over the last 35 years. This course places the anti-Shah movement and the rise of religious power in the context of Iran's century of modern history. We conclude by focusing on today's Iran, the upheaval following the 2009 election, reformist president election in 2013, and prospects for reconciliation with the US. Enrollment limited to 20 juniors & seniors. Priority given to IR seniors.

Fall IAPA1804A S01 16784 W 3:00-5:30(10) (S. Kinzer)

IAPA 1804D. Legal Methods for Public Policy.

This course uses both traditional lecture and interactive, mock-trial to give public policy students with the tools to understand, interpret and apply the law as expressed in judicial opinions, particularly the opinions of the Supreme Court of the United States. The end-product for the course will be a capstone public policy paper on a subject of the student's choice involving timely or complex legal issues. For the first three weeks, we'll have an introduction to civil procedure, examining how cases are brought, the requirements for valid claims, including what affects parties' right to bring a lawsuit, emergency relief, disposition with and without trial, appeals and the principles that the Supreme Court uses in deciding cases. If the seminar is oversubscribed, admission will be by lottery, comprised of students who turn in the first assignment and attend the first class session.

Fall	IAPA1804D	S01	18955	T	4:00-6:30(07)	(A. Gabinet)

IAPA 1807C. Individual Research Project.

Section numbers vary by instructor.

Required: A completed proposal form and syllabus and faculty sponsor's and concentration advisor's approval prior to registering.

IAPA 1810. Democratization and Autocratization.

Since the 1970s studies of democratization have shifted from a "global resurgence of democracy" to an "authoritarian resurgence." This course covers the conceptual tools for understanding these developments. We pay particular attention to the assumptions, biases, knowledge structures, and inferences produced by language and imagery--e.g., oilfields and greenhouses, pendulums and waves, pacts and backsliding--in our understanding of new and emerging threats to democracies across the globe. Includes single case, cross-national comparisons, and big data set studies. IAPA Capstone/Sr Seminar

Spr	IAPA1810	S01	26608	Th	4:00-6:30(17)	(C. Elliott)

IAPA 1816A. Senior Honors Seminar.

Open only to Senior students accepted into the honors program in international relations. Instructor permission required.

Fall	IAPA1816A	S01	16785	Th	4:00-6:30(04)	(A. Bassett)
Fall	IAPA1816A	S02	16786	W	6:30-9:00PM	(C. Elliott)

IAPA 1817A. Senior Honors Thesis.

Open only to Senior students accepted into the honors program. Instructor permission required. This course is the second of the two required courses for students writing a thesis in International and Public Affairs, Development Studies, International Relations, or Public Policy. It is taught as an independent study.

IAPA 1818A. Individual Research Project.

Limited to students doing independent study work for Development Studies, International and Public Affairs, International Relations, or Public Policy. Banner overrides will be given by the Undergraduate Concentrations Manager.

IAPA 1852. Individual Research Project.

Supervised reading or research. Specific program arranged in terms of the student's individual needs and interests. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Italian Studies**ITAL 0100. Elementary Italian.**

Elective for students without previous training in Italian. No credit for first semester alone. Fundamentals of Italian grammar and development of skills in speaking, comprehension, and writing. Overview of contemporary Italian society. Four meetings per week, audio and video work, two Italian films. Note: This is a year course.

Fall	ITAL0100	S01	18034	TTh	10:30-11:50(13)	(C. Abbona-Sneider)
Fall	ITAL0100	S01	18034	MW	11:00-11:50(13)	(C. Abbona-Sneider)
Fall	ITAL0100	S02	18035	MW	1:00-1:50(06)	(C. Abbona-Sneider)
Fall	ITAL0100	S02	18035	TTh	1:00-2:20(06)	(C. Abbona-Sneider)

ITAL 0200. Elementary Italian.

See Elementary Italian (ITAL 0100) for course description.

Spr	ITAL0200	S01	26277	TTh	10:30-11:50(09)	(C. Abbona-Sneider)
Spr	ITAL0200	S01	26277	MW	11:00-11:50(09)	(C. Abbona-Sneider)
Spr	ITAL0200	S02	26278	MW	1:00-1:50(08)	(C. Abbona-Sneider)
Spr	ITAL0200	S02	26278	TTh	1:00-2:20(08)	(C. Abbona-Sneider)

ITAL 0300. Intermediate Italian I.

Review of the fundamentals of grammar, with emphasis on speaking and writing. Reading of representative short stories. Weekly compositions, presentations, and a paper. Three Italian films. Prerequisite: ITAL 0100-0200, or ITAL 0110, or placement by examination. Requirement for enrollment in the Bologna Program.

Fall	ITAL0300	S01	18036	MWF	10:00-10:50(14)	(C. Abbona-Sneider)
Fall	ITAL0300	S02	18037	MWF	11:00-11:50(16)	(C. Abbona-Sneider)

ITAL 0400. Intermediate Italian II.

Review of specific grammar problems. Reading of one novel and newspaper articles. Compositions and oral presentations. Three Italian films. Prerequisite: ITAL 0300, or placement by examination.

Spr	ITAL0400	S01	26279	MWF	11:00-11:50(04)	(C. Abbona-Sneider)

ITAL 0500. Advanced Italian I.

The purpose of this advanced course is to improve speaking and writing skills by offering extensive practice in a variety of styles and forms. Students will discuss various aspects of contemporary Italian culture. Reading, analysis and class discussion of texts (articles, songs, pictures, short stories, movies and television), oral presentations, based on research, and a writing portfolio (compositions, essays, blog and a journal). Prerequisites: ITAL 0400, or placement by examination.

Fall	ITAL0500	S01	18038	MWF	12:00-12:50(15)	(C. Abbona-Sneider)

ITAL 0600. Advanced Italian II.

A sixth semester course with intensive practice in speaking and writing. Short stories, poems, music, and movies will be used to discuss Italian Society from the Second World War through the present. We will explore some important themes--family, religion, gender, and politics. Class discussion, compositions, oral presentations, and a final paper. Prerequisite: ITAL 0500, placement by examination.

Spr	ITAL0600	S01	26280	TTh	1:00-2:20(08)	(C. Abbona-Sneider)

ITAL 0820. Pinocchio Unstrung: Story of a Puppet in the New Millennium.

In this course we will first explore the historical background surrounding Pinocchio, including its publication history and the state of Italian children's literature in the unification period. We will then look at various approaches to the text, from (post)structuralist, psychoanalytic and theological interpretations, to then connect the novel to contemporary issues related to ecocriticism, animal studies, posthumanism, and the digital revolution. After reading the novel, the focus will shift to scrutinizing various modern and contemporary retellings, aiming to unravel the relevance of the "Pinocchio myth" today. This prompts an inquiry into the persisting presence of Pinocchio in Western culture and invites contemplation on the reasons behind its continual resurgence.

Fall	ITAL0820	S01	18784	TTh	2:30-3:50(12)	(P. a Marca)

ITAL 0960. Bella Ciao: Resistances in Contemporary Italian Culture.

What does it mean to resist? This course explores the concept of resistance in its multiple cultural representations. Starting from the partisan Resistance against the Nazi-Fascist regime (1943-45), we will touch upon several historical uprisings: civil rights movements, feminist movements, the so-called Years of Lead, anti-mafia activism, anti-globalization movements, antiracist activism. From literature to film/tv series, from photography to visual art to poetry, artists have politically engaged, challenged and modified the idea of resistance embedded within the identity of contemporary Italians. We look at artistic expressions of resistance performed against different forms of power (nationalism, the colonial state, the patriarchal family, the Mafia, the Church, police

violence). We interrogate how the idea of resistance comes to structure Italian culture today and how it reverberates in mainstream narratives of what it means to be Italian.

Fall	ITAL0960	S01	18043	M	3:00-5:30(03)	'To Be Arranged'

ITAL 1262. Women, Gender, and Feminism in Early Modern Italy.

The variety of Italian women's histories, issues of genders and sexualities, and women's ingenious responses to circumvent the limitations placed upon them are the focus of this course. During a Renaissance of flourishing debate on women ranging from the theater of Machiavelli to the dialogue of Castiglione, women themselves transformed historical feminism, the intellectual and cultural movement that advanced the idea of equality and equal opportunity across genders. Materials include archival documents, treatises, letters, literature and the visual arts. This course is the same as HIST 1931L. (P) Taught in English.

Fall	ITAL1262	S01	17973	TTh	1:00-2:20(06)	(C. Castiglione)

ITAL 1400F. Twentieth Century Italian Culture.

Contact the department for course information.

Fall	ITAL1400F	S01	18858	TTh	10:30-11:50	'To Be Arranged'

ITAL 1610. The Divina Commedia: Inferno and Purgatorio.

A close reading of the first two canticles of Dante's poem in the light of contemporary European and American critical interpretations. Enrollment limited to 40.

Fall	ITAL1610	S01	18041	W	3:00-5:30(10)	(R. Martinez)

Fall	ITAL1610	S02	18969	W	12:00-2:30	(R. Martinez)

ITAL 1620. The Divina Commedia: Dante's Paradiso: Justifying a Cosmos.

Close study of the third and final part of Divine Comedy, in which Dante unfolds how, in his view, the planetary and stellar spheres condition human life and fashion the Providential plan of history. There will be ancillary readings from Dante's other works: Convivio, the Monarchia, and the Epistles. In Italian. Prerequisite: ITAL 0500 or 0600, or instructor permission. Enrollment limited to 40.

Spr	ITAL1620	S01	26274	W	3:00-5:30(10)	(R. Martinez)

ITAL 1920. Independent Study Project (Undergraduate).

Undergraduate Independent Study supervised by a member of the Italian Studies Faculty. Students may pursue independent research in order to prepare for their honors thesis or honors multimedia project, or they may enroll in the course in order to work individually with a faculty member on a specific area of Italian Studies not covered in the current course offerings. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ITAL 1990. Senior Conference.

Special work or preparation of an honors thesis under the direction of a member of the staff. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ITAL 2190I. Literature and Media from Avant-garde to AI.

In this seminar, we will examine the relationship between the literary work of art and media in the twentieth- and twenty-first-century, focusing on Italian literature within a comparative context. On the one hand, we will consider how media languages and mass communication systems reshape, regenerate, or reprogram the literary text. On the other hand, we'll consider how historical forms and genres adapt, renew, or re-socialize themselves on new media platforms. Topics include Futurist manifestos as techno-literary forms; Narrative and filmic modernist time; Broadcasting the (poetic) voice; Dramaturgy and televisual serialization; Hypertext and electronic writing; AI and the death of the author. Undergraduate students need the instructor's override. Capped at 12

Fall	ITAL2190I	S01	18987	F	3:00-5:30(11)	(M. Riva)

ITAL 2450. Exchange Scholar Program.

Fall	ITAL2450	S01	16589	Arranged		'To Be Arranged'

Spr	ITAL2450	S01	25248	Arranged		'To Be Arranged'

ITAL 2550. Gender Matters.

This course examines the impact of gender as a category of analysis, focusing upon its varied repercussions on the study of history, with Italian history serving as one field of focus. Participants interested in other

geographical, chronological, and disciplinary areas will have ample time to pursue their interests. The study of gender has profoundly shaped the practice of history in the last half century, and the course outlines its impact and its transformations. The course places in conversation diverse but overlapping historical developments: the impact of the study of gender on history; influences from beyond history that have shared or shaped historians' approach to gender and sexuality; the particular inflections of the study of gender in the case of Italy (1400-1800); the impact of the turn to the study of sexuality and queer studies. The course explores and critiques the limits of our gender constructs (theoretical, methodological, and modern) for explaining the culture of people in the premodern world and beyond the western hemisphere, fields of scholarship where the universality of contemporary notions of gender have been challenged. In English.

Spr	ITAL2550	S01	26273	Th	4:00-6:30(17)	(C. Castiglione)

ITAL 2820. Italian Studies Colloquium.

The Italian Studies Colloquium is a forum for an exchange of ideas and work of the community of Italian scholars at Brown and invited outside scholars. Graduate students present their work in progress, and engage the work of faculty and visitors. They are expected to come prepared with informed questions on the topic presented. Presentations in both Italian and English. Instructor permission required.

Fall	ITAL2820	S01	17975	F	12:00-1:30	(M. Riva)

Spr	ITAL2820	S01	26275	F	12:00-1:30	(M. Riva)

ITAL 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	ITAL2970	S01	16590	Arranged		'To Be Arranged'

Spr	ITAL2970	S01	25249	Arranged		'To Be Arranged'

ITAL 2980. Reading and Research.

Courses on special subjects individually planned and supervised. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

ITAL 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	ITAL2990	S01	16591	Arranged		'To Be Arranged'

Spr	ITAL2990	S01	25250	Arranged		'To Be Arranged'

Judaic Studies

Hebrew

HEBR 0100. Elementary Hebrew.

An introduction to the skills of reading, writing, and conversing in contemporary Israeli Hebrew. Students also read Hebrew texts adapted for their level of Hebrew based on biblical, rabbinic, and modern Hebrew literature, which introduce them to the approaches of Hebrew writers in various periods and to a variety of cultural issues. If registration is closed, please contact the professor and a wait list will be created. This is the first half of a year-long course whose first semester grade is normally a temporary one. Neither semester may be elected independently without special permission. Enrollment limited to 20.

Fall	HEBR0100	S01	16757	TTh	1:00-2:20(08)	(R. Adler Ben Yehuda)

Fall	HEBR0100	S01	16757	MWF	1:00-1:50(08)	(R. Adler Ben Yehuda)

HEBR 0200. Elementary Hebrew.

This is the second half of a year-long course, an introduction to the skills of reading, writing, and conversing in contemporary Israeli Hebrew. Students also read Hebrew texts adapted for their level of Hebrew based on biblical, rabbinic, and modern Hebrew literature, which introduce them to the approaches of Hebrew writers in various periods and to a variety of cultural issues. Prerequisite: HEBR 0100. Students must have taken HEBR 0100 for credit to receive credit for this course. Exceptions must be approved by both the academic department and the Committee on Academic Standing. Enrollment limited to 20.

Spr	HEBR0200	S01	25433	TTh	1:00-2:20(06)	(R. Adler Ben Yehuda)

Spr HEBR0200 S01 25433 MWF 1:00-1:50(06) (R. Adler Ben Yehuda)

HEBR 0300. Intermediate Hebrew.

Develops the skills of reading, writing, and conversing in contemporary Israeli Hebrew at the intermediate level and of reading Hebrew texts of the biblical, rabbinic, and modern periods (biblical stories, rabbinic legends, modern Hebrew poems, stories, essays, newspaper articles). Discussions and compositions focus on the psychological, cultural, political, and social issues reflected in the Hebrew sources that we study. Prerequisite: HEBR 0200 or equivalent. Enrollment limited to 20. If unable to enroll because of closed registration, please contact the professor and a wait list will be created.

Fall HEBR0300 S01 16758 TTh 12:00-12:50(15) (R. Adler Ben Yehuda)

Fall HEBR0300 S01 16758 MWF 12:00-12:50(15) (R. Adler Ben Yehuda)

HEBR 0400. Intermediate Hebrew.

Develops the skills of reading, writing, and conversing in contemporary Israeli Hebrew at the intermediate level and of reading Hebrew texts of the biblical, rabbinic, and modern periods (biblical stories, rabbinic legends, modern Hebrew poems, stories, essays, newspaper articles). Discussions and compositions focus on the psychological, cultural, political, and social issues reflected in the Hebrew sources that we study. Prerequisite: HEBR 0300 or equivalent. Enrollment limited to 20. If unable to enroll because of closed registration please contact the professor and a wait list will be created.

Spr HEBR0400 S01 25434 TTh 12:00-12:50(01) (R. Adler Ben Yehuda)

Spr HEBR0400 S01 25434 MWF 12:00-12:50(01) (R. Adler Ben Yehuda)

HEBR 0500. Writing and Speaking Hebrew.

Enables students to improve their skills in speaking and writing Hebrew on a variety of topics. Features advanced work on language structure and active language practice in the classroom. Class discussions of Israeli current events draw on Israeli stories, poems, television programs, and films and on the Israeli press. Students also compose essays and stories in Hebrew. Prerequisite: HEBR 0400 or equivalent. Enrollment limited to 20.

Fall HEBR0500 S01 16759 TTh 2:30-3:50(12) (R. Adler Ben Yehuda)

HEBR 0600. Issues in Contemporary Israeli Society, Politics, and Culture in Hebrew.

An exploration of current issues in contemporary Israeli society, politics, and culture: the Israeli-Palestinian conflict, tensions between ultra-orthodox and secular Jews, religion and state, Israel as a Jewish and democratic state, the economic gap between rich and poor, the integration of citizens from a variety of backgrounds (Jews of Middle Eastern, North African, Russian, and Ethiopian origin; Arab citizens of Israel), gender relations. Sources include films, television programs, Internet news, works of literature. Conducted in Hebrew. Emphasizes strengthening Hebrew reading, writing, and speaking skills. Prerequisite: HEBR 0500. Students who have not taken HEBR 0500 should see instructor for permission to enroll.

Spr HEBR0600 S01 25435 TTh 2:30-3:50(11) (D. Jacobson)

Judaic Studies

JUDS 0050A. Believers, Agnostics, and Atheists in Contemporary Fiction and Memoirs.

In recent decades, there has been a resurgence of religiosity in contemporary society, while at the same time many have been skeptical and even hostile to religious belief and practice. Others are just not sure what to believe. We will study selections of fiction and memoirs by writers of Christian and Jewish background that explore such situations as the affirmation or negation of the existence of God, the role of religious ritual in a person's life, and the positive and negative impacts on society of religious institutions and the clergy who lead them. Enrollment limited to 19 first-year students.

Fall JUDS0050A S01 19157 TTh 1:00-2:20(06) (D. Jacobson)

JUDS 0050J. Friendship in the Ancient World (RELS 0090F).

Interested students must register for RELS 0090F.

Fall JUDS0050J S01 18805 Arranged 'To Be Arranged'

JUDS 0050M. Difficult Relations? Judaism and Christianity from the Middle Ages until the Present.

Jewish and Christian identity in Europe has traditionally been closely connected to the ways the two religions view each other. Mutual admiration, influence, and hatred have combined together in a difficult relationship, fundamental to European history. In this course, we will survey that relationship, examining some key issues and events which shaped it. The Jews' attitudes and actions will be examined alongside those of their Christian neighbors. Topics covered include: medieval revulsion and attraction; early modern re-evaluations of Judaism and Christianity; modern Christian anti-Semitism, Jewish diplomacy, and the Holocaust; the effects of Vatican II; Israel and the contemporary Christian world.

Spr JUDS0050M S01 25436 TTh 1:00-2:20(08) (A. Teller)

JUDS 0050P. Sacred Spaces: Synagogues, Churches, Mosques.

In this seminar we will examine the architecture and art of synagogues, churches, and mosques from antiquity through the present. We will learn how different building traditions evolved over time, and how sacred spaces reflect beliefs and practices of Jews, Christians, and Muslims. Of interest will be both unique regional and chronological trends—characteristics that are indicative of a specific religious community—but also the parallels and shared features common to all Abrahamic religions. Special attention will be given to questions of gendered space and the role of patriarchy and women's agency in shaping religious architectures.

Fall JUDS0050P S01 16761 Th 4:00-6:30(04) (K. Galor)

JUDS 0060. The Bible and Moral Debate.

How was the Bible employed in past moral debates that divided American society, e.g., debates over the legitimacy of slavery? How is the Bible used in contemporary moral discourse, e.g., concerning abortion, capital punishment and gay rights? What does the Bible really have to say about such issues? This course will consider these and other questions through a close reading of pertinent texts which address topics such as abortion, homosexuality, capital punishment, immigration, gender, family violence, race and slavery, disability, genocide, the environment and inequality of wealth. No prerequisites.

Spr JUDS0060 S01 25437 TTh 2:30-3:50(11) (S. Olyan)

JUDS 0063. Antisemitism: A History.

Antisemitism is sometimes called the "longest hatred," and from Pittsburgh to Paris it is on the rise. This course will examine the history of antisemitism and antisemitic tropes; theoretical approaches to its persistence; and individual case studies. Topics will include: Christian and Muslim anti-Judaism; racism; economic stereotypes; and modern manifestations in the U.S. and Europe.

Fall JUDS0063 S01 16762 TTh 10:30-11:50(13) (M. Satlow)

JUDS 0064. Angels and Demons: Past and Present.

What are angels and demons, what roles do they play in religious thought, and how do their roles change or remain consistent over time? These are only a few of the questions this course seeks to address. Texts to be considered include the Hebrew Bible (Old Testament), the New Testament, the Dead Sea Scrolls, rabbinic literature, the Kabbalah, records of the Salem Witch Trials, Milton's *Paradise Lost*, Goethe's *Faust*, the Book of Mormon, contemporary Evangelical literature and New Age writings, and representations of angels and demons in film and television. No prior knowledge of the Bible, Judaism or Christianity is assumed.

Fall JUDS0064 S01 16763 TTh 2:30-3:50(12) (S. Olyan)

JUDS 0608. The Parting of the Ways?: Questioning Jewish/Christian Difference.

How did a small apocalyptic Jewish movement from the backwaters of the Roman Empire turn into something that "we" might call Christianity? In other words, how and when did Judaism and Christianity "part ways?" While such questions might present themselves as straight-forward investigations into a historical event, they are not, in fact, as innocent as they might first appear. In this course, we will not seek to answer the question of the "Parting of the Ways" as much as we will critique it. Our aim is to reframe this crucial question by reflecting on the categories of

religion, conversion, origins, narrative, and history, among others. We will read through a wide variety of ancient literature (including canonical and non-canonical Christian texts, rabbinic literature, Jewish poetry) and broach modern forms of "Jewish Christianity."

Fall JUDS0608 S01 16764 MWF 10:00-10:50(14) (J. Han)

JUDS 0651. Race, Sexuality, and the Jews.

This seminar offers an interdisciplinary and intersectional examination of the historical and contemporary experiences of Jews from antiquity through the present. We will learn about social and cultural constructions of race, ethnicity, gender, and sexuality, focusing on Jews and other neighboring minority and majority communities; we will study how in different geographical and temporal spheres these communities have defined or blurred boundaries, shaping both distinctly visible and invisible characteristics; we will examine how perceptions of race and ethnicity have changed over time and across circumstances and how the traditional binary of men and women has been reinforced throughout but also how it has been challenged and altered in various contexts.

Spr JUDS0651 S01 25438 M 3:00-5:30(13) (K. Galor)

JUDS 1630. The Talmud.

Written from the first - seventh centuries CE, the Talmud (which runs to 20 volumes) contains law, lore, theological speculation, and complex argumentation. We will read a selection in depth and examine both traditional and modern critical (e.g. historical and literary) approaches to this fundamental text. No prerequisites; all texts in English translation. Enrollment limited to 20.

Fall JUDS1630 S01 16766 W 3:00-5:30(10) (M. Satlow)

JUDS 1753. Blacks and Jews in American History and Culture.

African Americans and American Jews have interacted throughout the history of the United States. Through readings, images, and films, this course will explore this complex, sometimes tortured relationship in its religious, cultural and political aspects. It will discuss the role of Jews in the slave trade, the contributions of both groups to American popular culture, both groups' involvement in the struggle for the Civil Rights Act of 1964, the rise of Black Power, attitudes to Zionism, affirmative action and more. We will try to answer the question how the experiences of both groups both overlapped and led to conflict.

Fall JUDS1753 S01 18334 Th 4:00-6:30(04) (R. Rojanski)

Spr JUDS1753 S01 25439 Th 4:00-6:30(17) (R. Rojanski)

JUDS 1970. Individual Study Projects.

Section numbers vary by instructor. Please see Banner for the correct course reference number (CRN) to use when registering for this course.

JUDS 1975. Honors Thesis Semester I.

First of two semesters working with a faculty member in the Program in Judaic Studies to complete an honors thesis. Instructor permission required.

JUDS 1976. Honors Thesis Semester II.

Second of two semesters working with a faculty member in the Program in Judaic Studies to complete an honors thesis. Instructor permission required.

JUDS 2450. Exchange Scholar Program.

Center for Language Studies American Sign Language

SIGN 0100. American Sign Language I, II.

An immersive approach using authentic communication inside and outside of the classroom will be used to develop introductory communicative skills in American Sign Language. Authentic materials from diverse sources will provide an overview of the American Deaf community. Basic media literacy skills will be taught.

This is the first half of a year-long course whose first semester grade is normally a temporary one. Neither semester may be elected independently without special written permission. The final grade at the end of the course work in SIGN 0200 covers the entire year and is recorded as the final grade for both semesters.

Fall SIGN0100 S01 16908 MWF 11:00-11:50(16) (T. Riker)

Fall SIGN0100 S02 16909 MWF 12:00-12:50(15) (T. Riker)

Fall SIGN0100 S03 16910 MWF 2:00-2:50(01) (T. Riker)

SIGN 0200. American Sign Language I, II.

Introduces basic ASL conversation. Features core vocabulary, common signing phrases, non-manual components (facial expression, body postures), signing space, fingerspelling, numbers, loan signs, cultural protocols, rules of ASL grammar and structure. Deaf cultural behavior is introduced in the classroom and through readings, videotapes, and Deaf community events.

This is the second half of a year-long course. Students must have taken SIGN 0100 to receive credit for this course. If SIGN 0100 was taken for credit then this course must be taken for credit; if taken as an audit, this course must also be taken as an audit. Exceptions to this policy must be approved by both the academic department and the Committee on Academic Standing.

Spr SIGN0200 S01 25744 MWF 11:00-11:50(04) (T. Riker)

Spr SIGN0200 S02 25747 MWF 12:00-12:50(01) (H. Nowicki)

Spr SIGN0200 S03 25748 MWF 2:00-2:50(07) (H. Nowicki)

SIGN 0300. American Sign Language III.

This course will use an immersive approach incorporating authentic communication to develop intermediate communicative skills in American Sign Language. Through authentic materials from diverse sources, students will engage in classroom discussion and produce media to explore Deaf cultural topics related to family dynamics, language and literacy, and education. Prerequisite SIGN 0200 or placement interview. Additional 1 hour session held through Zoom every week to discuss cultural topics.

Fall SIGN0300 S01 16911 MWF 12:00-12:50(15) (H. Nowicki)

Fall SIGN0300 S02 16912 MWF 1:00-1:50(08) (H. Nowicki)

SIGN 0400. American Sign Language IV.

Intensive use of expressive and receptive skills in complex grammatical structures, advanced classifiers, dialogues, and storytelling techniques. Discussion of social factors that give rise to code-switching; regional and ethnic sign variations; social, political, and cultural evolution of U.S. Deaf community. Interaction with Deaf community in directed and non-directed activities. Prerequisite SIGN 0300 or placement interview. Additional 1 hour session held through Zoom every week to discuss cultural topics.

Spr SIGN0400 S01 25749 MWF 12:00-12:50(01) (T. Riker)

Spr SIGN0400 S02 25750 MWF 1:00-1:50(06) (H. Nowicki)

SIGN 0500. American Sign Language V.

This courses increases American Sign Language skills by introducing advanced vocabulary and grammar in various registers and settings, including informal and formal discussions, presentations, and storytelling. Through authentic materials from diverse sources, students will explore American Sign Language literature and oral traditions. Prerequisite SIGN 0400 or placement interview. Additional 1 hour session held through Zoom every week to discuss cultural topics.

Fall SIGN0500 S01 16913 MWF 2:00-2:50(01) (H. Nowicki)

SIGN 1910. Independent Study in Sign Language/Deaf Studies.

Independent study in an area of special interest to the student, with close guidance by a member of the faculty, and leading to a major paper/project. Required of candidates for honors, and recommended for third year students. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Prerequisite: SIGN 0500 or instructor permission.

Arabic

ARAB 0100. First-Year Arabic.

Builds basic listening, speaking, reading, and writing skills, introducing the Arabic language in its cultural environment. Four contact hours per week, with an emphasis on grammar and communication, plus written, audio, and video assignments outside of class. This is the first half of a two-semester sequence course whose first semester grade is normally a temporary one. Neither semester may be elected independently without special written permission. The final grade at the end of the course work in ARAB 0200 covers the entire year and is recorded as the final grade for

both semesters. If course is full, please request an override. Enrollment limited to 18.

Fall	ARAB0100	S01	16639	TTh	9:00-10:20(05)	(A. Hassan)
Fall	ARAB0100	S01	16639	MW	10:00-10:50(05)	(A. Hassan)
Fall	ARAB0100	S02	16640	TTh	10:30-11:50(13)	(A. Hassan)
Fall	ARAB0100	S02	16640	MW	11:00-11:50(13)	(A. Hassan)
Fall	ARAB0100	S03	16641	MW	1:00-1:50(06)	(A. Hassan)
Fall	ARAB0100	S03	16641	TTh	1:00-2:20(06)	(A. Hassan)

ARAB 0200. First-Year Arabic.

Builds listening, speaking, reading, and writing skills, at the low intermediate level of Arabic proficiency. Five contact hours per week, with an emphasis on grammar and communication, plus written, audio, and video assignments outside of class. This is the second half of a year-long course. Students must have taken ARAB 0100 to receive credit for this course. If ARAB 0100 was taken for credit then this course must be taken for credit; if taken as an audit, this course must also be taken as an audit. Exceptions to this policy must be approved by both the academic department and the Committee on Academic Standing. Enrollment limited to 18.

Spr	ARAB0200	S01	25334	TTh	9:00-10:20(05)	(A. Hassan)
Spr	ARAB0200	S01	25334	MW	10:00-10:50(05)	(A. Hassan)
Spr	ARAB0200	S02	25335	TTh	10:30-11:50(09)	(A. Hassan)
Spr	ARAB0200	S02	25335	MW	11:00-11:50(09)	(A. Hassan)
Spr	ARAB0200	S03	25336	MW	1:00-1:50(08)	(A. Hassan)
Spr	ARAB0200	S03	25336	TTh	1:00-2:20(08)	(A. Hassan)

ARAB 0300. Second-Year Arabic.

Develops listening, speaking, reading and writing skills at the intermediate level of language proficiency through extensive use of various texts and multimedia. Promotes better understanding of Arabic cultural traditions. Five contact hours weekly, plus written, audio, and video assignments outside of class. Prerequisite: ARAB 0200. This is the first half of a year-long course. Neither semester may be elected independently without special written permission. The final grade at the end of the course work in ARAB 0400 covers the entire year and is recorded as the final grade for both semesters.

Fall	ARAB0300	S01	16645	TTh	10:30-11:50(13)	(M. Faiza)
Fall	ARAB0300	S01	16645	MW	11:00-11:50(13)	(M. Faiza)
Fall	ARAB0300	S02	16646	MW	1:00-1:50(06)	(M. Faiza)
Fall	ARAB0300	S02	16646	TTh	1:00-2:20(06)	(M. Faiza)

ARAB 0400. Second-Year Arabic.

Develops listening, speaking, reading and writing skills at the intermediate level of language proficiency through extensive use of various texts and multimedia. Promotes better understanding of Arabic cultural traditions. Five contact hours weekly, plus written, audio, and video assignments outside of class. Prerequisite: ARAB 0300. This is the second half of a year-long course. Students must have taken ARAB 0300 to receive credit for this course.

Spr	ARAB0400	S01	25337	TTh	10:30-11:50(09)	(M. Faiza)
Spr	ARAB0400	S01	25337	MW	11:00-11:50(09)	(M. Faiza)
Spr	ARAB0400	S02	25338	MW	1:00-1:50(08)	(M. Faiza)
Spr	ARAB0400	S02	25338	TTh	1:00-2:20(08)	(M. Faiza)

ARAB 0500. Third-Year Arabic.

This course offers comprehensive training in listening, speaking, reading, and writing at the advanced proficiency level. It will accelerate students' advancement toward language and cultural proficiency by integrating the study of Modern Standard Arabic and Colloquial Arabic, the latter of which will be the main form of oral communication in class discussions. Thematic units will include selections from the classical and modern traditions of Arabic writing, contemporary film and media, and various art forms with the goal of broadening students' understanding of Arab societies and their cultures. Through this integrated approach, students will gain confidence to function in an ample variety of social and cultural environments and access a wider range of media. Prereq: ARAB0400 or equivalent

Fall	ARAB0500	S01	16738	MTWTh	11:00-11:50	(E. Belmont Flores)
Fall	ARAB0500	S02	16739	MTWTh	10:00-10:50	(E. Belmont Flores)

ARAB 0600. Third-Year Arabic.

Offers comprehensive training in listening, speaking, reading, and writing with grammar review as needed. Broadens students' perspective of Arabic culture with selections from the classical and modern traditions of Arabic writing and various art forms. Four contact hours weekly. Prerequisite: ARAB 0500.

Spr	ARAB0600	S01	25339	MTWTh	11:00-11:50	(E. Belmont Flores)
Spr	ARAB0600	S02	25340	MTWTh	10:00-10:50	(E. Belmont Flores)

ARAB 0950. Advanced Reading and Composition: Arabic Fiction in the West.

This course explores themes of exile, nostalgia, and identity in works written in Arabic by Arab authors living in the West. The course aims to improve the students' skills in critical reading and writing through studying and analyzing original texts in their linguistic, cultural and historical contexts. Students read short stories and novels in Arabic by writers including Houda Barakat, Hassouna Mosbahi and Abdul Hadi Saadoun. All readings and discussions in Arabic.

Fall	ARAB0950	S01	18968	TTh	2:30-3:50(12)	(M. Faiza)
Spr	ARAB0950	S01	26128	TTh	2:30-3:50(11)	(M. Faiza)

ARAB 1990. Special Topics in Arabic Language, Literature, and Culture.

Advanced level integrated skill course focusing on specific reading and writing topics derived from the traditions and arts of the Arabic language. Course prerequisites include advanced capacity in Arabic grammar and reading comprehension. Enrollment limited to 10.

ARAB 2450. Exchange Scholar Program.

Fall	ARAB2450	S01	16536	Arranged		'To Be Arranged'

Catalan

CATL 1910. Independent Study in Catalan.

An open content course, which may be offered each semester. Offered as an Independent Study, this course will be adapted to students' needs that are not currently covered by our curricular offerings.

English for Internationals

EINT 2200. Academic Interactions.

This course develops the English language skills of first-year international graduate students who are preparing to be teaching assistants. Students improve their fluency and expression of complex ideas in a variety of linguistic situations typical of classroom interactions. Students also increase their control of vocabulary, pronunciation and listening comprehension when communicating with American undergraduates. Instructor permission required.

Fall	EINT2200	S01	16649	MTWTh	12:00-12:50	(M. Leuchak)

EINT 2300. Negotiating an American Classroom.

In this course, international graduate students increase their abilities to communicate accurately and fluently in English with American undergraduates. International students develop their ability to interact, in culturally appropriate ways, in a variety of teaching situations common to an institution of higher education, where they are responsible for expressing and explaining complex information and ideas in English. Instructor permission required.

Fall	EINT2300	S01	16648	MTWTh	12:00-12:50	(B. Gourlay)
Spr	EINT2300	S01	25333	MTWTh	12:00-12:50	(B. Gourlay)

EINT 2400. Speaking Professionally for Internationals.

This course develops the English communication skills of international graduate students with an emphasis on intelligibility of speech and clarity of expression in a variety of teaching and professional situations (e.g. presenting material, responding to questions, directing discussions). Students develop increased facility of English in extended discourse when they are the authority in a teaching or other professional context. Instructor permission required.

Fall	EINT2400	S01	16653	MW	9:00-9:50	(M. Leuchak)
Fall	EINT2400	S02	16916	TTh	9:00-9:50	(M. Leuchak)
Spr	EINT2400	S01	25402	MW	9:00-9:50	(M. Leuchak)
Spr	EINT2400	S02	25403	TTh	9:00-9:50	(M. Leuchak)

EINT 2500. Advanced Articulation Tutorial.

This course is an advanced pronunciation tutorial for international graduate students who have achieved a near-native speaker level of fluency in English, but who require greater precision of English articulations, pronunciation, fluency and/or expression. Instructor permission required.

Fall	EINT2500	S01	16651	MTWTh	10:00-10:50	(M. Leuchak)
Fall	EINT2500	S02	16652	MTWTh	11:00-11:50	(B. Gourlay)
Spr	EINT2500	S01	25404	MTWTh	11:00-11:50	(B. Gourlay)
Spr	EINT2500	S02	25405	MTWTh	10:00-10:50	(M. Leuchak)

Hindi-Urdu**HNDI 0100. Beginning Hindi or Urdu.**

Introduces conversation, reading, and writing of modern standard Hindi and the Devanagari script. Those who already know Devanagari but have rusty conversation skills may join the class second semester; obtain instructor's permission during the first semester. Those who prefer to learn Urdu and the Persian script should contact the instructor.

Fall	HNDI0100	S01	16642	TTh	12:00-12:50(15)	(A. Koul)
Fall	HNDI0100	S01	16642	MWF	12:00-12:50(15)	(A. Koul)

HNDI 0200. Beginning Hindi or Urdu.

Introduces conversation, reading, and writing of modern standard Hindi and the Devanagari script. Those who already know Devanagari but have rusty conversation skills may join the class second semester; obtain instructor's permission during the first semester. Those who prefer to learn Urdu and the Persian script should contact the instructor. Prerequisite: HNDI 0100.

Spr	HNDI0200	S01	25399	TTh	12:00-12:50(01)	(A. Koul)
Spr	HNDI0200	S01	25399	MWF	12:00-12:50(01)	(A. Koul)

HNDI 0300. Intermediate Hindi-Urdu.

A continuation of HNDI 0100-0200, which is a prerequisite. Introduces the variation of the Arabic script used for Urdu. Prepares students to communicate in written and spoken language. Activities are conducted in Hindi/Urdu. Meets four hours weekly.

Fall	HNDI0300	S01	16643	TTh	1:00-1:50(08)	(A. Koul)
Fall	HNDI0300	S01	16643	MWF	1:00-1:50(08)	(A. Koul)

HNDI 0400. Intermediate Hindi-Urdu.

A continuation of HNDI 0100-0200. Introduces the variation of the Persian script used for Urdu. Prepares students to communicate in written and spoken language. Activities are conducted in Hindi/Urdu. Meets four hours weekly. Prerequisite: HNDI 0300.

Spr	HNDI0400	S01	25400	TTh	1:00-1:50(06)	(A. Koul)
Spr	HNDI0400	S01	25400	MWF	1:00-1:50(06)	(A. Koul)

HNDI 1080. Advanced Hindi-Urdu.

Each student follows an independent reading list determined in consultation with the instructor. The readings may include folk tales, journalistic prose, 20th-century literature, classical Urdu poetry of the 17th to 19th centuries, or subjects in nonfiction. The class meets together three hours weekly for discussion. Each student also spends one hour weekly with the instructor. Prerequisite: HNDI 0400.

Fall	HNDI1080	S01	16644	MWF	9:00-9:50(09)	(A. Koul)
Spr	HNDI1080	S01	25401	MWF	9:00-9:50(02)	(A. Koul)

Language Studies**LANG 0150S. Swahili I.**

Students successfully completing this beginner's course in Swahili Language and Culture will be able to communicate in Swahili in a culturally-appropriate way. Students will practice skills in an integrated fashion in order to reach some proficiency in speaking, reading, listening, and writing. Course content includes language, culture, history and music. Heritage speakers may place into the course depending on their language level. Like English, Swahili is not a tonal language, and considered to be one of the easier African languages to learn. Whether you are interested in Swahili in order to study and work in Africa or to engage with Swahili speakers in other parts of the world, this beginners course will prepare you well!

Fall	LANG0150SS01	16744	TTh	9:00-10:20(05)	(J. Lehnen)

LANG 0250S. Beginning Swahili II.

Students successfully completing the second semester of this beginner's course in Swahili Language and Culture will be able to communicate in Swahili in a culturally-appropriate way. Students will practice skills in an integrated fashion in order to reach an intermediate low level of proficiency in speaking, reading, listening, and writing. Course content includes language, culture, history, music and children's literature. Heritage speakers may place into the course depending on their language level. Like English, Swahili is not a tonal language, and considered to be one of the easier African languages to learn. Knowledge of Swahili will assist you in order to study and work in Africa (Kenya and Tanzania) and to be able to engage with Swahili speakers in other parts of the world.

Spr	LANG0250SS01	25765	TTh	9:00-10:20(05)	(J. Sokolosky)

LANG 0710. Protest and Dissidence in Iran.

The anti-authoritarian Woman, Life, Freedom movement arose as a reaction to protests, incarceration and death in Iran in the fall of 2022. In this first-year seminar, you will learn about Iran, a country of 87 million people bordered by Iraq and Afghanistan. We will discuss historical events such as the 1979 Iranian Revolution and how they still affect Iran's relationship to the West. Through a broad selection of texts, film and art, we will explore topics that include corruption, authoritarianism, multiculturalism, race, social class, religion and gender relations in today's Iranian culture and society. In English.

Fall	LANG0710	S01	18651	TTh	1:00-2:20(06)	(M. Quay)

LANG 0750. Identity and Languages in Contemporary Africa.

When you think of contemporary Africa, what's the first thing that comes to mind? IS it a megacity? Africa is the most rapidly urbanizing continent in the world. It is home to three of the world's megacities (populations of 10 million). It is also home to one-third of the world's languages and over 2000 languages are spoken in Africa. What is daily life within them like, and what kinds of linguistic, cultural, economic, and political roles do they play in our world? In this interdisciplinary class, we'll look for answers to these questions in articles and mixed media, including Instagram posts, op-eds, TED Talks, YouTube music videos, sci-fi short stories, documentary photography, and more. What we'll find might surprise you. Along the way, we'll also do some critical reflection and self-examination: what shapes the ways we think about Africa and why?

Fall	LANG0750	S01	16753	TTh	1:00-2:20(06)	(V. Alabi)

LANG 0760. Language and Film Discourse in Africa.

Africa is home to one of the biggest film industries in the world, Nollywood. In this course, we will watch and analyze selected scenes in films. We will also examine the language used in films to express speech acts (that is, an utterance considered an action) such as advice, apologies, compliments, gratitude, greetings, refusals, requests, and sympathies. Moreover, we will analyze the linguistic, contextual, and social phenomena in African films made in African languages within the past five years. In addition, we will consider language, context, power relations, proverbs, political discourse, and medical discourse in the African film ecology.

Spr	LANG0760	S01	25570	TTh	2:30-3:50(11)	(V. Alabi)

LANG 0800. Theory and Practice of Intercultural Competence.

What is intercultural competence? What are its benefits in our globalized society? Through readings, discussions, videos and visuals students will learn the theory behind intercultural competence as well as practical aspects about gaining and honing the skills needed for IC. Students will experience how the implementation of IC enhances study, work and internships carried out both globally and domestically. Limited to 40 students. This course is open to all students. It is also the foundational course required of students participating in Brown's Certificate of Intercultural Competence.

Fall	LANG0800	S01	16745	W	3:00-5:30(10)	(K. Kang)
Spr	LANG0800	S01	25567	W	3:00-5:30(10)	(E. Ozdemir)

LANG 1800. Capstone Seminar in Intercultural Competence.

This course serves as the final capstone course for the Certificate in Intercultural Competence. Students will connect the skills, attitudes and knowledge developed throughout the course work and experiential learning component of the Certificate to their future goals. Students will work on synthesizing all components of the Certificate through weekly discussions, simulations and case studies. Research topics and group discussions are designed to continue conversations that extend the work

that began in the required foundation course LANG0800 The Theory and Practice of Intercultural Competence. Students will prepare a multi-modal presentation, and have the option of presenting a portfolio in a digital format, a podcast or a video, of the work they have completed along their journey towards intercultural competence. Students will participate in a public presentation session in order to share their work and engage the wider language-learning community on-campus.

Spr LANG1800 S01 25764 Th 2:30-3:50 (E. Belmont Flores)

LANG 1900. Independent Study in Languages.

This course will meet the needs of students who are not studying one of the languages offered by the CLS faculty. Beginner, Intermediate or Advanced integrated skill course focusing on specific reading and writing topics selected by the faculty advisor and the student. Enrollment limited to 10.

LANG 2450. Exchange Scholar Program.

Spr LANG2450 S01 25251 Arranged 'To Be Arranged'

LANG 2900. Seminar in Language Pedagogy and Second Language Acquisition.

This course prepares graduate students in modern languages to understand theories of language pedagogy and second language acquisition. Students will gain both practical knowledge to incorporate into everyday teaching as well as an understanding of which approaches to teaching might be more effective than others in various classroom contexts and why. Undergraduates may enroll with permission of the instructor.

Spr LANG2900 S01 25763 Th 9:00-11:50 (K. Kang)

LANG XLIST. Courses of Interest to Students pursuing the Certificate in Intercultural Competence.

Nahuatl

NAHU 0100. Beginning Nahuatl.

Once the lingua franca of the Aztec Empire, Nahuatl is the most widely spoken indigenous language in Mexico and in North America as a whole, with 1.7 million speakers and 30 variants. As the vehicle of centuries-old knowledge transmitted orally, Nahuatl offers an entry point into the cultures and worldviews of various indigenous communities today, both in Mexico and its diaspora. This online course offers an introduction to Nahuatl (Huasteca variant) through an immersive methodology focused on developing your speaking, listening comprehension, reading and writing, while fostering your cultural sensibility and competence. Ability to understand Spanish is desirable. Language of instruction is Nahuatl and Spanish.

Fall NAHU0100 S01 16754 TTh 10:00-12:00 (E. de la Cruz Cruz)

NAHU 0200. Beginning Nahuatl II.

Once the lingua franca of the Aztec Empire, Nahuatl is the most widely spoken indigenous language in Mexico and in North America as a whole, with 1.7 million speakers and 30 variants. As the vehicle of centuries-old knowledge transmitted orally, Nahuatl offers an entry point into the cultures and worldviews of various indigenous communities today, both in Mexico and its diaspora. This online course offers an introduction to Nahuatl (Huasteca variant) through an immersive methodology focused on developing your speaking, listening comprehension, reading and writing, while fostering your cultural sensibility and competence.

Spr NAHU0200 S01 26129 TTh 10:00-12:00 (E. de la Cruz Cruz)

NAHU 0300. Intermediate Nahuatl.

Intermediate Nahuatl offers students the opportunity to learn new themes and cultural practices of the Nahua communities of Chicontepec after NAHU 0100 and NAHU 0200. The approach is geared towards developing communication skills at an intermediate level. These skills will also allow students to explore colonial documents written in classical Nahuatl.

The teaching method employs a communicative and cultural approach designed to develop both language proficiency and cultural competence. This is achieved through activities related to specific functions, contexts, grammar, and vocabulary relevant to everyday life situations in an indigenous community. Sessions are highly participatory and interactive, and small group work is often used. The course is mostly taught in Nahuatl to encourage its use and practice in classes.

Fall NAHU0300 S01 16755 TTh 1:00-3:00 (E. de la Cruz Cruz)

NAHU 0400. Nahuatl II.

Nahuatl II or intermediate offers students the opportunity to learn new themes and cultural practices of the Nahua communities of Chicontepec after NAHU 0100, NAHU 0200 and NAHU 0300. The approach is geared towards developing communication skills at an intermediate level. These skills will also allow students to explore colonial documents written in classical Nahuatl. The teaching method employs a communicative and cultural approach designed to develop both language proficiency and cultural competence. This is achieved through activities related to specific functions, contexts, grammar, and vocabulary relevant to everyday life situations in an indigenous community. Sessions are highly participatory and interactive, and small group work is often used. The Nahuatl II course is mostly taught in Nahuatl, to encourage its use and practice in classes.

Spr NAHU0400 S01 26132 TTh 1:00-3:00 (E. de la Cruz Cruz)

Persian

PRSN 0100. Basic Persian.

Persian (Farsi) is a Middle Eastern language spoken by millions of people across Iran, Afghanistan, and Tajikistan. This fast-paced course for beginners stresses the acquisition of Persian alphabet and basic grammatical patterns, beginning levels of speaking, listening, reading, and writing. Strong emphasis on the links between language and culture. One additional hour completed asynchronously by enrolled students.

Fall PRSN0100 S01 16741 MWF 10:00-10:50(14) (M. Quay)

PRSN 0200. Basic Persian.

Fast-paced course for beginners. Course stresses acquisition of Persian alphabet and basic grammatical patterns, beginning levels of speaking, listening, reading, and writing. Strong emphasis on the links between language and culture.

This is the second half of a year-long course. Students must have taken PRSN 0100 to receive credit for this course. If PRSN 0100 was taken for credit then this course must be taken for credit; if taken as an audit, this course must also be taken as an audit. Exceptions to this policy must be approved by both the academic department and the Committee on Academic Standing.

One additional hour in consultation with instructor and enrolled students.

Spr PRSN0200 S01 26134 MWF 9:00-9:50(02) (M. Quay)

PRSN 0300. Intermediate Persian Language and Culture.

Expands students' proficiency in modern Persian language and culture; develops listening, speaking, reading and writing skills at the intermediate level through various texts and multimedia. Prerequisite: PRSN 0200. One additional hour in consultation with instructor and enrolled students.

Fall PRSN0300 S01 16742 MWF 2:00-2:50(01) (M. Quay)

PRSN 0400. Intermediate Persian Language and Culture.

Expands students' proficiency in modern Persian language and culture; develops listening, speaking, reading and writing skills at the intermediate level through various texts and multimedia. Prerequisite: PRSN 0300. One additional hour in consultation with instructor and enrolled students.

Spr PRSN0400 S01 26135 MWF 2:00-2:50(07) (M. Quay)

PRSN 0720. Modern Iran: Literature, Media & Pop Culture.

From the world-famous novels of Shahrnush Parsipour to the subversive rap lyrics of Hichkas; from the Oscar-winning films of Asghar Farhadi to state-sponsored TV propaganda of the Islamic Republic – this course takes a wide-ranging approach to understanding contemporary Iranian culture and society. Through a broad selection of sources translated into English, students will familiarize themselves with recent historical events in Iran and become more acquainted with various aspects of Iranian culture. The chronological focus will be from the 1979 Iranian Revolution to the present and will be organized around a number of social and political themes, including corruption, authoritarianism, multiculturalism, race, social class, religion and gender relations. No proficiency in Persian (Farsi) is required to enroll; however a separate discussion will be offered for students with Persian proficiency. No prior knowledge of the Middle East needed to enroll.

Spr PRSN0720 S01 26140 TTh 1:00-2:20(08) (M. Quay)

PRSN 2980. Reading and Research.

Work with individual students in connection with special readings, problems of research, or preparation of theses. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Turkish**TKSH 0100. Introduction to Turkish Language and Culture I.**

This is a proficiency oriented introductory course to Turkish Language and Culture. It adopts an integrated skills approach and is designed for students with little or no prior knowledge of Turkish. The course combines an emphasis on the development of communicative competences with an understanding of language structures and grammar as well as insights into Modern Turkish society and culture. The aim is to introduce students to basic linguistic structures and develop the ability to comprehend and produce text, as well as to speak and understand speech, in a variety of contexts and registers. Graduate students should contact the instructor to register.

Fall TKSH0100 S01 16747 MWF 12:00-12:50(15) (E. Ozdemir)

TKSH 0200. Introduction to Turkish.

This is the second semester of a proficiency oriented introductory course to Turkish Language and Culture. It adopts an integrated skills approach and is designed for students who have taken Turkish 0100 or have placed into the class after consultation with the instructor or a placement exam. The course combines an emphasis on the development of communicative competences with an understanding of language structures and grammar as well as insights into Modern Turkish society and culture.

Spr TKSH0200 S01 25568 MWF 12:00-12:50(01) (E. Ozdemir)

TKSH 0300. Intermediate Turkish.

This course focuses on both communicative skills and the language structures of modern Turkish. Students will learn about Turkish society, culture, and traditions. Course materials include Turkish films, podcasts, radio programs, as well as authentic and adapted Turkish written texts. New students can place into the course depending on their language level. Class will be scheduled for three times a week synchronously in consultation with students and the instructor. There will also be one hour of asynchronous instruction.

Fall TKSH0300 S01 16748 MWF 11:00-11:50(16) (E. Ozdemir)

TKSH 0400. Intermediate Turkish II.

TKSH 0400 is designed for students who have taken TKSH 0300 and already studied Turkish language to develop proficiency at an advanced level. New students can place into it, after special arrangements with the instructor. The course places equal emphasis on further developing four skills (reading, listening, speaking, and writing) at an advanced proficiency level as well as advanced compound and subordinate structures in grammar. It combines an emphasis on the development of communication skills with an understanding of the language and insights into Modern Turkish society and culture. There will be one additional hour TBD in consultation with the instructor and students.

Spr TKSH0400 S01 25569 MWF 11:00-11:50(04) (E. Ozdemir)

TKSH 0720A. Understanding Modern Turkey Through Film and Literature.

This course will introduce students to modern Turkey and offer a wide range of perspectives on the society and its culture. Each week, we will focus on a single theme such as: family and gender; social classes and their interaction with each other; Istanbul and its neighborhoods; Turkey's role within Europe; ethnic identities and their recognition by Turkish society; Turkish media and entertainment; modernism and political Islam; important events in the very recent history of Turkey including the Hrant Dink assassination, terror attacks, and the 2016 coup d'état attempt; education and academic freedom; modern literature; specific cultural practices and rituals; foreigners' perspectives on Turkish society; and modern Turkish sensory experiences including music and cuisine.

Fall TKSH0720AS01 16749 W 3:00-5:30(10) (E. Ozdemir)

TKSH 1100. Introductory Ottoman Turkish I.

This course is open to both graduate and undergraduate students. This introductory course aims to develop learners' Ottoman Turkish reading

and understanding skills written in the Ottoman Turkish (Arabo-Persian) alphabet. Students will practice reading Ottoman Turkish starting with simple separate words, and they will gradually move to studying longer texts. Simultaneously, students will review the main grammatical features of Ottoman Turkish including simple Arabic and Persian grammatical elements in the texts. Students will also practice how to solve problems encountered in the texts with use of dictionaries. In this introductory course students will mainly study the printed Ottoman Turkish texts published after the Second Constitutional Era (1908), and then they will be introduced to the texts of the 'New Ottoman Turkish' era (1839-1908). Minimum B2 level of Turkish is required for this class. Please email me if you have any questions about your Turkish language level.

Fall TKSH1100 S01 16750 MWF 10:00-10:50(14) (E. Ozdemir)

Yoruba**YORU 0100. Introduction to Yoruba I.**

Students successfully completing this beginner's course in Yoruba Language and Culture will have the facility to speak in proper tones and patterns and to understand Yoruba used in common everyday situations. Students will practice skills in an integrated fashion in order to reach some proficiency in speaking, reading, listening, and writing. Course content includes Yoruba culture, literature, theater and music. Heritage speakers may place into the course depending on their language level.

Fall YORU0100 S01 16751 MWF 2:00-2:50(01) (V. Alabi)

YORU 0200. Introduction to Yoruba II.

Students successfully completing this beginner's course in Yoruba Language and Culture will have the facility to speak in proper tones and patterns and to understand Yoruba used in common everyday situations. Students will practice skills in an integrated fashion in order to reach some proficiency in speaking, reading, listening, and writing. Course content includes Yoruba culture, literature, theater and music. Heritage speakers may place into the course depending on their language level.

Spr YORU0200 S01 25571 MWF 2:00-2:50(07) (V. Alabi)

YORU 0300. Intermediate Yoruba I.

Students will learn to speak, read and write Yorùbá at an intermediate level. Classroom time focuses on speaking; homework includes work with the textbook and vocabulary learning. Texts include a variety of materials from BBC including films and audio materials. Learners will also be introduced to some current affairs, social, artistic and cultural events and issues in Nigeria. Learners will work on a paper in Yorùbá about their exposure to the language and culture as a final project.

Fall YORU0300 S01 16752 MWF 1:00-1:50(08) (V. Alabi)

YORU 0400. Intermediate Yoruba II.

This intermediate course expands on the work done in YORU0300. Focus continues to be on speaking while also learning to write longer texts in Yorùbá with tones. Students will become more familiar with the tradition of Yorùbá proverbs. Themes of the course include aspects of African culture such as education, fashion, music, business, film, and politics.

Spr YORU0400 S01 25572 MWF 1:00-1:50(06) (V. Alabi)

Latin American and Caribbean Studies**LACA 1601Y. Indigenous Arts and Activism in Brazil (POBS 1601Y)..**

Interested students must register for LACA 1601Y.

Fall LACA1601Y S01 18958 Arranged 'To Be Arranged'

LACA 1990. Individual Thesis Preparation.

For Latin American + Caribbean Studies concentrators writing senior projects or honors theses.

LACA 1991. Individual Thesis Preparation.

For Latin American + Caribbean Studies concentrators writing senior projects or honors theses.

LACA 1994. Independent Readings in Latin American and Caribbean Studies.

For upper-division students interested in pursuing topics in Latin American and Caribbean Studies not currently taught in the Brown curriculum. Students must have significant prior coursework, language skills, and sufficient background knowledge to put together a comprehensive reading list and to produce a final paper that meets the research requirement in the LACA concentration. Course restricted to S/NC.

Class requirements include weekly meetings with the instructor, reading responses submitted before each meeting, and a self-assessment at the end of the semester by the student. The independent study will culminate in a research paper of sufficient depth and sophistication to meet the research requirement for the concentration in Latin American and Caribbean Studies.

Registration requires a comprehensive reading list developed by the student in consultation with the faculty member and a written agreement on course requirements. The concentration advisor's approval is required if the course is to count toward the concentration.

No more than two (2) semesters of LACA 1994/1995 may be used toward concentration requirements in Latin American and Caribbean Studies.

LACA 1995. Independent Readings in Latin American and Caribbean Studies.

For upper-division students interested in pursuing topics in Latin American and Caribbean Studies not currently taught in the Brown curriculum. Students must have significant prior coursework, language skills, and sufficient background knowledge to put together a comprehensive reading list and to produce a final paper that meets the research requirement in the LACA concentration.

Class requirements include weekly meetings with the instructor, reading responses submitted before each meeting, and a self-assessment at the end of the semester by the student. The independent study will culminate in a research paper of sufficient depth and sophistication to meet the research requirement for the concentration in Latin American and Caribbean Studies.

Registration requires a comprehensive reading list developed by the student in consultation with the faculty member and a written agreement on course requirements. The concentration advisor's approval is required if the course is to count toward the concentration.

No more than two (2) semesters of LACA 1994/1995 may be used toward concentration requirements in Latin American and Caribbean Studies.

LACA 2980. Graduate level independent study.

This course is meant for graduate students completing a specially designed MA program in Development Studies, Latin American and Caribbean studies and related disciplines. Instructor permission is required for enrollment.

Linguistics

LING 0100. Introduction to Linguistics.

The ability to speak and understand a language involves having mastered (quite unconsciously) an intricate and highly structured rule-governed system. Linguists seek to model that rule system. This course introduces students to the areas of phonetics (speech articulation and transcription), phonology (the principles that govern how sounds are put together), morphology (the principles governing word structure), syntax (the rule system governing sentence structure), and semantics (the system that relates sentences to meanings).

Fall LING0100	S01	17604	TTh	10:30-11:50(13)	(U. Cohen Priva)
Spr LING0100	S01	25884	MWF	10:00-10:50(03)	(J. Benheim)

LING 0511. Language and Gender.

In this course, we will explore the relationship between language and gender: how ideologies about gender shape language, and, conversely, how language is used to construct gender and gendered identities. To accomplish this, we will pair the tools of linguistic analysis with social theory on gender. Topics include historical developments in the field of language and gender, speech act theory and performativity, grammatical gender, and sociolinguistic style and indexicality. Throughout the course, we will consider how intersections with other social identities – such as race, class, sexuality, and age – inform how people construct gender through language and how these intersections impact which communities have historically been prioritized in research in this area.

Fall LING0511	S01	18852	MWF	10:00-10:50(14)	(J. Benheim)

LING 0530. Diversity in American Languages.

This course provides an overview of the history, structure, and diversity of languages in the United States, focusing on four categories: indigenous, colonial, immigrant, and new languages. It explores how these languages

reflect and constitute cultural identity, and the ways in which they are shaped by social, political, and educational factors. The course includes topics like Native American languages, African American English, and American English dialects, including the dialects of New England, and critically examines the connections between language, race, power, and privilege. This is an introductory course and no prior linguistics training is required.

Spr LING0530	S01	26726	TTh	1:00-2:20(08)	(C. Nove)

LING 1200. Phonology.

Examines some of the classic and current issues regarding sound structure in the world's languages and introduces the theoretical tools needed to solve them. After an introduction to articulatory phonetics and phonemic analysis, it focuses on phonological analysis of different languages, and discusses rule-based and constraint-based approaches to phonology. Implications for language learning and language change are discussed. Prerequisite: LING 0100.

Spr LING1200	S01	25881	TTh	10:30-11:50(09)	(U. Cohen Priva)

LING 1311. Linguistic Variation and Universals.

As anyone who has tried to learn a foreign language knows, languages differ from one another in numerous ways both superficial and profound. Although there are many different ways in which syntactic structure varies across languages, this variation is not limitless; it is subject to principled constraints, and different logically independent dimensions of variation often turn out to be highly correlated with one another. This course explores language universals and the range of cross-linguistic variation in the domain of morphosyntax, what limits this variation appears to have, and what functional, formal, and semantic principles underlie this variation.

Fall LING1311	S01	17605	MWF	11:00-11:50(16)	(S. AnderBois)

LING 1410. Lexical Semantics.

The representation of word meaning and generalizations about the way in which meanings are packaged into words. Topics include: "fuzzy" meanings, natural kind terms, how word meanings are decomposed. Special emphasis on how temporal properties are encoded, on the status of "thematic relations," and on how the fine-grained structure of word meanings impacts on the syntax. Recommended prerequisite: CLPS 0030.

Spr LING1410	S01	25883	TTh	9:00-10:20(05)	(P. Jacobson)

LING 1512. Language and Ethnicity.

This course explores historical, cultural, and theoretical perspectives on the relationship between language and ethnicity, and related concepts such as race, with a special focus on the United States. It centers on class discussions informed by readings that examine how language reflects and defies ethnic boundaries and how ideas about ethnicity influence the ways people use and construe language. The course covers topics such as ethnicization, racialization, authentication, linguistic repertoire, style shifting, mocking, ideology, and the concept of the listening subject. Requirements include attendance, participation, essays, class presentations, and a final paper. Students will gain experience in collecting and interpreting linguistic data and enhance their ability to write about language from a social scientific perspective, with the opportunity to incorporate feedback into their writing. Prerequisites: LING 0100/CLPS 0300, LING 0511/CLPS 0340, or LING 0530/CLPS 0370.

Fall LING1512	S01	18967	TTh	1:00-2:20(06)	(C. Nove)

LING 1615. Sociolinguistic Cognition.

In this course, we will explore how language meets social information in the mind. We will address questions like: How do we infer who someone is from the way that they speak? How do our social expectations influence speech perception? How do our social experiences, stereotypes, and attitudes mediate how we speak and how we listen? How does our knowledge of linguistic variation interact with cognitive processes like attention and memory? And how much control do we have over these phenomena? Students will gain both a theoretical understanding of research in these areas as well as practical knowledge related to formulating research questions and designing studies on sociolinguistic topics.

Fall LING1615	S01	18759	MWF	12:00-12:50(15)	(J. Benheim)

LING 1741. Information Theory in Language.

Information theory is used to study the abstract properties of communication systems. Can it improve our ability to understand

language? We will examine how the need to communicate predicts several linguistic phenomena. We will discuss information theoretic effects on multiple levels of linguistic analysis, including phonetics, phonology, and syntax. We will contrast concepts such as frequency, predictability, informativity, and functional load, and see how they can each apply to existing linguistic questions.

Fall LING1741 S01 17596 W 3:00-5:30(10) (U. Cohen Priva)

LING 1870. Linguistic Field Methods.

A lab/practicum course introducing the methodologies needed to collect, manage, and interpret primary data pertaining to the phonetic, phonological, morphosyntactic, semantic, and pragmatic properties of an understudied language. The course takes a hands-on approach, with students working in groups and individually with a native speaker consultant of an unfamiliar language. Students will learn how to test hypotheses about the language as well as construct grammatical descriptions. In addition, the course will cover a variety of practical, technological, interpersonal, cultural, and ethical issues typically encountered in fieldwork. Pre Requisite: LING 1200 or instructor permission.

Spr LING1870 S01 25882 MWF 11:00-11:50(04) (S. AnderBois)

LING 1970. Independent Research in Linguistics.

This course is to facilitate students conducting independent research on a research question or area advised by a faculty member. This includes research for honors theses, but also other independent research and reading as determined in consultation with the relevant faculty member

LING XLIST. Courses of Interest to Concentrators in Linguistics.

Fall 2024

The following courses may be of interest to students concentrating in Linguistics. While courses on the list would often count toward the Linguistics concentration, you should consult with the concentration adviser to make sure that's the case.

Anthropology

ANTH 0800 Sound and Symbols: Introduction to Linguistic Anthropology

Computer Science

CSCI 1460 Computational Linguistics

Cognitive, Linguistic & Psychological Sciences

CLPS 1820 Language and the Brain

Hispanic Studies

HISP 1210E History of Romance Languages

Language Studies

LANG 0750 Identity and Languages in Contemporary Africa

Philosophy

PHIL 0640 Logic

PHIL 1850 Philosophy of Language

Literary Arts

LITR 0100A. Introduction to Fiction.

A workshop for first year students, introducing them to the art of writing fiction. This course is reading and writing intensive. Enrollment limited to 17. S/NC required.

Fall LITR0100A S01 17244 F 3:00-5:30(11) 'To Be Arranged'

Spr LITR0100A S01 25666 F 3:00-5:30(15) 'To Be Arranged'

LITR 0100B. Introduction to Poetry.

A workshop for first year students, introducing them to the art of writing poetry. This course is reading and writing intensive. Enrollment limited to 17. S/NC required.

Fall LITR0100B S01 17245 F 3:00-5:30(11) 'To Be Arranged'

Spr LITR0100B S01 25674 F 3:00-5:30(15) 'To Be Arranged'

LITR 0110A. Fiction I.

A workshop for students who have little or no previous experience in writing fiction. Enrollment limited to 17 per section. This course is limited to undergraduates. S/NC.

Fall LITR0110A S01 17262 T 4:00-6:30(07) 'To Be Arranged'

Fall LITR0110A S02 17263 M 5:40-8:10PM 'To Be Arranged'

Fall LITR0110A S03 17264 Th 6:40-9:10PM 'To Be Arranged'

Fall LITR0110A S04 17265 F 3:00-5:30(11) 'To Be Arranged'

Spr LITR0110A S02 25668 T 4:00-6:30(16) 'To Be Arranged'

Spr LITR0110A S03 25669 W 5:40-8:10PM 'To Be Arranged'

Spr LITR0110A S04 25670 F 3:00-5:30(15) 'To Be Arranged'

LITR 0110B. Poetry I.

A workshop for students who have little or no previous experience in writing poetry. Enrollment limited to 17 per section. This course is limited to undergraduates. S/NC.

Fall LITR0110B S01 17266 W 5:40-8:10PM 'To Be Arranged'

Fall LITR0110B S02 17267 T 4:00-6:30(07) 'To Be Arranged'

Fall LITR0110B S03 17268 Th 6:40-9:10PM 'To Be Arranged'

Spr LITR0110B S01 25671 T 4:00-6:30(16) 'To Be Arranged'

Spr LITR0110B S02 25672 W 5:40-8:10PM 'To Be Arranged'

Spr LITR0110B S03 25673 F 3:00-5:30(15) 'To Be Arranged'

LITR 0110E. Screenwriting I.

Screenwriting I introduces the fundamentals of short-form screenwriting through viewings, readings, exercises and assignments. Areas of particular focus include the short as a fully developed and distinctive work of art; visual storytelling, pacing and flow; effective screenwriting techniques, optimizing every word; articulating your personal voice and vision; creating structures that best suit your content and intentions. In class, we will review your writing, lookbooks and group presentations; view and discuss short films; discuss readings; and do writing exercises. Assigned readings include theory, essays, treatments and screenplays. Films will also be assigned for viewing outside of class. This course is limited to undergraduates. S/NC. Enrollment limited to 17.

Spr LITR0110E S01 25664 M 3:00-5:30(13) (L. Colella)

LITR 0110H. Digital & Cross-Disciplinary Language Arts 1.

Project-oriented workshop for writers and language artists who want to integrate practices from other disciplines as they devise, compose, and make their work. Those with little or no prior interdisciplinary or digital media experience are welcome. Learning is through making, reading, discussion, group projects, collaboration, and research presentations. Enrollment limited to 17. S/NC.

Fall LITR0110H S01 17269 W 5:40-8:10PM 'To Be Arranged'

Fall LITR0110H S02 19123 T 4:00-6:30(07) 'To Be Arranged'

Spr LITR0110H S01 25768 T 4:00-6:30(16) 'To Be Arranged'

LITR 0210A. Fiction Writing II.

Topics often include stylistic matters related to tone and point of view, and structural matters like controlling switches in time. See general course description above for course entry procedures for all intermediate workshops. Enrollment limited to 17. Instructor permission required. S/NC.

Fall LITR0210A S01 17250 T 4:00-6:30(07) (L. Akinsiku)

Spr LITR0210A S01 25660 W 3:00-5:30(10) (L. Ives)

LITR 0210B. Poetry Writing II.

Emphasis is placed on verse strategies, meter, rhythm, imagery and rhyme. Writing includes frequent exercises in various poetic traditions. See general course description above for course entry procedures for all intermediate workshops. Written permission required. S/NC.

Fall LITR0210B S01 17256 W 3:00-5:30(10) (C. Ebeid)

LITR 0310O. Narrative Nonfiction.

This is a class in crafting engrossing and essential stories. True stories need to be told, and deserve to be told well. What's the difference between story and subject? How can narrative and careful structuring maximize the impact of investigative reporting? How do you properly pace a longform story? How do you pitch, report, outline, and edit one? And, most importantly, why do you write it in the first place? Class meetings will include a magazine-style editorial meeting, discussing weekly pitches and, later, story drafts followed by a discussion of reading that explores various approaches to structure, voice, and genre.

Fall LITR0310O S01 17261 Th 11:55-2:25 (F. Mari)

LITR 0710. Writers on Writing Seminar.

Offers students an introduction to the study of literature (including works from more than one genre) with special attention given to a writer's way of reading. This course will include visits to the course by contemporary writers who will read to the class and talk about their work. Enrollment limited to 19 first year students.

Fall LITR0710 S01 17254 Th 4:00-6:30(04) (M. Shenoda)

Spr LITR0710 S01 25659 Th 4:00-6:30(17) (J. Townsend)

LITR 1010A. Advanced Fiction.

The writing of short stories or longer works in progress in regular installments, along with appropriate exercises and reading assignments. See general course description above for course entry procedures for all advanced workshops. Written permission required. S/NC.

Fall	LITR1010A	S01	17249	W	3:00-5:30(10)	(L. Ives)
Spr	LITR1010A	S01	25661	T	4:00-6:30(16)	(L. Akinsiku)

LITR 1010B. Advanced Poetry.

Course work includes a body of exercises, close reading of poetry, workshop conversations and conferences. See general course description above for course entry procedures for all advanced workshops. Instructor permission required. S/NC.

Fall	LITR1010B	S01	17520	W	3:00-5:30(10)	(E. Sikelianos)
Spr	LITR1010B	S01	25662	M	3:00-5:30(13)	(P. Nelson)

LITR 1010E. Advanced Screenwriting.

Screenwriting for feature-length and episodic works. Participants should already have experience writing short screenplays and be prepared to develop a longer piece. See the Literary Arts Department website for course entry procedures for all advanced workshops. Work sample and instructor permission required. S/NC.

Fall	LITR1010E	S01	17260	M	3:00-5:30(03)	(L. Colella)

LITR 1010H. Advanced Digital & Cross-Disciplinary Language Arts.

Project-oriented workshop for writers and language artists working to integrate practices from other disciplines as they devise, compose, and make their work. Recommended for students with some prior interdisciplinary practice or digital media experience. Learning is through making, reading, discussion, group projects, collaboration, and research presentations. Enrollment limited to 12. S/NC.

Fall	LITR1010H	S01	17257	W	3:00-5:30(10)	(J. Cayley)

LITR 1011F. Literary Translation Workshop (COLT 1710C).

Interested students must register for COLT 1710C.

Fall	LITR1011F	S01	18661	Arranged		'To Be Arranged'

LITR 1110N. Workshop for Potential Literature.

A novel without the letter "E", 100,000-billion sonnets by permutation and texts that take the shape of a Mobius-Strip-- all this time and more, as workshop participants try their hands in writing in response to problems created by and inspired by a group of writers engaged in strange constraints and procedures. Instructor permission required. S/NC.

Fall	LITR1110N	S01	17253	M	3:00-5:30(03)	(P. Nelson)

LITR 1110U. Script to Screen: Fundamentals of Filmmaking.

This intensive production course is designed for students who have some proficiency in screenwriting or poetry and little to no filmmaking experience. The course aims to serve as a two-way bridge, opening screenwriting and poetry students up to the possibility of making films, while also investigating how production experiences can inform future writing projects. We will experiment with a variety of filmmaking techniques and tools to investigate the symbiotic relationships between writing and visual language. The equal importance of sound in the film viewing experience will also be explored, with students learning techniques for recording and editing multitrack soundtracks. Guest filmmakers will join us and respond to student work.

Fall	LITR1110U	S01	17259	M	10:30-12:50	(L. Colella)

LITR 1110V. Script to Screen: Scene Work.

This intensive script development and directing workshop is designed for students who have some proficiency in screenwriting, and little to no directing experience. Basic shooting and editing skills are helpful, or will be learned in the first half of the semester. The course aims to serve as a two-way bridge, opening screenwriting students up to the possibility of directing their work, while also investigating how acting and directing experiences, and workshoping material with actors, can inform future screenwriting. Activities include learning acting and directing techniques, scene analysis, writing and revising scenes, casting and working with actors, creating a scene through improvisation, and filming practice versions of scenes. Guests will join us for workshops and final reviews.

Spr	LITR1110V	S01	25665	M	10:30-12:50	(L. Colella)

LITR 1151I. Remaster + Remix.

This workshop/seminar will use the intuition, logic and esthetics of popular music forms such as punk, house, dub step, reggae and blues to delve into the complex connections between a selection of classic novels and versions of these novels retold. What tensions get reset when writers on an empire's margin write back? What assumptions get shifted when women refocus a novel's concerns? What are the possibilities and dangers in reconstructing classics while trying to mash them up? And why are we breathless when a stylist riffs? French Antillean notions of creolité will offer guidance. Main guide—the books.

Spr	LITR1151I	S01	25676	W	3:00-5:30(10)	(C. Channer)

LITR 1151Q. Great Adventure.

This hybrid seminar/prose workshop will take you to Antarctica, Japan, France, Cambodia, outer space—and to other places too. But much of your writing will be about yourself. Your cross-genre wandering through novels, essays, and indefinable hybrid works by a fascinating list of thinkers and stylists, will lead to questions about your own sense of place, belonging, contextual otherness, and the pleasures, powers and implications of your gaze. You'll search for answers through the medium of your own creative work—lyric essays, fictional vignettes, pictures.

Fall	LITR1151Q	S01	17272	W	3:00-5:30(10)	(C. Channer)

LITR 1151X. Interdisciplinary Arts Workshop: Translation of Concept.

Art-making is an act of translation – a thought, process, question, object, declaration, desire, system, or intention is filtered through the artist and subsequently finds new existence in the form of art. This project-centered workshop is a cross-genre exploration of that filter, where participants working in differing genres will be asked to engage a wide range of materials to "translate" into their art-making process. Please be prepared to write, dance, sing, mix, draw, ask, reach, and fail, in and out of your comfort zone. Individual and collaborative work expected. For writers, dancers, architects, musicians, painters, digital artists, "non-artists." Written permission required.

Spr	LITR1151X	S01	25696	T	11:55-2:25	(S. Nakayasu)

LITR 1152T. Memory's Imagination.

Taking inspiration from the autobiographical work of newly minted Nobel Laureate, Annie Ernaux, we will examine and produce works of fiction, creative narrative non-fiction and hybrid texts that cleave, in that good old double-sense, to personal experience and/or personal passions. Works by Marcel Proust, Virginia Woolf, James Baldwin, Michael Ondaatje, John Keene, Jessica Au and Svetlana Alexievich will be on the menu to inform and inspire. Students can expect a substantial weekly reading load and should come to each class prepared to discuss the assigned texts and linked creative assignments.

Fall	LITR1152T	S01	17288	W	3:00-5:30(10)	(L. Hunt)

LITR 1153A. The Illiberal Imagination: Fictions of Disinformation, Conspiracy, and Control.

What do an artist and a politician have in common? One person might say that they both make things up. Another might claim that both aim to tell truths that unite audiences. Bearing this genre-related ambiguity in mind, this course will explore the description of illiberal and anti-progressive political ideals and systems—particularly, although not exclusively, in narrative fiction. This class is therefore also about the strategies politicians, novelists, and others use to shape our sense of what is real and to argue for particular accounts of what is valuable, just, and possible, as well as how human life should be led. We will consider the work of Margaret Atwood, Octavia Butler, Philip K. Dick, Bret Easton Ellis, Colleen Hoover, R.F. Kuang, George Orwell, Thomas Pynchon, Ayn Rand, and the Marquis de Sade, among others, attending to the ways in

Fall	LITR1153A	S01	18640	T	4:00-6:30(07)	(L. Ives)

LITR 1200. Writers on Writing.

Offers students an introduction to the study of literature (including works from more than one genre) with special attention given to a writer's way of reading. This course will include visits to the course by contemporary writers, who will read to the class and talk about their work. Enrollment is limited to 30 students.

Fall	LITR1200	S01	17255	Th	4:00-6:30(04)	(K. Mahajan)
Spr	LITR1200	S01	25663	Th	4:00-6:30(17)	(C. Ebeid)

LITR 1230Y. Structuring (and De-Structuring) Novels: Special Topics Literature Seminar.

How to structure a novel? This is a question most novelists approach with dread, because, a) all the good plots and structures have been used up; b) plots can feel annoying anyway, like a capitulation to cinema or theater; and c) nevertheless, it is impossible to write in total darkness. We'll dispel this darkness by reading works by a range of novelists. How do these authors strike a balance between complex thought and elegant/unusual structure? And how can we, as writers, maintain narrative coherence over the course of hundreds of pages?

Fall LITR1230Y S01 17519 W 3:00-5:30(10) (K. Mahajan)

LITR 1231E. Rereading Writing.

We will study writing and, more generally, language art in terms of reading, both reexamining theories and practices of writing — in linguistics, the philosophy of language, and in the actual making of literature — and also by proposing that reading is constitutive of language regardless of its medium. What is reading, historically, theoretically, and in the digitally mediated future of culture? If reading brings language into being, then how should we read and what should we compose to be read? Readings from Saussure and Ong to Hayles, Derrida, and beyond. Optional critical-creative project.

Fall LITR1231E S01 17258 M 3:00-5:30(03) (J. Cayley)

LITR 1231J. Histories.

Historical figures like Herodotus, Hannibal, Billy the Kid and Calamity Jane have all served as energy nodes around which writers have built significant works of prose. In this seminar we will examine texts like Michael Ondaatje's *Coming Through Slaughter*, Toni Morrison's *Beloved* and W.G. Sebald's *The Emigrants* as part of an exploration of that prose which, if we can kick awake that poor overworked pearl, posits the historical as its grain of sand. Students can expect a substantial weekly reading load of primary and secondary source material and should come to each class prepared to discuss the assigned texts.

Fall LITR1231J S01 17287 M 3:00-5:30(03) (L. Hunt)

LITR 1300. Independent Study in Reading, Research, and Writing About Literature.

Provides advanced students with an opportunity to pursue tutorial instruction oriented toward a literary research topic.

LITR 1310. Independent Study in Creative Writing.

Offers tutorial instruction oriented toward some significant work in progress by the student. Typically taken by honors or capstone candidates in the antepenultimate or penultimate semester. See instructor to seek permission during the semester before undertaking the course of study. One advanced-level workshop is prerequisite. S/NC.

LITR 1510. Honors Independent Study in Creative Writing.

Provides tutorial instruction for students completing their theses or capstone projects. Typically taken by honors or capstone candidates in their final semester. See instructor to seek permission during the semester before undertaking the course of study. S/NC.

LITR 2010A. Graduate Fiction.

Advanced practice of the art: a writing seminar, limited to graduate students in Literary Arts. Emphasis is placed on developing a better understanding of the creative process, strategies and forms. Written permission required. S/NC.

Fall LITR2010A S01 17246 W 11:55-2:25 (J. Townsend)

Spr LITR2010A S01 25657 W 11:55-2:25 (K. Mahajan)

LITR 2010B. Graduate Poetry.

Advanced practice of the art: a writing seminar, limited to graduate students in Literary Arts. Emphasis is placed on developing a better understanding of the creative process, strategies and forms. Written permission required. S/NC.

Fall LITR2010B S01 17247 M 11:55-2:25 (E. Sikelianos)

Spr LITR2010B S01 25658 M 11:55-2:25 (S. Nakayasu)

LITR 2230. Graduate Independent Study in Reading, Research, and Writing About Literature.

Provides graduate students with an opportunity to pursue tutorial instruction oriented toward a literary research topic.

LITR 2310. Graduate Independent Studies in Literary Writing.

Offers tutorial instruction oriented toward some significant work in progress by the graduate student. S/NC.

LITR 2402C. Reading the Large Language Models: Artificial Intelligence, Language, and Literary Art (HMAN 2402C)..

Interested students must register for HMAN 2402C

Spr LITR2402C S01 26414 Arranged

'To Be Arranged'

LITR 2410. Graduate Thesis Independent Study in Literary Writing.

Provides tutorial instruction for graduate students completing their graduate creative theses. Typically taken in the final semester. See instructor to seek permission during the semester before undertaking the course of study. S/NC.

LITR 2450. Exchange Scholar Program.**LITR 2700. Pedagogy Seminar.**

The Pedagogy Seminar examines ideas about teaching in a literary arts/creative writing environment. The pros and cons of the "workshop"-style will be discussed alongside alternative models, and general topics of exploration will include: creative process pedagogy, writing-to-learn, multi-genre approaches, uses of readings/research, and general classroom management. Designing an inclusive classroom and syllabus as well as exploring generative and innovative practices will be covered as well. A special emphasis will be on preparing students to feel confident and to explore a range of creative process issues. Personal writing as well as syllabus design will be expected.

Spr LITR2700 S01 25655 Th 11:55-2:25 (C. Channer)

LITR 2710. Literary Arts Pedagogy in Practice.

The Pedagogy in Practice Seminar examines ideas about teaching in a literary arts/creative writing environment. The pros and cons of the "workshop"-style will be discussed alongside alternative models, and general topics of exploration will include: creative process pedagogy, writing-to-learn, multi-genre approaches, uses of readings/research, and general classroom management. This is a hands-on forum to provide guidance on how to build an inclusive, pedagogically effective meeting space. A special emphasis will be on preparing instructors to feel confident and explore a range of creative process issues. There will be opportunities to develop personal writing, especially in response to student work.

Fall LITR2710 S01 17248 Th 11:55-2:25 (C. Channer)

LITR 2780. Graduate Independent Study in Professional Development.

This half-credit course is for a Literary Arts graduate student not enrolled in a pedagogy seminar. Through this independent study, the graduate student will work with a faculty advisor to prepare for the post-MFA experience. This may include a focus on aspects of teaching, but may also focus on related professional pursuits, such as working in literary agency, publishing and professional writing.

Mathematics**MATH 0050. Analytic Geometry and Calculus.**

MATH 0050 and 0060 provide a slower-paced introduction to calculus for students who require additional preparation. Presents the same calculus topics as MATH 0090, together with a review of the necessary precalculus topics. Students successfully completing this sequence are prepared for MATH 0100. S/NC only.

Fall MATH0050 S01 10139 TTh 10:30-11:50(13) 'To Be Arranged'

MATH 0060. Analytic Geometry and Calculus.

A slower-paced introduction to calculus for students who require additional preparation. Presents the same calculus topics as MATH 0090, together with a review of the necessary precalculus topics. Students successfully completing this sequence are prepared for MATH 0100. Prerequisite: MATH 0050 or written permission. May not be taken for credit in addition to MATH 0070 or MATH 0090. S/NC only.

Spr MATH0060 S01 20112 MWF 9:00-9:50(02) 'To Be Arranged'

MATH 0081. Math Teaching Fellows Program.

The Math Teaching Fellows Program is a semester-long certificate program that provides UTAs with the skills and knowledge required to be an effective UTA in the Math Department. Admission into the program is by application only; participants will hold a UTA appointment in a Mathematics

course approved by the Teaching Fellows Coordinators and must therefore be eligible for student employment at Brown during the term. Participants should have completed at least one of Math 0100, 0180, 0190, 0200, 0350, 0520, 0540.

Fall	MATH0081	S01	18918	Arranged	(J. Kostiuk)

MATH 0090. Single Variable Calculus, Part I.

An intensive course in calculus of one variable including limits, differentiation, maxima and minima, the chain rule, rational functions, trigonometric functions, and exponential functions. Introduction to integration with applications to area and volumes of revolution. MATH 0090 and MATH 0100 or the equivalent are recommended for all students intending to concentrate in the sciences or mathematics. May not be taken for credit in addition to MATH 0060 or MATH 0070. S/NC only.

Fall	MATH0090	S01	10140	MWF	9:00-9:50(09)	'To Be Arranged'
Fall	MATH0090	S02	10141	MWF	10:00-10:50(14)	(D. Katz)
Fall	MATH0090	S03	10142	MWF	11:00-11:50(16)	(P. Zenz)
Fall	MATH0090	S04	10143	MWF	12:00-12:50(15)	'To Be Arranged'
Fall	MATH0090	S05	10144	TTh	9:00-10:20(05)	'To Be Arranged'
Spr	MATH0090	S01	20113	MWF	11:00-11:50(04)	(D. Katz)
Spr	MATH0090	S02	20114	TTh	9:00-10:20(05)	'To Be Arranged'

MATH 0100. Single Variable Calculus, Part II.

A continuation of the material of MATH 90 including further development of techniques of integration. Other topics covered are infinite series, power series, Taylor's formula, polar coordinates, parametric equations, introduction to differential equations, and numerical methods. MATH 90 and 100 or the equivalent are recommended for all students intending to concentrate in mathematics or the sciences. MATH 100 may not be taken in addition to MATH 170 or MATH 190.

Fall	MATH0100	S01	10145	Arranged	(Y. Hsu)	
Spr	MATH0100	S01	20115	MWF	10:00-10:50(03)	(D. Katz)
Spr	MATH0100	S02	20116	TTh	2:30-3:50(11)	'To Be Arranged'
Spr	MATH0100	S03	20117	MWF	9:00-9:50(02)	'To Be Arranged'
Spr	MATH0100	S04	20118	MWF	12:00-12:50(01)	'To Be Arranged'

MATH 0180. Multivariable Calculus.

Three-dimensional analytic geometry. Differential and integral calculus of functions of two or three variables: partial derivatives, multiple integrals, Green's Theorem, Stokes' theorem, and the divergence theorem. Prerequisite: MATH 100, MATH 170, or MATH 190, or advanced placement or written permission. [MATH 180 may not be taken in addition to MATH 200 or MATH 350.]

Fall	MATH0180	S01	10146	MWF	11:00-11:50(16)	(C. Daly)
Fall	MATH0180	S02	10147	MWF	12:00-12:50(15)	'To Be Arranged'
Fall	MATH0180	S03	10148	TTh	9:00-10:20(05)	'To Be Arranged'
Spr	MATH0180	S01	20119	TTh	1:00-2:20(08)	(B. Vergara Biggio)
Spr	MATH0180	S02	20120	TTh	10:30-11:50(09)	'To Be Arranged'
Spr	MATH0180	S03	20121	MWF	12:00-12:50(01)	'To Be Arranged'

MATH 0190. Single Variable Calculus, Part II (Physics/Engineering).

This course, which covers roughly the same material and has the same prerequisites as MATH 100, is intended for students with a special interest in physics or engineering. The main topics are: applications and techniques of integration; sequences, series, and power series methods; parametric equations and polar coordinates; additional topics at instructor's discretion. MATH 190 may not be taken in addition to MATH 100 or MATH 170.

Fall	MATH0190	S01	10149	MWF	9:00-9:50(09)	(J. Kostiuk)
Fall	MATH0190	S02	10150	TTh	2:30-3:50(12)	(N. Wagner)

MATH 0200. Multivariable Calculus (Physics/Engineering).

This course, which covers roughly the same material as MATH 180, is intended for students with a special interest in physics or engineering. The main topics are: geometry of three-dimensional space; partial derivatives; Lagrange multipliers; double, surface, and triple integrals; vector analysis; Stokes' theorem and the divergence theorem, with applications to electrostatics and fluid flow. Prerequisite: MATH 100, MATH 170, or MATH 190, or advanced placement or written permission. [MATH 200 may not be taken in addition to MATH 180 or MATH 350.]

Fall	MATH0200	S01	10151	MWF	2:00-2:50(01)	(C. Daly)
Fall	MATH0200	S02	10152	MWF	12:00-12:50(15)	'To Be Arranged'

Fall	MATH0200	S03	10153	TTh	1:00-2:20(06)	'To Be Arranged'
Spr	MATH0200	S01	20122	MWF	12:00-12:50(01)	'To Be Arranged'
Spr	MATH0200	S02	20123	TTh	10:30-11:50(09)	(J. Gomez Serrano)
Spr	MATH0200	S03	20124	TTh	2:30-3:50(11)	(J. Gomez Serrano)

MATH 0350. Multivariable Calculus With Theory.

This course provides a rigorous treatment of multivariable calculus. Topics covered include vector analysis, partial differentiation, multiple integration, line integrals, Green's theorem, Stokes' theorem, and the divergence theorem. MATH 0350 covers the same material as MATH 0180, but with more emphasis on theory and on understanding proofs. Prerequisites: MATH 0100, MATH 0170, or MATH 0190, or advanced placement or written permission. [MATH 0350 may not be taken in addition to MATH 0180 or MATH 0200.]

Fall	MATH0350	S01	10154	MWF	1:00-1:50(08)	(B. Dees)

MATH 0420. Introduction to Number Theory.

An overview of one of the most beautiful areas of mathematics. Ideal for any student who wants a taste of mathematics outside of, or in addition to, the calculus sequence. Topics include: prime numbers, congruences, quadratic reciprocity, sums of squares, Diophantine equations, and, as time permits, such topics as cryptography and continued fractions. No prerequisites.

Fall	MATH0420	S01	18731	MWF	9:00-9:50(09)	(Z. Wei)

MATH 0520. Linear Algebra.

A first course in linear algebra designed to develop students' problem solving skills, mathematical writing skills, and gain facility with the applications and theory of linear algebra. Topics will include: vector spaces, linear transformations, matrices, systems of linear equations, bases, eigenvalues, and additional topics at instructor's discretion. Applications may include differential equations, difference equations, least squares approximations, and models in economics and in biological and physical sciences. MATH 0520 or MATH 0540 is a prerequisite for all 1000-level courses in Mathematics except MATH 1260 or MATH 1610. Recommended prerequisite: MATH 0100 or equivalent. May not be taken in addition to MATH 0540.

Fall	MATH0520	S01	10155	MWF	11:00-11:50(16)	(J. Kostiuk)
Fall	MATH0520	S02	10156	MWF	10:00-10:50(14)	(J. Kostiuk)
Fall	MATH0520	S03	10157	MWF	12:00-12:50(15)	(J. Kostiuk)
Fall	MATH0520	S04	10158	TTh	9:00-10:20(05)	(J. Kostiuk)
Fall	MATH0520	S05	10159	TTh	10:30-11:50(13)	(J. Kostiuk)
Fall	MATH0520	S06	17334	TTh	1:00-2:20(06)	(J. Kostiuk)
Fall	MATH0520	S07	17335	MWF	1:00-1:50(08)	(J. Kostiuk)
Spr	MATH0520	S01	20126	MWF	9:00-9:50(02)	(J. Kostiuk)
Spr	MATH0520	S02	20127	MWF	10:00-10:50(03)	(J. Kostiuk)
Spr	MATH0520	S03	20128	MWF	12:00-12:50(01)	(J. Kostiuk)
Spr	MATH0520	S04	20129	MWF	1:00-1:50(06)	(J. Kostiuk)
Spr	MATH0520	S05	20130	MWF	2:00-2:50(07)	(J. Kostiuk)
Spr	MATH0520	S06	20131	TTh	9:00-10:20(05)	(J. Kostiuk)
Spr	MATH0520	S07	20132	TTh	10:30-11:50(09)	(J. Kostiuk)

MATH 0540. Linear Algebra With Theory.

This course provides a rigorous introduction to the theory of linear algebra. Topics covered include: matrices, linear equations, determinants, and eigenvalues; vector spaces and linear transformations; inner products; Hermitian, orthogonal, and unitary matrices; and Jordan normal form. MATH 540 provides a more theoretical treatment of the topics in MATH 520, and students will have opportunities during the course to develop proof-writing skills. Recommended prerequisite: MATH 100, MATH 170, or MATH 190. [MATH 540 may not be taken in addition to MATH 520.]

Fall	MATH0540	S01	10160	MWF	9:00-9:50(09)	(P. Zenz)
Fall	MATH0540	S02	17336	TTh	2:30-3:50(12)	(S. Hashimoto)
Spr	MATH0540	S01	20133	MWF	10:00-10:50(03)	(I. Vogt)

MATH 0750. Introduction to Higher Mathematics.

This semester-long class will expose students to several fundamental areas of mathematics. It will be team taught by three members of the faculty. Topics, which will vary from year to year, will be chosen from logic and set theory, number theory, abstract algebra, combinatorics and graph theory, analysis, and geometry. Approximately 4 weeks will be devoted to each of the selected topics.

Fall MATH0750 S01 10161 TTh 2:30-3:50(12) (J. Pipher)

MATH 1000. The Art of Writing Mathematics.

Math 1001 is an introduction to proof-writing designed to prepare students for further exploration of rigorous mathematics. Students will be trained to identify and employ a variety of proof-techniques such as direct proof, proof by contradiction, proof by induction, and proof by cases, to name a few. Mathematical topics covered include samplings of set theory, logic, and number theory, with additional topics chosen at the instructors discretion if time permits. Recommended Prerequisites: MATH 0520, MATH 0540, MATH 0100, MATH 0190, MATH 0180, MATH 0200, or MATH 0350. Students with little proof writing experience are encouraged to take MATH 1001 prior to taking, or concurrently with, other 1000-level Mathematics courses.

Spr MATH1000 S01 26198 MWF 11:00-11:50(04) (J. Kostiuk)

MATH 1010. Analysis: Functions of One Variable.

Completeness properties of the real number system, topology of the real line. Proof of basic theorems in calculus, infinite series. Topics selected from ordinary differential equations. Fourier series, Gamma functions, and the topology of Euclidean plane and 3-space. Prerequisite: MATH 0180, 0200, or 0350. MATH 0520 or 0540 may be taken concurrently. Most students are advised to take MATH 1010 before MATH 1630.

Spr MATH1010 S01 25774 MWF 11:00-11:50(04) (B. Dees)

Spr MATH1010 S02 26580 MWF 10:00-10:50(03) 'To Be Arranged'

MATH 1030. Graph Theory.

This course covers important material about graph theory, such as spanning trees, network flow problems, matching problems, coloring problems, planarity, Cayley graphs, spectral theory on graphs, and Ramsey Theory. The emphasis will be on a combination of theory and algorithms. Depending on the instructor, connections to such fields as combinatorics, geometry, or computer science might be emphasized. Prerequisite: MATH 0180, 0200 or 0350 and MATH 0520 or 0540 are recommended.

Spr MATH1030 S01 26199 TTh 1:00-2:20(08) (J. Jung)

MATH 1040. Fundamental Problems of Geometry.

This class discusses geometry from a modern perspective. Topics include hyperbolic, projective, conformal, and affine geometry, and various theorems and structures built out of them. Prerequisite: MA 0520, MA 0540, or permission of the instructor.

Spr MATH1040 S01 20135 TTh 2:30-3:50(11) (J. Kahn)

MATH 1060. Differential Geometry.

The study of curves and surfaces in 2- and 3-dimensional Euclidean space using the techniques of differential and integral calculus and linear algebra. Topics include curvature and torsion of curves, Frenet-Serret frames, global properties of closed curves, intrinsic and extrinsic properties of surfaces, Gaussian curvature and mean curvature, geodesics, minimal surfaces, and the Gauss-Bonnet theorem.

Fall MATH1060 S01 10162 MWF 10:00-10:50(14) (C. Breiner)

MATH 1080. Cryptography.

This course focuses on the mathematics underlying public key cryptosystems, digital signatures, and other topics in cryptography. A sampling of mathematical topics, such as groups, rings, fields, number theory, probability, complexity theory, elliptic curves, and lattices, will be introduced and applied to cryptography. No prior knowledge of these topics is assumed, nor is prior programming experience needed; any programming knowledge required will be covered in class.

Spr MATH1080 S01 26200 MWF 9:00-9:50(02) (P. Zenz)

MATH 1110. Ordinary Differential Equations.

Ordinary differential equations, including existence and uniqueness theorems and the theory of linear systems. Topics may also include stability theory, the study of singularities, and boundary value problems.

Fall MATH1110 S01 10163 MWF 11:00-11:50(16) (B. Vergara Biggio)

MATH 1120. Partial Differential Equations.

The wave equation, the heat equation, Laplace's equation, and other classical equations of mathematical physics and their generalizations, discussion of well-posedness problems. The method of characteristics, initial and boundary conditions, separation of variables, solutions in series

of eigenfunctions, Fourier series, maximum principles, Green's identities and Green's functions.

Spr MATH1120 S01 20136 MWF 2:00-2:50(07) 'To Be Arranged'

MATH 1210. Probability.

Basic probability theory including random variables, distribution functions, independence, expectation, variance, and conditional expectation. Classical examples of probability density and mass functions (binomial, geometric, normal, exponential) and their applications. Stochastic processes including discrete and continuous time Poisson processes, Markov chains, and Brownian motion.

Fall MATH1210 S01 17664 MWF 2:00-2:50(01) (B. Vergara Biggio)

MATH 1460. Complex Analysis.

Examines one of the cornerstones of mathematics. Complex differentiability, Cauchy-Riemann differential equations, contour integration, residue calculus, harmonic functions, geometric properties of complex mappings. Prerequisite: MATH 0180, 0200, or 0350. This course does not require MATH 0520 or 0540.

Fall MATH1460 S01 17663 MWF 2:00-2:50(01) 'To Be Arranged'

MATH 1530. Abstract Algebra.

A proof-based course that introduces the principles and concepts of modern abstract algebra. Topics will include groups, rings, and fields, with applications to number theory, the theory of equations, and geometry. Previous proof-writing experience is not required. MATH 1530 is required of all students concentrating in mathematics. It is strongly suggested that potential mathematics concentrators make MATH 1530 one of the first thousand level mathematics classes that they take.

Fall MATH1530 S01 10167 TTh 10:30-11:50(13) (S. Hashimoto)

Fall MATH1530 S02 17337 TTh 1:00-2:20(06) (J. Jung)

Spr MATH1530 S01 20139 MWF 1:00-1:50(06) (S. Hashimoto)

MATH 1540. Topics in Abstract Algebra.

Galois theory together with selected topics in algebra. Examples of subjects which have been presented in the past include algebraic curves, group representations, and the advanced theory of equations. Prerequisite: MATH 1530.

Fall MATH1540 S01 17338 TTh 10:30-11:50(13) (J. Silverman)

MATH 1560. Number Theory.

Selected topics in number theory will be investigated. Unique factorization, prime numbers, modular arithmetic, arithmetic functions, quadratic reciprocity, finite fields, and related topics. Prerequisite: MATH 1530 or written permission.

Spr MATH1560 S01 26649 MWF 2:00-2:50(07) (Z. Wei)

MATH 1630. Real Analysis I.

A rigorous introduction to real analysis, this course treats topics in point set topology, function spaces, differentiability of functions on Euclidean spaces, and Fourier series. Among the many topics and theorems we investigate in detail will be connectedness and compactness, the Arzela-Ascoli theorem, the inverse and implicit function theorems, and L^2 and pointwise convergence of Fourier series. It is recommended that a student take MATH 1010 before attempting MATH 1630.

Fall MATH1630 S01 17662 MWF 1:00-1:50(08) (J. Holmer)

MATH 1640. Real Analysis II.

A second course in real analysis, in this class we study measure theory and integration as well as Hilbert spaces. Among the many topics we study will be abstract measure and integration theory, Fourier transform, linear functionals and the Riesz representation theorem, compact operators, and the spectral theorem. The course may also include additional material of interest to the students and instructor.

Spr MATH1640 S01 26120 TTh 10:30-11:50(09) (N. Kapouleas)

MATH 1710. Topology.

Topology of Euclidean spaces, winding number and applications, knot theory, fundamental group and covering spaces. Euler characteristic, simplicial complexes, classification of two-dimensional manifolds, vector fields, the Poincaré-Hopf theorem, and introduction to three-dimensional topology. Prerequisites: MATH 0520 or MATH 0540, or instructor permission.

Spr MATH1710 S01 26206 TTh 1:00-2:20(08) (C. Daly)

MATH 1970. Honors Conference.

Collateral reading, individual conferences. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

MATH 2010. Differential Geometry.

Introduction to differential geometry (differentiable manifolds, differential forms, tensor fields, homogeneous spaces, fiber bundles, connections, and Riemannian geometry), followed by selected topics in the field.

Pre-reqs: MATH 2110 and undergraduates require permission from the instructor.

Spr	MATH2010	S01	20143	TTh	2:30-3:50(11)	(N. Kapouleas)

MATH 2050. Algebraic Geometry.

Complex manifolds and algebraic varieties, sheaves and cohomology, vector bundles, Hodge theory, Kähler manifolds, vanishing theorems, the Kodaira embedding theorem, the Riemann-Roch theorem, and introduction to deformation theory. Pre-reqs: MATH 2510 and MATH 2520 and undergraduates require permission from the instructor.

Spr	MATH2050	S01	25776	MWF	1:00-1:50(06)	(E. Larson)

MATH 2110. Introduction to Manifolds.

Inverse Function Theorem, manifolds and submanifolds, tangent and cotangent bundles, transversality, flows and vector fields, Frobenius Theorem, vector bundles, tensors and differential forms, Sard's Theorem, introduction to Lie groups. Pre-reqs: MATH 1060, MATH 1140 and preferably MATH 1410 and undergraduates require permission from the instructor.

Fall	MATH2110	S01	10171	TTh	2:30-3:50(12)	(J. Kahn)

MATH 2250. Complex Function Theory.

Introduction to the theory of analytic functions of one complex variable. Content varies somewhat from year to year, but always includes the study of power series, complex line integrals, analytic continuation, conformal mapping, and an introduction to Riemann surfaces.

Fall	MATH2250	S01	10182	MWF	11:00-11:50(16)	(S. Treil)

MATH 2260. Complex Function Theory.

See Complex Function Theory (MATH 2250) for course description.

Spr	MATH2260	S01	20146	MWF	1:00-1:50(06)	(S. Treil)

MATH 2370. Partial Differential Equations.

The theory of the classical partial differential equations; the method of characteristics and general first order theory. The Fourier transform, the theory of distributions, Sobolev spaces, and techniques of harmonic and functional analysis. More general linear and nonlinear elliptic, hyperbolic, and parabolic equations and properties of their solutions, with examples drawn from physics, differential geometry, and the applied sciences. Semester II concentrates on special topics chosen by the instructor.

Fall	MATH2370	S02	10179	MWF	1:00-1:50(08)	(B. Pausader)

MATH 2380. Partial Differential Equations.

The theory of the classical partial differential equations; the method of characteristics and general first order theory. The Fourier transform, the theory of distributions, Sobolev spaces, and techniques of harmonic and functional analysis. More general linear and nonlinear elliptic, hyperbolic, and parabolic equations and properties of their solutions, with examples drawn from physics, differential geometry, and the applied sciences. Semester II of this course concentrates on special topics chosen by the instructor.

Spr	MATH2380	S01	20151	MWF	2:00-2:50(07)	(J. Holmer)

MATH 2410. Topology.

An introduction to algebraic topology. Topics include fundamental group, covering spaces, simplicial and singular homology, CW complexes, and an introduction to cohomology. Pre-reqs: MATH 1410, MATH 1530, and MATH 1010 and/or MATH 1130 and undergraduates require permission from the instructor.

Fall	MATH2410	S01	10174	TTh	1:00-2:20(06)	(T. Goodwillie)

MATH 2420. Algebraic Topology.

This is a continuation of MATH 2410. Topics include cohomology, cup products, Poincaré duality, and other topics chosen by the instructor.

Spr	MATH2420	S01	20147	TTh	9:00-10:20(05)	(B. Tshishiku)

MATH 2450. Exchange Scholar Program.

Fall	MATH2450	S01	16594	Arranged		'To Be Arranged'

MATH 2510. Algebra.

Basic properties of groups, rings, fields, and modules. Topics include: finite groups, representations of groups, rings with minimum condition, Galois theory, local rings, algebraic number theory, classical ideal theory, basic homological algebra, and elementary algebraic geometry. Pre-reqs: MATH 1530 and MATH 1540 and undergraduates require permission from the instructor.

Fall	MATH2510	S01	10175	MWF	10:00-10:50(14)	(M. Chan)

MATH 2520. Algebra.

See Algebra (MATH 2510) for course description. Pre-reqs: MATH 2510 and undergraduates require permission from the instructor.

Spr	MATH2520	S01	20148	MWF	10:00-10:50(03)	(M. Chan)

MATH 2530. Number Theory.

Introduction to algebraic and analytic number theory. Topics covered during the first semester include number fields, rings of integers, primes and ramification theory, completions, adeles and ideles, and zeta functions. Content of the second semester varies from year to year; possible topics include class field theory, arithmetic geometry, analytic number theory, and arithmetic K-theory. Pre-reqs: MATH 2510 and undergraduates require permission from the instructor.

Fall	MATH2530	S01	10176	TTh	9:00-10:20(05)	(I. Vogt)

MATH 2540. Number Theory.

See Number Theory (MATH 2530) for course description.

Spr	MATH2540	S01	20149	MWF	11:00-11:50(04)	(J. Silverman)

MATH 2720E. Advanced Topics in Mathematics.

Fall	MATH2720ES01	10177	MWF	2:00-2:50(01)	(E. Larson)

Spr	MATH2720ES01	20150	TTh	1:00-2:20(08)	(T. Goodwillie)

MATH 2970. Preliminary Exam Preparation.

No description available.

Fall	MATH2970	S01	16595	Arranged		'To Be Arranged'

Spr	MATH2970	S01	25254	Arranged		'To Be Arranged'

MATH 2980. Reading and Research.

Independent research or course of study under the direction of a member of the faculty, which may include research for and preparation of a thesis. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

MATH 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	MATH2990	S01	16596	Arranged		'To Be Arranged'

Spr	MATH2990	S01	25255	Arranged		'To Be Arranged'

MATH XLIST. Courses of Interest to Students Majoring in Mathematics.**Medieval Studies****MDVL 0063. Antisemitism: A History (JUDS 0063).**

Interested students must register for JUDS 0063.

Fall	MDVL0063	S01	18906	Arranged		'To Be Arranged'

MDVL 0300M. Medieval Gender (ENGL 0300M).

Interested students must register for ENGL 0300M.

Fall	MDVL0300M	S01	19158	Arranged		'To Be Arranged'

MDVL 0360. Medieval Bodies: Medieval Perspectives.

In this course, we will explore bodies from a wide range of disciplines in medieval studies. The body has been always an object of imagination, literature, science, philosophy, and religion, it is the vehicle of both the divine and the profane, and it is at the center of debates on sexuality, gender identities, race, and politics. In this course, we look at how different views on the body and on sexuality developed and changed throughout the medieval period and how they influenced and were influenced by the religious doctrines, medical theories, and the intellectual environment of different groups of people. Finally, we will explore bodies both physical and metaphorical.

Spr MDVL0360 S01 25885 M 3:00-5:30(13) (J. Conant)

MDVL 0750N. Muslims, Christians, and Jews in Medieval Spain (HISP 0750N).

Interested students must register for HISP 0750N.

Fall MDVL0750N S01 19154 Arranged 'To Be Arranged'

MDVL 1120G. The Idea of Self (CLAS 1120G).

Interested students must register for CLAS 1120G.

Fall MDVL1120G S01 19121 Arranged 'To Be Arranged'

MDVL 1205. The Long Fall of the Roman Empire (HIST 1205).

Interested students must register for HIST 1205.

Fall MDVL1205 S01 19078 Arranged 'To Be Arranged'

MDVL 1210E. History of Romance Languages (HISP 1210E/FREN 1020B).

Interested students must register for HISP 1210E or FREN 1020B.

Fall MDVL1210E S01 19153 Arranged 'To Be Arranged'

MDVL 1630. The Talmud (JUDS 1630).

Interested students must register for JUDS 1630.

Fall MDVL1630 S01 18907 Arranged 'To Be Arranged'

MDVL 1963Q. Sex, Power, and God: A Medieval Perspective (HIST 1963Q).

Interested students must register for HIST 1963Q.

Fall MDVL1963Q S01 19122 Arranged 'To Be Arranged'

MDVL 1970. Independent Study.

Tutorial instruction on an approved topic in Late Antique and/or Medieval cultures, supervised by a member of staff. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. May be repeated once for credit.

MDVL 1990. Honors Thesis.

Independent research and writing on a topic of special interest to the student, under the direction of a faculty member. Required of candidates for honors. Permission should be obtained from the Director of the Program in Medieval Studies.

Middle East Studies

MES 0100. The Middle East: Cultures & Societies.

This course highlights major cultural, social, and political developments in the amorphous region known, since the 20th century, as the Middle East. Covering expanses of space and time, this course attends to a diversity of peoples and polities, and considers different regional concepts that include some or all of the territories normally included in the Middle East (including the Fertile Crescent, the Mediterranean world, the Indian Ocean world, the Arab world, and the Muslim world) and addresses the region's coherence in terms of shared historical and political experiences, religious and cultural references or practices, and/or socialities and ways of being.

Spr MES0100 S01 20001 Arranged (A. Winder)

MES 1051. Israel-Palestine: Public Humanities.

This seminar will engage current debates on heritage, traditions, and history in Israel-Palestine with a focus on shared as well as antagonistic cultural and artistic spheres. It will explore how contested narratives can produce diverse perspectives and positions with regard to past and current events. The focus will be on cultural productions in Israel-Palestine and on diasporic Israeli and Palestinian communities in Europe and the US. In addition, examples from the visual and performing arts, museums and public spaces, film and media will illustrate how cultural expressions and events can foster dialogue. Students will work individually and together to design and implement a public event for the Brown and larger Rhode Island community and beyond on the subject of Israel-Palestine, bridging the divides of the region's diverse ethnic and religious populations through cultural dialogue.

Fall MES1051 S01 18761 T 4:00-6:30(07) (K. Galor)

MES 1968. Approaches to the Middle East (HIST 1968A).

Interested students must register for HIST 1968A.

Fall MES1968 S01 18952 Arranged 'To Be Arranged'

MES 1970. Individual Research Project.

Limited to juniors and seniors. Section numbers vary by instructor. Please check Banner for the correct section and CRN to use when registering for this course. Required: all proposals for independent study must be approved by the faculty sponsor and the MES program director. Students should not register for any section of MES 1970 without this approval.

MES 1971. Senior Honors Thesis.

The purpose of this course is to guide you through the development and construction of your senior thesis project. It will provide you with empirical, methodological, and theoretical toolkits, as well as practical writing strategies, to help you bring your thesis to fruition. Open only to Senior students pursuing honors in Middle East Studies. Instructor permission required.

MES 2000A. Decolonizing the Racialized Female Subject: Black and Indigenous Women's Self-Making Under Empire.

This study grapples with conceptions of freedom and humanity emergent in Black and Indigenous women's practices under empire. Colonialism is prefaced on construction of an "other." Aimé Césaire refers to this as "thingification," whereby colonial subjects are dehumanized and the colonizer "decivilized". Totalizing dehumanizing forms are resisted by praxes and epistemologies which challenge the prevailing symbolic order and assert the humanity of those regarded as subhuman. We will examine how epistemological and political contestations of the human inform discourses on freedom and sovereignty and interrogate how various categories of identity refract and re-frame conceptions of humanity, freedom, and sovereignty.

Modern Culture and Media

MCM 0150. Text/Media/Culture: Theories of Modern Culture and Media.

This introductory course will explore its three key terms "modern," "culture," and "media" through a variety of theories, historical narratives, and media objects. We will ask how different media—such as print, photography, cinema, television, digital art, online video, archival practices, and social media—yield distinct modes of seeing, thinking, and feeling, structure the ways we act and engage with the common world, and communicate and collaborate. We will read semiotic theory, critical race studies, feminist, post-colonial, queer and political theory, and examine concepts such as textuality, visuality, and networks. Open to undergraduates only.

Fall MCM0150 S01 18551 MW 1:00-1:50 (A. Azoulay)

MCM 0230. Digital Media.

This course introduces students to the critical study of digital media: from surveillance to activism, from cyberpunk fiction/films to art installations, from social media to video games. We will analyze the aesthetics, politics, protocols, history and theory of digital media. Special attention will be paid to its impact on relation to social/cultural formations, especially in terms of new media's "wonderful creepiness," that is, how it compromises the boundaries between the public and private, revolutionary and conventional, work and leisure, hype and reality.

Spr MCM0230 S01 26512 MW 11:00-11:50 (J. Li)

MCM 0260. Cinematic Coding and Narrativity.

Introduces students to rigorous study of the structural and ideological attributes of cinema, concentrating on the dominant narrative model developed in the American studio system and alternatives to that model. Attention to film theory in relation to questions of representation, culture, and society. Students become conversant with specific elements and operations of the cinematic apparatus (e. g. camerawork, editing, sound-image relations) and how they produce discursive meanings. Open to undergraduates only.

Spr MCM0260 S01 26525 MW 1:00-1:50 'To Be Arranged'

MCM 0700A. Introduction to the Production Image.

The course will provide students with a basic introduction to digital sound and image acquisition and post-production, and to consider the particular capabilities of these digital technologies, especially as these relate to the production of meaning. Of particular interest will be the representational limits of these technologies at the intersection of science and art. Classes will be organized as workshop environments where extensive class time

will be devoted to hands-on learning with digital film cameras, lighting, and digital sound recorders. There are no prerequisites for this class.

Fall MCM0700A S01 18541 Th 10:00-12:50 (D. Udris)

MCM 0730B. TV/Not TV: Theory and Practice.

This course examines both commercial television and non-commercial media forms, considering the dialogue and/or tensions between them. What are the critical potentials and political stakes of viewing TV and of making independent media? How can we re-write TV's cultural codes by stimulating alternative readings, fostering new interpretive practices, creating different texts, or developing diverse modes and sites of distribution? Combining theory and practice (media studies, televisual and anti-televisual screenings, and simple production assignments using available technologies), this course encourages students to read and critique commercial television through both analysis and their own creative media practices.

Fall MCM0730B S01 18930 Th 4:00-6:50 (A. Cokes)

MCM 0780A. Soundtracks: Sound Production and Visual Media.

A production course that examines the role of sound in film, video, and installation forms. The listening assignments and visual media screenings will foreground the usage of audio in the works of selected artists/filmmakers. The course also considers works of sound art. Readings by sonic theorists and producers will examine the possibilities of sound production as a key register of modern social and aesthetic experience. Class members should have completed at least one time-based media class. Students are expected to be competent technically.

Fall MCM0780A S01 18562 W 10:00-12:50 (A. Cokes)

MCM 0903E. Capitalism, Computers, and the Era of A.I..

What is the relation between capital and the computer? To answer this question, this course attends to the particulars of the computer as a mathematical proposition, to its claim to legitimacy as a logic of superior military and political organization, and to its elaboration as something of a natural philosophy in scientific practice. In doing so, we will formulate a conceptual basis to critically assess the glittery promises of current discourse invoking Artificial Intelligence (A.I.), which sees near-total automation as inevitable and the threat of sentient Artificial General Intelligence (A.G.I.) as nigh. We will establish a critique of the computer as a structure (as a philosophical arrangement with a specific and persistent imagination) to think critically about popular ideologies associated with A.I., often put forward by those with capital stake in its commercial success.

Fall MCM0903E S01 18933 T 4:00-6:30(07) (L. Kermode)

MCM 0930G. Introduction to Post-War British Fiction (ENGL 0700V)..

Interested students must register for ENGL 0700V.

Fall MCM0930G S01 18965 Arranged 'To Be Arranged'

MCM 1205G. The Politics of Contemporary Black Popular Music.

This course provides an introduction to the history of black popular music since the 1970s, focusing primarily on sound cultures from the US, Caribbean, and Western Europe. We will begin by studying the mixing techniques developed in Reggae (dub), Disco (remix), and Hip-Hop (scratching and sampling) to discuss how they have shaped popular music since the 1970s. We will then survey these genres as well as the histories of R&B, House and Techno and some of their many offshoots (Jungle & Afrobeats, for instance) have developed over the last 30 years to ask how popular music functions as one of the main channels of communication among the cultures of the African diaspora. Overall, this course investigates the aesthetic, political, cultural, and economic dimensions of black popular music, paying particular attention to questions of gender, sexuality, class, nation, language, and technology.

Fall MCM1205G S01 18937 TTh 2:30-3:50(12) (A. Weheliye)

MCM 1205M. Transnational Black Cultures: Britain and Germany.

While the African diaspora is generally associated with the history of the Americas, recent years have seen the proliferation of African descended communities in Europe due to the aftermath of colonialism and various forms migration. This course will introduce students to the cultural productions of Afro-diasporic groups in Britain and Germany through film, literature, and music.

Fall MCM1205M S01 18934 TTh 1:00-2:20(06) (A. Weheliye)

MCM 1503E. Aesthetic Theory/Cultural Studies.

Aesthetic thought has a long and varied history, but aesthetic categories have recently become a central concern of cultural studies. This course combines readings in the history of aesthetics; twentieth-century work on aesthetics from various philosophical and disciplinary perspectives (from the "anti-aesthetic" to "a return to aesthetics"); and recent scholarship addressing (while not necessarily celebrating) the reemergence of aesthetic questions in cultural and media studies and the evolving relationship of the aesthetic to categories such as ideology, form, and virtuality. Readings from Schiller and Kant to Adorno, Berube, Foster, Ranciere, and Spivak.

Spr MCM1503E S01 26540 M 3:00-5:30(13) (E. Rooney)

MCM 1504J. Kubrick (ENGL 1762D)..

Interested students must register for ENGL 1762D.

Fall MCM1504J S01 18964 Arranged 'To Be Arranged'

MCM 1505B. Hitchcock: The Theory.

The films of Hitchcock often overwhelm the compelling narratives for which they are widely appreciated by threading them through meta-cinematic reflections on the nature of cinema itself. This peculiar method of construction has piqued the attention not only of film theorists, who look to Hitchcock to teach them about technique, but also philosophers, who look to him to help them thing more clearly about the nature of thinking, promising, doubting, and obsession. We will not only examine the films themselves alongside the speculations they have inspired, but also attempt to define the complex pleasures – somatic, cinematic, and cerebral –they elicit from viewers.

Fall MCM1505B S01 18565 W 3:00-5:30(10) (J. Copjec)

MCM 1505P. Channeling Race: Television and Race in America.

Our era has been called both "post-televisual" and "post-racial," yet images that define and are defined by (mis)understandings of race fill our screens (whether on TV sets or other means for disseminating television). Formations of television and race not only remain pressing concerns but are intertwined, mutually constructing one another. This course explores how notions of race have been mediated and how media have figured race. Topics include: stereotype analysis (and beyond); televising Civil Rights; intersections of gender and sexuality; consumerism and commodification; crisis and scandal; racial representation across TV genres (comedy, drama, sports, reality TV), and new media possibilities.

Spr MCM1505P S01 26541 W 3:00-5:30(10) (L. Joyrich)

MCM 1507O. Hyper/pop.

Hyperpop: a meme, a subculture, a Spotify playlist, a mashup of disparate sounds, a sense of street style, a glitch, a microgenre and an anti-genre noted for its brashness, intensity, and maximalist take on pop. This senior seminar will provide an introduction to the study of contemporary popular culture through the lens of hyper/pop as a queer and trans aesthetics of intensity, maximalism and excess. Readings, discussions and screenings will engage theories of gender, punk, fashion, the glitch, postmodernism, remixing and hacking, and students will engage with examples of hyper/pop from music, contemporary art, fashion, film and television. Overall, this course investigates the aesthetics of a "hyper" popular culture, with a particular focus on queer and trans artists pushing the limits of form. Final projects will be production focused.

Fall MCM1507O S01 18942 Th 4:00-6:30(04) (M. Moore)

MCM 1700D. Reframing Documentary Production: Concepts and Questions.

An advanced seminar for students of video and/or film production. Focuses on the critical discussion and production of documentary media. A major project (10-20 minutes), three shorter works, and in-class presentations of work-in-progress required. Readings on the theory and practice of the form and weekly screenings augment the presentation of student work. Class members should have completed at least one time-based media class. Students are expected to be competent technically.

Spr MCM1700D S01 26544 Th 1:00-3:50 (A. Cokes)

MCM 1702C. Incomputable Tales: Art, AI, Archives.

What is extracted and accumulated, what is reduced and deterritorialized, what exceeds archival and algorithmic capture, what remains radically incomputable. This advanced studio/seminar course will confront both the archive and AI dataset as technologies of power—hegemonic

epistemological ordering/extraction. While doing so, we will explore art's potential to craft counter-narratives and generate new poetics of retrieving and preserving; of holding in common(s). Key topics include feminist shadow archives, queer-life and leaky archives, archives of feelings, speculative-critical fabulation, AI-generated mean-images, and ungovernable, incomputable data. Through video, digital media, and AI-hacking workshops, analysis of art case studies, and theoretical explorations, students will develop a major research-driven art project. This project can manifest as an AI-based artwork, sound piece, video, performance, curatorial intervention, writing, and more. The course includes a visit to the Providence Queer-Archive-Work and concludes with a final group speed-show.

Fall MCM1702C S01 19108 W 3:00-5:50 (E. Giardina Papa)

MCM 1970. Independent Study in Modern Culture and Media.

Section numbers vary by instructor. Please check Courses @ Brown for the section number and CRN to use when registering for this course or contact the MCM office if you need a section number created for an instructor that's not listed. Time dedicated to the project should fall within the recommended range for independent studies (10-20 hours per week). Instructor's permission required.

MCM 1980. Honors Thesis/Project Research in Modern Culture and Media (Part 1).

Independent research under the direction of a faculty member leading to an honors thesis/project. MCM 1980 is the first of two courses required of MCM honors candidates and is taken in the 7th semester. Instructor's permission required.

MCM 1990. Honors Thesis/Project in Modern Culture and Media (Part 2).

Independent research and writing a thesis or creating/producing a project under the direction of a faculty member leading to an honors thesis/project. MCM 1990 is the second of two courses required of MCM honors candidates and is taken in the 8th semester. Instructor's permission required. Prerequisite: MCM 1980.

MCM 2120T. Media Among Themselves: Recursivity and Mimesis in Media and Performance.

This class explores mediatic modes of citation, recursion, gesture, im/possibility, redaction, and nonrepresentational mimesis. We will inquire after Rizvana Bradley's idea of "anteaesthetics" in works such as Jaffa's appositional response to Snow's Wavelength; Lemon's nesting of Tarkovksy's Solaris within Ceremonies of the Air; Hopinka's Lore beside Frampton's Nostalgia; Cassils' recursive Haroki; Sansour's recursive Kubrik; Shonibare's redactive Verdi; and Ligon's Hands in response to Farrakhan's Million Man March. Works that gesture (often obliquely or opaquely) by Belmore, Perry, Morimura, Leigh, Brand, Bey will participate. The title replays Irigaray's "Commodities Among Themselves" to ask after fungibility in the ongoing colonial-capitalism of the Plantationocene.

Fall MCM2120T S01 18946 M 3:00-5:30(03) (R. Schneider)

MCM 2450. Exchange Scholar Program.

Fall MCM2450 S01 16597 Arranged 'To Be Arranged'

MCM 2510O. Decolonial Futurities: Submerged Perspectives from and within the Americas.

Anthropocenic exhaustion begs for new/old artistic modes of gathering and collectivity. How can we think, do, create, perform, listen, sense, perceive, and generate future-oriented imaginaries based on the texture of ancient ways? This collaborative humanities course centers perspectives, translations, and mediations from and about the Américas. We seek to decenter the liberal humanism of environmental thinking to present modes of being that emerge from the otherwise of the Américas. This imaginary is pluralistic in its linguistic, racial, ethnic, and gendered imagination. It foregrounds submerged perspectives and unearths subterranean stories that confront legacies of (neo)colonialism, racial capitalism, and extractivist exploitation. Guest participants — with the support of the Brown Arts and Cogut Institutes, Modern Culture and Media, and Portuguese and Brazilian Studies — enliven our study across the U.S., Turtle Island, and Abya Yala (the Indigenous nomenclature for the Américas).

Fall MCM2510O S01 18947 W 12:00-2:30 (M. Gomez-Barris)

MCM 2980. Independent Reading and Research in Modern Culture and Media.

Individual reading and research for doctoral candidates. Not open to undergraduates. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Time dedicated to the project should fall within the recommended range for independent studies (13-20 hours per week).

MCM 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall MCM2990 S01 16598 Arranged 'To Be Arranged'

Spr MCM2990 S01 25256 Arranged 'To Be Arranged'

Music

MUSC 0021J. Stephen Sondheim and the American Musical.

This seminar considers the theater shows of Stephen Sondheim in relation to the history of the American musical. Through close study of selected scenes and shows, we examine how and why Sondheim and his collaborators "reinvented" the genre. Special emphasis will be given to Sondheim's critical skepticism concerning the myths, characters, and ethos of social optimism that have been central to the Broadway tradition. We examine links between the shows and post-WWII historical contexts, and consider the political implications of the circumscribed social universe —predominantly white, urban, and affluent—within which most of his shows take place.

Fall MUSC0021J.S01 17446 TTh 10:30-11:50(13) (D. Gooley)

MUSC 0021M. Music, Sport, Games, Play.

This course uses the organizing figure of play to explore several forms of human activity, and to consider the relationship between them. Building on existing scholarly approaches to the role of play in human flourishing, it asks how play structures music, sports, and game in ways that are comparable, how the different modalities of each activity give rise to unique principles of play and competition, and how these three domains interact with one another. Topics will include musical improvisation and competition, in forums ranging from rap battles to air guitar; the role of sound in professional sports marketing and in-game experience design; the songs that enliven children's games and the soundtracks of video games; forms such as capoeira, which involve playful interaction in several different domains; and many more.

Fall MUSC0021M.S01 18686 TTh 9:00-10:20(05) (J. Tucker)

MUSC 0075. Jazz: Race, Power and History.

Explores jazz in relation to American history, discussing how economics, war conditions, regional differences and race relations shaped the music and its public reception. With readings from A. Baraka, L. Levine, R. Ellison, L. Erenberg, E. Lott, G. Early, S. DeVeaux and others, we address how jazz embodies social and political values or expresses national character. Open to non-musicians. Music proficiency preferred but not required. Enrollment limited to 60.

Spr MUSC0075 S01 25909 TTh 1:00-2:20(08) (D. Gooley)

MUSC 0200. Computers and Music.

Computers and Music examines the production, history and theory of music technology. The course tracks the development of musical inventions and their impact on musical thought and culture. Students completing Music 200 will gain a practical knowledge of electronic music based on first-hand experience with music production software to complete several creative assignments. Students will also gain an appreciation for the pioneering work done in previous decades in research, songwriting and performance. Finally, students will become familiar with the literature of electronic music and learn about the impact of technology on popular and experimental genres. The course combines synchronous online lectures with in-person lab sections. No special knowledge of music or technology is expected. Priority given to lower-level students and music concentrators. Upper-level students will be admitted as space allows, by permission of instructor.

Fall MUSC0200 S01 17453 TTh 2:30-3:50(12) (T. Winkler)

MUSC 0220. MEME Ensemble: Collaborative Composition and Improvisation Ensemble.

The collaborative approach to sound creation often yields new possibilities, ideas, and perspectives on sound that can be later utilized in the creation of new music projects. In this course, students will have the opportunity to explore different types of improvisation in collaborative studio sessions, create their own music projects, and learn about existing "open score" repertoire. Students may engage in projects that also include video, audio recording, and, if it's of interest - theater and choreographic elements. The course will culminate in a public premiere performance of the newly created works.

Fall	MUSC0220	S01	18986	Th	4:00-6:30(04)	(A. Faizullina)

MUSC 0400A. Introduction to Music Theory.

An introduction to musical terms, elements, and techniques. Topics include notation, rhythm and meter, intervals, scales, chords, melody writing, harmonization, and form. Students will develop their musicianship skills, including sight-singing and keyboard, in labs which meet twice weekly. No prior musical experience is necessary. MUSC 0400A or 0400B may fulfill part of the theory requirement for the music concentration. Enrollment limited to 30. Permission granted based on questionnaire given in first class. Preference given to lower-level students.

Spr	MUSC0400A/S01	26156	TTh	2:30-3:50(11)	'To Be Arranged'

MUSC 0400B. Introduction to Popular Music Theory and Songwriting.

An introduction to musical terms, elements, and techniques, with an emphasis on how they apply to Western popular music. Topics include notation, rhythm and meter, intervals, scales, chords, melody writing, harmonization, and form. Students will develop their musicianship skills, including sight-singing and keyboard, in labs which meet twice weekly. No prior musical experience is necessary. MUSC 0400A or MUSC 0400B may fulfill part of the theory requirement for the music concentration. Enrollment limited to 30. Permission granted based on questionnaire given in first class. Preference given to lower-level students.

Fall	MUSC0400B/S01	17514	MWF	11:00-11:50(16)	(I. Tan)

Spr	MUSC0400B/S01	25900	TTh	9:00-10:20(05)	(T. Vollbrecht)

MUSC 0450. On Songs and Songwriting.

A study of the art and craft of song from the perspective of the listener, writer, and performer. Students will examine a large range of music, from the middle ages to the present. Topics include: song and memory; declamation and delivery; melody and harmony; rhyme and rhythm; phrasing and form. Emphasis will be on both creation and interpretation as students develop their personal approach to songwriting. Some prior knowledge of music desirable. Course will culminate in a presentation of original songs by students enrolled in the class. Enrollment by application and limited to 19. Application form link: <http://www.soundidea.org/mu450/Music450-questionnaire.pdf>

Fall	MUSC0450	S01	17465	M	3:00-5:30(03)	(J. Rován)

MUSC 0550. Theory of Tonal Music I.

Intensive study of the building blocks of tonal music traditions including western and popular music with focus on melody, harmony, counterpoint, keyboard skills, ear training, sight-singing from musical notation, and composition. Prior keyboard experience helpful but not required. A required placement exam is administered at first class meeting. Students who do not have experience reading music notation should take MUSC 0400 prior to MUSC 0550. MUSC 0550 is a prerequisite to many music courses and is a requirement for the music concentration.

Fall	MUSC0550	S01	17504	TTh	1:00-2:20(06)	(M. Steinbach)

Fall	MUSC0550	S02	17507	TTh	2:30-3:50(12)	(I. Tan)

Spr	MUSC0550	S01	25903	TTh	10:30-11:50(09)	(E. Nathan)

MUSC 0560. Theory of Tonal Music II.

The objective of Music 560 is to advance the student's knowledge of the theory and practice of tonal music, with an emphasis on more advanced techniques of voice leading and harmony, such as modal mixture and chromaticism. Labs focus on mastery of related keyboard, score-reading, and aural skills. Form of tonal music will be studied, including sonata form. Exercises include four-part harmonization, analysis and composition in a variety styles and genres. Compositional assignments are given in order to encourage musical creativity and to illuminate theoretical concepts in the process. A more substantial final compositional project is due at

the end of the semester and will be performed in class. MUSC 0560 is designed as part of a year-long comprehensive course in the theory of tonal music. Prerequisite: MUSC 0550 or permission of the instructor.

Spr	MUSC0560	S01	25910	TTh	1:00-2:20(08)	(M. Steinbach)

MUSC 0570. Jazz and Pop Harmony.

For students with knowledge of rudiments of music, including scales, intervals, key signatures, rhythm and meter. Keyboard skills strongly recommended. Intensive study of chord scales, chord progressions, modulation, voice leading, melody writing, harmonization, reharmonization, chord symbols, and lead sheet construction. Lab sessions will focus on ear training, keyboard exercises, and sight singing. Emphasis will be on the vocabulary of jazz theory and the repertoire will be American popular song. Course section is limited to 25 students.

Spr	MUSC0570	S01	25906	TTh	10:30-11:50(09)	(E. Tomassi)

MUSC 0600. Chorus.

Half credit each semester. A practical study of choral literature, techniques, and performance practice from Gregorian chant to the present, offered through rehearsals, sectionals, and performance. Enrollment is by audition, based on voice quality, experience, and music-reading ability. Instructor permission required.

Fall	MUSC0600	S01	17343	MW	6:30-9:00PM	(L. Jodry)

Spr	MUSC0600	S01	25779	MW	6:30-9:00PM	(L. Jodry)

MUSC 0610. Orchestra.

Half credit each semester. A practical study of the orchestra repertoire from Bach to the present, offered through coaching, rehearsals, and performances. Enrollment is by audition. Students will be notified of audition results within the first seven days of the semester. Restricted to skilled instrumentalists. May be repeated for credit.

Fall	MUSC0610	S01	17341	TTh	7:15-9:45PM(02)	(E. Nathan)

Spr	MUSC0610	S01	25777	TTh	7:15-9:45PM	(M. Seto)

MUSC 0620. Wind Symphony.

Half credit each semester. A practical study of the wind band repertoire from Mozart to the present, offered through coaching, rehearsals, and performances. Enrollment is by audition. Restricted to skilled instrumentalists. Instructor permission required.

Fall	MUSC0620	S01	17342	MW	6:00-7:20	(K. Plouffe)

Spr	MUSC0620	S01	25778	MW	6:00-7:20	(K. Plouffe)

MUSC 0630. Jazz Band.

Half credit each semester. A practical study of jazz from the 1920s to the present through coaching, rehearsals, and performance. Seminars on arranging, ear training, and improvisation are conducted for interested students but the focus is on performance. Enrollment is by audition. Restricted to skilled instrumentalists and vocalists. Instructor permission required.

Fall	MUSC0630	S01	17344	MW	7:30-8:50PM	(T. Vollbrecht)

Fall	MUSC0630	S02	17348	T	8:00PM-9:20PM	(T. Vollbrecht)

Fall	MUSC0630	S03	17349	W	1:40-3:00	(T. Vollbrecht)

Fall	MUSC0630	S04	17350	W	3:30-4:50	(T. Vollbrecht)

Fall	MUSC0630	S05	17352	F	4:00-5:20	(T. Vollbrecht)

Fall	MUSC0630	S06	17353	T	12:00-1:20	(T. Vollbrecht)

Fall	MUSC0630	S07	17354	W	9:00PM-10:20PM	(T. Vollbrecht)

Fall	MUSC0630	S08	17355	W	10:30-11:50	(T. Vollbrecht)

Fall	MUSC0630	S09	17356	Th	4:00-5:20	(T. Vollbrecht)

Fall	MUSC0630	S10	17357	F	2:30-3:50	(T. Vollbrecht)

Spr	MUSC0630	S01	25780	MW	7:30-8:50PM	(T. Vollbrecht)

Spr	MUSC0630	S02	25785	T	8:00PM-9:20PM	(T. Vollbrecht)

Spr	MUSC0630	S03	25786	W	1:40-3:00	(T. Vollbrecht)

Spr	MUSC0630	S04	25787	W	3:30-4:50	(T. Vollbrecht)

Spr	MUSC0630	S05	25788	F	4:00-5:20	(T. Vollbrecht)

Spr	MUSC0630	S06	25789	T	12:00-1:20	(T. Vollbrecht)

Spr	MUSC0630	S07	25790	W	9:00PM-10:20PM	(T. Vollbrecht)

Spr	MUSC0630	S08	25792	W	10:30-11:50	(T. Vollbrecht)

Spr	MUSC0630	S09	25793	Th	4:00-5:20	(T. Vollbrecht)

Spr	MUSC0630	S10	25794	F	2:30-3:50	(T. Vollbrecht)

MUSC 0640. Ghanaian Drumming and Dancing Ensemble.

A dynamic introductory course on drumming, dancing, and singing of Ghana and the diaspora. Students learn to perform diverse types of African music, including Ewe, Akan, Ga, and Dagomba pieces on drums, bells, and shakers. No prerequisites. May be repeated for credit. Enrollment limited to 15. Instructor permission required.

Fall	MUSC0640	S01	17443	W	12:00-2:50	(M. Obeng)
Spr	MUSC0640	S01	25844	W	12:00-2:30	(M. Obeng)

MUSC 0642. World Music Ensemble.

This ensemble focuses on global percussive and song traditions, especially those of the African diaspora (based on instructor's vast musical experiences). Here western instrumentalists fuse with traditional musicians from every culture: bongo, gylil, ukulele, tabla, etc. Students will grow and develop their musical skills by learning new techniques on their own instrument, exploring a range of repertoire representing genres such as highlife, reggae, salsa, afrobeat, Afro-jazz, and global fusions. There will be unique opportunities to work on improvisation taking influence from Steve Reich, Tito Puente, Randy Weston, Hugh Masekela, Paul Simon, Miriam Makeba, Ghanaba, and Milton Nasimiento.

Fall	MUSC0642	S01	17445	M	3:00-5:30(03)	(M. Obeng)
Spr	MUSC0642	S01	25845	M	3:00-5:30(13)	(M. Obeng)

MUSC 0650. Javanese Gamelan.

Half credit each semester. Instruction, rehearsals, and performances in the gamelan music of Java, on instruments owned by the department. No prerequisites. Enrollment limited to 18 students.

Fall	MUSC0650	S01	17345	T	6:00-8:50PM	(M. Perlman)
Spr	MUSC0650	S01	25781	T	6:00-8:50PM	(E. Perlman)

MUSC 0670. Old-Time String Band.

Half course each semester. Instruction and ensemble playing. Music taught by ear. American (southern Appalachian Mountain) traditional music on violin (fiddle), 5-string banjo, mandolin, and guitar. Enrollment limited to 20 students.

Fall	MUSC0670	S01	17407	T	8:00PM-9:50PM	(S. Astrausky)
Spr	MUSC0670	S01	25796	T	8:00PM-9:50PM	(S. Astrausky)

MUSC 0680. Chamber Music Performance.

Half credit each semester. The practical study of the literature of chamber music through participation in a small ensemble. Regular rehearsals, coaching by department staff, and performances are required. Enrollment is by audition. Students will be notified of audition results within the first ten days of the semester. Restricted to skilled instrumentalists. May be repeated for credit.

Fall	MUSC0680	S01	19155	Arranged		(L. Finkel)

MUSC 0810. Applied Music Program: Instruction in Vocal or Instrumental Music.

Half credit each semester. Restricted to skilled musicians. Openings are limited. Enrollment and re-enrollment is by audition and jury. Lessons are given by consultants to the Applied Music Program. A fee is charged for enrollment. Copies of the Applied Music Program Guidelines giving detailed information are available online at www.brown.edu/music. May be repeated up to four times for credit.

MUSC 0890. The Romantic Generation.

Beethoven's shadow looms large on the young romantic generation, setting off a collective anxiety of influence unparalleled in musical history. "what next?" seemed difficult to answer as Beethoven brought the abstract forms of sonata, symphony, and quartet to unreachable heights. The range of answers gave birth to a musical style that looked backwards into the Baroque for textural density and flow, abandoning the articulated symmetry of the classical phrase, while pushing the harmonic language, musical drama, and effect into new horizons. All the while, the search for alternative structures and points of musical departure, resulted in a new sort of interaction between music and other art forms. Schumann's E.T.A Hoffman's inspired character pieces, Berlioz's program music, the proliferation of the Lied, Liszt's Dante Sonata and Petrarca sonnets are telling examples of this search for a new musical style and context.

Fall	MUSC0890	S01	17524	T	12:00-2:20	(S. Abboud Ashkar)

MUSC 0910. Medieval and Renaissance Music.

Western Music 1000-1700 Topics addressed - among many others! How was music notated before the staff was invented? What repertoire developed when Notre Dame was built- 1099? What did the Crusaders sing? What is Polyphony? What was sung for the dedication of the Florence Duomo in 1440? How did the rise of printing change music? What music drove the Pilgrims to distraction? What did Bach hear as a child? Why did Opera develop, and what sort of music was written for its first 100 years? A few of the composers studied: Hildegard, Machaut, Dufay, Josquin, Palestrina, Byrd, Gesualdo, Schütz, Purcell, and Monteverdi.

Spr	MUSC0910	S01	25930	TTh	10:30-11:50(09)	(L. Jodry)

MUSC 1010. Advanced Musicianship I.

Training in advanced musicianship skills relevant to Western art music from the sixteenth Century to the present, including sight singing, ear training, score reading, keyboard harmony, improvisation, and musical transcription. Prerequisite: MUSC 0560 or MUSC 0570, or permission of the instructor.

Fall	MUSC1010	S01	17464	MW	3:00-4:20(10)	(J. Root)

MUSC 1011. Advanced Musicianship II.

Continuation of MUSC 1010. Prerequisite: MUSC 1010 or permission of the instructor.

Spr	MUSC1011	S01	25897	MWF	1:00-1:50(06)	(I. Tan)

MUSC 1050. Advanced Music Theory II.

A study of theories of Western art music since Debussy. Exercises in analysis and composition, focusing on works of Debussy, Stravinsky, Schoenberg, Webern, Bartok and Ives. Students give presentations on selected later composers. Prerequisite: MUSC 0560 with grade of B, or the equivalent.

Spr	MUSC1050	S01	25913	TTh	2:30-3:50(11)	(E. Nathan)

MUSC 1100. Introduction to Composition.

Introduction to Composition explores a wide variety of compositional theories and practices with the goal of honing students' technical skills and developing their unique compositional styles. Through creative assignments, readings, and listening, students will have the opportunity to observe and reflect on various compositional practices that may in turn be applicable to their own work. We also will address questions of musical craft including notation, technology, and instruments. To merge the gap between theory and praxis, in addition to our normal coursework we will conduct several reading sessions with hosted guest musicians, and we will conclude the semester with a final in-class concert. Prerequisite: MUSC 0560 or MUSC 0570 or permission of the instructor. Enrollment limited to 20 students.

Fall	MUSC1100	S01	17451	T	9:30-11:50	(L. Wang)

MUSC 1110. Seminar in Composition.

This is a seminar-based course with a creative component focusing on specific compositional techniques such as writing transitions and motivic development, and writing for specific kinds of ensembles. These techniques are applicable to all kinds of music, from concert music to popular genres. The course will also address aesthetic issues, trends and influences and how they affect living composers' individual voices. Besides studying notated repertoire from the concert tradition, we will also examine approaches to film scoring, improvisation, and environmental sound worlds outside of the traditional concert hall.

Spr	MUSC1110	S01	25929	Th	9:00-11:30	(A. Cheung)

MUSC 1120. The Technique of Orchestration.

The study of orchestration includes the ranges, sounds, and idiosyncrasies of the individual instruments, and the combination of those instruments into ensemble textures. A series of graduated assignments, including pieces for solo cello, string quartet, wind quintet, wind ensemble, and full orchestra, form the basis of this course. Prerequisite: MUSC0560 or permission of the instructor. Not open to first year students.

Fall	MUSC1120	S01	17452	W	9:30-11:50	(L. Wang)

MUSC 1150. Seminar in Improvisation.

This is a seminar with a strong creative component that explores the art of improvisation. It caters to musicians (incl. singers) and composers across genres - whether jazz, rock, classical, hip hop, folk, electronic music, etc. We will analyze the properties of improvisation while focusing on

soloing, group improvisation, groove and time-feel, ideation, improvisation in composition, production, and on the bandstand. We will transcribe, deal with questions such as "how to play without sheet music," and address aesthetic issues, diverse lineages and context. We will analyze other artists' improvisations, learn how to improvise ourselves, and obtain the tools necessary to develop our craft independently. You will need your instrument, voice, and - most importantly - your ear. Music and instrumental proficiency is required. A questionnaire will serve as a prescreening. Access to the seminar will be given via override approval.

Fall MUSC1150 S01 18710 W 3:00-5:30(10) (T. Vollbrecht)

MUSC 1200. Recording and Sound Design Techniques.

Music 1200 is a rigorous study of music production techniques taught in parallel with topics in psychoacoustics. Students will create original studio work while developing listening and technical skills for audio production. Technical topics include recording, signal processing and mixing software, microphone technique, and sound engineering fundamentals. Class size is limited and some prior experience with digital audio workstations is expected. Preference will be given to students who have successfully completed MUSC 0200 and are active in the music department. Admission is determined by an entrance questionnaire completed at the first class meeting.

Fall MUSC1200 S01 17468 TTh 2:30-3:50(12) (J. Moses)

Spr MUSC1200 S01 25915 TTh 4:30-5:50 (M. Azevedo)

MUSC 1210. Seminar in Electronic Music: Real-Time Systems.

Seminar in Electronic Music is a study of music employing electronic media, including real-time digital signal processing, multimedia, and live performance. Technical aspects of the course focus on programming using Max/MSP to create interactive projects and algorithmic compositions. Permission of instructor required. Interested students must come to the first class. Preference will be given to students who have completed MUSC 0200.

Fall MUSC1210 S01 17498 TTh 1:00-2:20(06) (J. Rován)

MUSC 1240N. Analog Practice.

Analog sound is uniquely tactile, expressive, and flexible. Through a series of solo, collaborative, recorded, and live-performed projects, this class explores the practice of creating analog sound. We will use a wide array of modular and semi-modular analog synthesizers, including the rare ARP 2500. Beginning with broad concepts of voltage flow and modulation, we will expand into considering the unique affordances of various synths, addressing questions such as tone color, ease of sound production and variation, and conduciveness to combination with other sound sources. Interested students strongly recommended to attend first day; final class list determined by questionnaire.

Fall MUSC1240N S01 17482 T 4:00-6:30(07) (M. Azevedo)

MUSC 1240R. Intro to Rap Songwriting.

This is an introductory production seminar in which students will explore various aspects of rap songwriting and performance. Over the course of the semester we will examine a range of poetic constructs, song structures, and storytelling approaches through deep listening sessions, class discussions, and lectures from invited guests. Creative assignments will be paired with materials that contextualize our work within the broader history of hip hop as a black cultural expression and locate certain songwriting trends within ongoing musico-cultural dialogues about authorship, race, gender, sexuality, and genre, among other topics. In lieu of a formal lab, there will be a minimum of four workshops per semester to provide a basic studio foundation for students without prior recording experience and a space for more advanced students to practice and share. Planning of these workshops will consider the group of enrolled students' schedules.

Fall MUSC1240R S01 17467 M 3:00-5:30(03) (E. Lumumba-Kasongo)

MUSC 1500A. The Genius of Bach.

An examination of the life and work of Bach, his vocal, orchestral, keyboard music, including its place in German society, views of his contemporaries and explanation of his performance venues, manuscript and publishing history.

Fall MUSC1500A S01 17634 MW 3:00-4:20(10) (L. Jodry)

MUSC 1500B. Messiaen.

Oliver Messiaen is one of the most influential and eclectic musicians of the 20th century, yet he remains a highly enigmatic figure. This seminar explores Messiaen's life, theoretical writings, and above all his music. Critical listening and analysis will focus on Messiaen's idiosyncratic harmonic and rhythmic language as well as performance practice issues. We will investigate Messiaen's use of color, plainsong, "modes of limited transposition," birdsong, serialism, and rhythm via representative works. We will also examine Messiaen's formation and his legacy as teacher/composer/performer. Prerequisite MUSC 0560.

Spr MUSC1500B S01 25925 W 3:00-5:30(10) (M. Steinbach)

MUSC 1700. Score Reading and Conducting.

The art of reading, analyzing, and conducting a musical score. Studies in clef reading, transposition, ear-training, and structural analysis to develop the skills needed for full comprehension of an orchestral score. Introduces the theory and technique of conducting with practice in the art of physical gesture. Selected repertoire from the Baroque through contemporary periods are studied and conducted in class. Prerequisite: MUSC 0550 or permission of the instructor.

Spr MUSC1700 S01 25914 Th 3:00-5:30 (M. Seto)

MUSC 1810. Applied Music Program: Instruction in Vocal or Instrumental Music.

Half credit each semester. Restricted to skilled musicians. Restricted to skilled musicians demonstrating mastery of an advanced repertoire in their fields. Openings are limited. Enrollment and re-enrollment is by audition and jury. Lessons are given by consultants to the Applied Music Program. MUSC 0830, 0840 is prerequisite to this course. A fee is charged for enrollment. Copies of the Applied Music Program Guidelines giving detailed information are available online at www.brown.edu/ music. Prerequisite: MUSC 0400, or MUSC 0550, MUSC 0560. Written permission required. May be repeated up to four times for credit.

MUSC 1910. Music and Mind.

Explores music perception in terms of auditory and cognitive processes such as auditory perception, memory, and learning. Lectures, discussions, and demonstrations review and analyze a body of scientific research on the psychology of music. Problem sets and a collaborative laboratory project. Prerequisites: PY 1 (PSYC0010) and MU 1 (MUSC 0010) or permission of the instructor.

Fall MUSC1910 S01 17447 TTh 1:00-2:20(06) (M. Perlman)

MUSC 1960. Advanced Ghanaian Drumming and Dancing Ensemble.

Students with experience in African and related musical traditions perform drumming, dancing, and singing of Ghana and the diaspora. Focus on a more challenging repertoire with emphasis on multi-part, lead, and improvisational playing. Prerequisite: audition. May be repeatable for credit. Instructor permission required. Enrollment limited to 15 students.

Fall MUSC1960 S01 17441 M 12:00-2:30 (M. Obeng)

Spr MUSC1960 S01 25843 M 12:00-2:30 (M. Obeng)

MUSC 1970. Individual Independent Study.

Directed undergraduate research for advanced students. Prerequisite: permission of the instructor. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

MUSC 1980. Group Independent Study.

Directed undergraduate research for advanced students. Prerequisite: permission of the instructor. Section numbers vary by instructor. Please see the registration staff for the correct section number to use when registering for this course.

MUSC 2000. Theory and Method in Ethnomusicology.

This core seminar offers a graduate-level survey of the discipline of ethnomusicology and its history, building on previous coursework in ethnographic methods and the history of anthropological theory. Students will complete independent research projects as well as shorter assignments geared to professional development (e.g., exam field proposal, scholarly book review, historical investigation of the Society for Ethnomusicology).

Spr MUSC2000 S01 25926 W 3:00-5:30(10) (J. Tucker)

MUSC 2022. Black Music: History, Aesthetics, and Politics.

This course explores the discourse on Black music through close reading of texts. We will dig into the history of Black music as a category and address the sonic, sociocultural, and political facets of Black music using specific genres as case studies. Students will critically engage with foundational texts in addition to cutting-edge work on Black music. Seminars will focus on reading and discussion; time will also be set aside for in-class presentations.

Fall	MUSC2022	S01	18526	M	3:00-5:30(03)	'To Be Arranged'

MUSC 2024. Collective Genius: Black Music Collectives from AACM to Odd Future.

"Collective Genius: Black Music Collectives from AACM to Odd Future" is a graduate-level / upper-level undergraduate discussion seminar that explores the impact and innovative contributions of black music collectives, from the Association for the Advancement of Creative Musicians (AACM) to groups like the Soulquarians and Odd Future. This course examines how these collectives have shaped the soundscape of music and culture through their experimental approaches, collaborative ethos, and socio-political commentary. Through in-class discussions, critical listening sessions, and guest visits, students will delve into the philosophies, artistic innovations, and cultural movements driven by these groups. Ultimately the course explores their strategies for navigating the music industry as rhizomatic structures distinct from but connected to the entity of the record label or "supergroup," alongside their efforts to build community and expand the sounds of black music.

Fall	MUSC2024	S01	18530	W	3:00-5:30(10)	(E. Lumumba-Kasongo)

MUSC 2080H. Key Concepts in Sociocultural Theory.

Ethnomusicology has always been interdisciplinary, and is becoming more so. The student today may encounter concepts from semiotics, linguistics, cultural studies, literary theory, political economy, sociology, cognitive psychology, media studies, sound studies, science and technology studies, organizational studies, and material culture studies, and other disciplines as well. We will examine some of the key concepts of these fields and consider their possible uses in the study of the performing arts. From 'affordances' to the 'type/token distinction,' from 'actor-network theory' to the 'third-person effect,' we will learn to apply (and criticize) concepts presupposed by much current socio-cultural theorizing.

Fall	MUSC2080H	S01	17448	Th	4:00-6:30(04)	(M. Perlman)

MUSC 2111. The Contemporary Orchestra: Innovation, Tradition, and Institution.

This course is a comprehensive look into the modern orchestra's relationship with new music. A major component will be examining repertoire of the past sixty years, seeing how new techniques, aesthetics, and technologies (new instruments, computer-assisted orchestration, acoustics) have influenced how composers approach writing for the orchestra. We will explore pathbreaking works that involve spatialization, alternative tunings, and improvisation. Orchestras are natural vehicles for new ways of thinking about sound and the concert experience, but in dealing with economic realities and a commitment to canonical practice, they are also the most resistant to change. What are the limitations and expectations of music created for these institutions? How is cultural prestige at play, and what roles do artistic administrators, composers-in-residence, publishers, and critics play in programming? And how might new initiatives for young composers and underrepresented voices change relationships to audiences?

Fall	MUSC2111	S01	18525	M	9:00-11:30	(A. Cheung)

MUSC 2210. Digital Performance.

A production seminar examining the artistic impact and creative potential of digital media in the context of live performance. Readings and analysis of work examine innovations in performance practice from dance, theatre, performance art and music. Collaborative assignments investigate video projection, sound design and interactive sensor technology, culminating in a final large-scale performance. Permission will be granted based upon a questionnaire given in the first class.

Fall	MUSC2210	S01	17497	W	12:00-2:30	(T. Winkler)

MUSC 2220. Designing and Playing Alternative Controllers.

This seminar will explore the science and aesthetics of designing alternate controllers for musical performance. Topics will include basic electronics

and hardware prototyping, instrument construction, theories of gesture, human-computer interface issues, and the challenges of mapping sensor data to meaningful musical parameters. Previous experience with MaxMSP or other real-time programming required. Permission of instructor required.

Spr	MUSC2220	S01	25898	M	3:00-5:30(13)	(J. Rován)

MUSC 2450. Exchange Scholar Program.

Fall	MUSC2450	S01	16600	Arranged	'To Be Arranged'
Fall	MUSC2450	S02	16601	Arranged	'To Be Arranged'
Spr	MUSC2450	S01	25258	Arranged	'To Be Arranged'

MUSC 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	MUSC2970	S01	16602	Arranged	'To Be Arranged'
Spr	MUSC2970	S01	25259	Arranged	'To Be Arranged'

MUSC 2980. Reading and Research.

Directed graduate research. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

MUSC 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	MUSC2990	S01	16603	Arranged	'To Be Arranged'
Spr	MUSC2990	S01	25260	Arranged	'To Be Arranged'

Philosophy**PHIL 0010. The Place of Persons.**

We'll concentrate on some fundamental moral and metaphysical issues concerning ourselves as persons: What (if anything) gives us a moral status different from that of other animals? Do we have the sort of free will required for us to be morally responsible for our actions? What makes you one individual person or self at a particular time? What makes you today the same individual person as that obnoxious 5-year old who went by your name a few years back?

Fall	PHIL0010	S01	17167	MWF	11:00-11:50(16)	(D. Christensen)

PHIL 0021. Living the Sage Life: A History of Chinese Ethics.

How does a sage live their life? What do we have to do to become sages? Chinese philosophers throughout history have answers to these questions. In this course, we investigate theories of ethics and how they relate to a good and moral life from the perspectives of various Chinese philosophers, with a special focus on different variations of Confucianism and Daoism. We will start with Confucius in the Warring States, to Laozi in the Western Zhou Dynasty, Zhu Xi in the Song dynasty, and end with Wang Yang Ming in the Ming Dynasty. We will collectively investigate what these philosophers thought about sagehood and the sage life, and how (or if) that's relevant to our contemporary society.

Fall	PHIL0021	S01	18705	MWF	10:00-10:50(14)	'To Be Arranged'

PHIL 0061. Ethical Themes in the Contemporary American Short Story.

Do you like to read short stories and discuss the ethical issues they raise? In this seminar, we will discuss contemporary American short stories in terms of ethical issues involving love, envy, kindness, cruelty, pride, pity, grief, obligation, charity, and other areas. How can such discussions offer fresh perspectives on fiction as well as on ethics? This is a hybrid discussion seminar with all sessions available recorded as well.

Fall	PHIL0061	S01	18790	M	3:00-5:30(03)	(F. Ackerman)

PHIL 0090A. Food and Philosophy.

This course will deal with questions about the epistemology, metaphysics, aesthetics, ethics and politics of food: how we should reason about the things we eat, what makes them tasty or artistic, and what we ought and ought not to eat and how we ought to structure the environment in which food is produced and distributed. This seminar is meant as a general introduction to philosophy, in which you will familiarize yourself with long-standing kinds of philosophical questions and modes of reasoning. Food will be our anchor topic, the subject matter that gives us the occasion for such philosophical reflection.

Spr PHIL0090A S01 25575 MWF 12:00-12:50(01) (E. Guindon)

PHIL 0110. Ancient Greek Philosophy.

This course will introduce students to the major concerns of Greek philosophy, and how they are addressed by the Presocratics, Plato, Aristotle, and the Stoics. We will have two related ends: historical and critical. On the one hand, we will get clear so far as we are able what it is that these thinkers thought; on the other, it is important to evaluate their arguments. This course will emphasize the identification of the problems and the solutions to them that seemed pressing to these thinkers, especially if such problems seem alien to us.

Fall PHIL0110 S01 17171 MWF 9:00-9:50(09) (E. Kress)

PHIL 0200H. Contemporary Ethical Issues.

Are we morally obligated to reduce greenhouse gas emissions? Do we have moral obligations toward nature, animals and other people, for instance future generations and refugees? Is abortion morally wrong? Is legalization of drugs the right thing to do? In this course we will explore these and other contemporary ethical issues in the context of important moral theories; utilitarianism, virtue ethics, and the social contract theory. This course will serve as an introduction to applied ethics and normative ethics.

Fall PHIL0200H S01 17172 MWF 11:00-11:50(16) (A. Bjurman Pautz)

PHIL 0210. Early Modern Philosophy.

An introduction to central themes in Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant. Major topics include: reason, experience, and knowledge; substance and the nature of the world as it really is; induction, causation, and the origin of our ideas; skepticism, realism, and idealism. Connections are made with the scientific revolution of the 17th century. There will be discussion and advice on ways to approach philosophical reading, research and writing.

Spr PHIL0210 S01 25576 MWF 11:00-11:50(04) (J. Broackes)

PHIL 0352. Introduction to 19th Century Philosophy.

This course is an introduction to classic texts of 19th century German philosophy. Readings include key texts by Kant, Schopenhauer, Hegel, Marx, and Nietzsche. The course explores the German idealist response to Kant as well as Marx's and Nietzsche's challenges to the project of philosophy and traditional conceptions of reason, morality, and agency.

Spr PHIL0352 S01 26399 TTh 2:30-3:50(04) (B. Beizaei)

PHIL 0401. Ethics of Digital Technology.

As the capacities of digital technology have increased, it has entered (almost) every domain of our lives. Algorithmic models, Artificial Intelligence, and everyday processing of vast amounts of data increasingly shape both our private choices and opportunities, and also our interactions in the public sphere. These developments raise new ethical and normative political questions and prompt us to examine the role of values such as freedom, autonomy, equality, and privacy in the digital sphere. How should a self-driving car behave when a crash is unavoidable? Are engineers responsible for the decisions of artificially-intelligent systems? What is the value of privacy in a world that increasingly depends on large amounts of data about customers, citizens, or patients? How does the algorithmic curating of content relate to freedom of expression? These and other topics will be the focus of this course.

Fall PHIL0401 S01 17174 MWF 10:00-10:50(14) (J. Netter)

Spr PHIL0401 S01 26548 MWF 9:00-9:50(02) (J. Netter)

PHIL 0555. Choice, Commerce, and Conflict: An Introduction to PPE.

This interdisciplinary course provides an overview of some of the core conceptual tools used to analyze issues at the intersection of philosophy, politics, and economics (PPE). A range of theoretical topics are covered, including: game theory, property, markets, distributive justice, public choice theory, voting, and more. We will read classical and contemporary sources on these topics as well as explore their applications to contemporary social problems (including: climate change, healthcare rationing, price gouging, universal basic income, pharmaceutical regulations, and others).

Spr PHIL0555 S01 25578 TTh 9:00-10:20(05) (R. Doody)

PHIL 0560. Political Philosophy.

An analytic investigation of some central problems and topics in political philosophy, including political obligation and civil disobedience, liberty, rights, equality, and democracy. Readings are drawn from recent work in the field, along with a few classics.

Fall PHIL0560 S01 17170 TTh 10:30-11:50(13) (D. Estlund)

PHIL 0640. Logic.

An introduction to perhaps the most fundamental tool of rational thought: deductive logic. Course begins with basic sentential logic, then moves on to deduction, quantification, and predication. Argumentation and reasoning may also be addressed at times. No previous experience with logic or philosophy is required.

Fall PHIL0640 S01 17169 MWF 2:00-2:50(01) (E. Guindon)

PHIL 0990F. Perception.

This is an undergraduate seminar on the philosophy of perception intended primarily for junior and senior concentrators. Topics include: naive realist versus representational theories of sensory experience, the possibility that sensory experience is massively illusory (so that we already occupy a kind of "virtual reality"), the role of the brain in shaping sensory experience, and the alleged foundational role of sensory experience in knowledge. The focus will be on vision but we will also discuss other sense-modalities. Prerequisite: at least 2 previous courses in philosophy.

Fall PHIL0990F S01 17176 TTh 1:00-2:20(06) (A. Pautz)

PHIL 0990V. Current Questions About Rational Belief.

We'll study some "hot topics" in epistemology. Some possible questions: (1) What's the relationship between rational belief and logic? (2) Is belief best thought as all-or-nothing, as coming in gradations, or both? (3) Can the same evidence support divergent belief-states? (4) Is rational belief completely determined by evidence, or also by values or practical interests? (5) Are graded beliefs best seen as coming in precise degrees, or as more "spread-out"? (6) Can I have rational beliefs I know are denied by others just as intelligent, unbiased, well-informed, etc., as I am? Enrollment limited to 20 juniors and seniors.

Fall PHIL0990V S01 17175 W 3:00-5:30(10) (D. Christensen)

PHIL 1012. Climate Ethics.

Climate change challenges our way of life and our institutions. The impact of climate change is not the same all over the globe. Developing countries may suffer worse consequences than wealthier countries. At the same time wealthier countries are responsible for most of the greenhouse gas emissions. Maybe we can mitigate or adapt to climate change, but the question whether we should do something about climate change is an ethical question. The ethical question is complex. Who is morally responsible for climate change? Individuals? States and nations? Can past generations be held responsible for their greenhouse gas emissions? Do we have moral obligations toward future generations? Should all countries bear the burden of climate change equally?

Spr PHIL1012 S01 25587 TTh 10:30-11:50(09) (A. Bjurman Pautz)

PHIL 1155. Hellenistic Ethics.

The philosophers we'll read in this course have a lot of advice for us. Epicurus recommends that we "[g]et used to believing that death is nothing to us" (Letter to Menoeceus, trans. Inwood and Gerson). Epictetus tells us: "Do not seek to have events happen as you want them to, but instead want them to happen as they do happen, and your life will go well" (Handbook 8, trans. White). Lucretius describes at length the "ills" that are "experienced in love that is steadfast and supremely successful"—and adds that "when love is frustrated and unrequited, the miseries you can spot with your eyes shut are countless" (On the Nature of Things 4, trans. Ferguson Smith). What are we to make of all this advice? And what's behind it?

Fall PHIL1155 S01 17414 MWF 1:00-1:50(08) (E. Kress)

PHIL 1220. 17th Century Continental Rationalism.

The course will focus on the principle of sufficient reason and involve a close reading of Spinoza's Ethics, along with other texts from Leibniz, Schopenhauer, Heidegger, and some contemporary writers.

Spr PHIL1220 S01 25585 TTh 9:00-10:20(07) (B. Beizaei)

PHIL 1231. British Empiricists.

Locke, Boyle and Margaret Cavendish. A detailed study both historical and critical. Topics include a selection from: innate ideas; substance; personal identity; language, classification; chemistry, 'corpuscles', and the nature of matter; challenges and hopes for natural philosophy; perception, skepticism

Fall PHIL1231 S01 17308 TTh 2:30-3:50(12) (J. Broackes)

PHIL 1240. Kant's Moral Philosophy.

An introduction to the central themes of Kant's moral philosophy, including autonomy, freedom, happiness, obligation, and virtue. Kant's position in the history of moral philosophy will also be considered. Readings to include all of Kant's major writings in this field, thus Groundwork for the Metaphysics of Morals, Critique of Practical Reason, Religion within the Boundaries of Mere Reason, and Metaphysics of Morals, as well as several essays and lectures. Work will include two short papers and one term paper.

Fall	PHIL1240	S01	17180	TTh	9:00-10:20(05)	(B. Beizaei)

PHIL 1430. Moral Theories.

A systematic examination of the main alternative normative moral theories: consequentialism; moral rights; moral duties; moral virtues. Focuses on the principal issues in the formulation of the different theories, on the main points of conflict between them, and on the critical evaluation of each. Readings are drawn mainly from contemporary work in moral philosophy.

Spr	PHIL1430	S01	25586	TTh	1:00-2:20(08)	(N. Arpaly)

PHIL 1440. The Nature of Morality.

Investigates major theories and issues concerning the nature of moral value. Readings from 20th-century authors. Issues include naturalism, supervenience, moral motivation, subjectivity/objectivity of value, skepticism, moral relativism, and moral realism.

Spr	PHIL1440	S01	25588	TTh	1:00-2:20(08)	(J. Dreier)

PHIL 1501. Well-Being.

In this course, we map out and examine the various dimensions of the domain of prudential value, or what pertains to well-being. We begin with important features of the concept of prudential value itself, such as subject-relativity, the experience requirement, and the categories of prudential value (e.g., subjectivist and objectivist). We examine classic theories of well-being: hedonistic, desire, and eudaimonistic theories, as well as new theoretical options (internalist and constitutivist theories). Then we consider different varieties of prudential goods, including happiness, meaningfulness, achievement. Finally, we look at questions of the proper scope of prudential value, in particular whether it is best understood as a property of a whole life.

Spr	PHIL1501	S01	26626	TTh	2:30-3:50(11)	(B. Reginster)

PHIL 1655. Philosophical Logic.

An examination of various philosophical issues arising in the foundations of logic, such as the following: existence, definite description, reference and truth, semantic paradoxes, implication and presupposition, modalities and "possible worlds," logical truth, the nature of logical knowledge, and logic in natural language.

Spr	PHIL1655	S01	25580	MWF	10:00-10:50(03)	(E. Guindon)

PHIL 1735. Metaphysics.

A survey of some major topics in metaphysics, with a particular focus on radical metaphysical arguments – arguments that call into question our most basic beliefs about the world. Topics covered may include: What is personal identity? Does personal identity matter? Do personal identity and consciousness matter? Is there right and wrong and objective value? Is there free will? Are there any good arguments for God? Prerequisite: at least one course in philosophy (2 or more preferred).

Spr	PHIL1735	S01	25584	MWF	1:00-1:50(06)	(A. Pautz)

PHIL 1775. Philosophy of Quantum Mechanics.

An examination of philosophical issues informed by elementary quantum mechanics; topics include the measurement problem, superposition, non-locality, and competing "interpretations" of the textbook formalism.

Spr	PHIL1775	S01	25581	M	3:00-5:30(13)	(E. Miller)

PHIL 1850. Philosophy of Language.

How is language used both to express and to communicate our beliefs and other thoughts? What is the relation between the meaning of a sentence and the meanings of the words that comprise it? We will discuss philosophical work on these and related questions including, potentially: the meanings of metaphors; the way meaning depends upon context; the nature of slurs and hate speech.

Fall	PHIL1850	S01	17177	MWF	12:00-12:50(15)	(R. Heck)

PHIL 1990. Independent Studies.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHIL 1995. Senior Thesis.

An elective for students writing a thesis. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHIL 2000. Graduate Proseminar.

Will cover classics of philosophy from the end of the 19th century to the end of the 20th; including ethics as well as metaphysics, epistemology and philosophy of language.

Fall	PHIL2000	S01	17182	MWF	8:00-8:50(17)	(J. Schechter)

Spr	PHIL2000	S01	25589	MWF	9:00-9:50(02)	(N. Arpaly)

PHIL 2010. Third Year Workshop.

No description available.

Spr	PHIL2010	S01	25591	M	3:00-5:30(13)	(A. Pautz)

PHIL 2020. Dissertation Workshop.

Course for graduate students during their 4th year or above.

Fall	PHIL2020	S01	17183	MWF	9:00-9:50(09)	(J. Dreier)

Spr	PHIL2020	S01	25590	MWF	8:00-8:50(14)	(E. Miller)

PHIL 2061. Intentionality: Beliefs, Concepts, and Linguistic Meanings.

Intentionality is a property possessed by mental entities that are about, directed on, or represent things other than themselves. Beliefs and concepts are paradigm cases of intentional entities. The goals of the course are, first, to inquire into the metaphysical nature of beliefs and concepts, second, to examine what it means for beliefs and concepts to be about or represent objects, properties, and facts, and third, to explore the relationships between beliefs and concepts and linguistic meanings.

Spr	PHIL2061	S01	25767	W	3:00-5:30(10)	(C. Hill)

PHIL 2106. Plato on Pleasure and the Good Life.

This seminar will focus on Plato's Philebus: his investigation of pleasure, knowledge, and the good life. The Philebus is an ethical dialogue, which also explores method, metaphysics, cosmology, and epistemology, with fascinating treatments of sound and color. We aim to discuss the dialogue in detail and to consider relevant passages in other dialogues, such as perception and judgment in the Theaetetus, falsehood in the Sophist, two arts of measurement in the Statesman, the Good in the Republic, and perception and perceptible qualities in the Timaeus. Our questions include: what method is advocated in the Philebus and how does it relate to similar methods in the Phaedrus, Sophist, and Statesman? Plato's Socrates plays with the notions of limit, unlimited, mixture, and cause. How do those notions contribute to his investigation of pleasure, knowledge, and the good life?

Spr	PHIL2106	S01	26582	Th	4:00-6:30(17)	(M. Gill)

PHIL 2140K. Rationality.

This seminar focuses focus on recent literature about the nature of rationality. Questions to be discussed include: Why should we be rational (and what does that question even mean)? Can desires or emotions count as rational or irrational? Which mental states can count as rational and why? Is there a unified account of rationality across mental states? What is the relationship between "substantive rationality" and "structural rationality"?

Spr	PHIL2140K	S01	26116	W	3:00-5:30(10)	(J. Schechter)

PHIL 2150. Expressivism.

Historical and contemporary topics in metaethical Expressivism, including: Geach's Problem; Truth Minimalism; Reasoning and Error with normative belief; Negation and Disagreement; Threats of collapse; Hybrid Expressivist theories; metametaethics and the Problem of Creeping Minimalism.

Fall	PHIL2150	S01	17949	Th	4:00-6:30(04)	(J. Dreier)

PHIL 2152. Agency.

The task of the philosophy of action was once described as telling the difference between a person's arm rising and a person raising his arm. Agency is the property of being a creature who acts. This course is an exploration of agency. Questions to be discussed: What is the difference between things we do and things that happen to our bodies or our minds? Is there something special about humans acting as opposed to, say,

cats who do things? What does it mean to act rationally and respond to reasons? Do we really decide which desire to act on, or does the strongest one always win? What happens in cases of drug addiction and other mental disorders? Can you intend to do something you don't know you'll do? Where does moral responsibility come in? How can you deceive yourself?

Fall	PHIL2152	S01	17948	M	3:00-5:30(03)	(N. Arpaly)

PHIL 2450. Exchange Scholar Program.

Fall	PHIL2450	S01	16606	Arranged	'To Be Arranged'
Fall	PHIL2450	S02	16607	Arranged	'To Be Arranged'
Fall	PHIL2450	S03	16608	Arranged	'To Be Arranged'
Spr	PHIL2450	S01	25263	Arranged	'To Be Arranged'

PHIL 2515. Group Agency.

Many believe that the U.S. was wrong to invade Iraq in 2003. Can the country itself be guilty of a wrong, or is that just loose talk meant to summarize the wrongdoing of a bunch of individual Americans? More generally, it is common to think of some groups of people, as distinct from the individuals themselves, as believing, wanting, intending, or deciding certain things, and the group itself as being permitted, forbidden from doing certain things, or responsible or to blame for some of its actions. A related idea is so-called structural injustice (e.g., structural racism or sexism) in which a society is wrongful in its structures and institutions in some way irrespective of any wrongful individual members. In this seminar we will study the difficult philosophical problems each of these ideas raises.

Fall	PHIL2515	S01	17947	W	3:00-5:30(10)	(D. Estlund)

PHIL 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	PHIL2970	S01	16609	Arranged	'To Be Arranged'
Spr	PHIL2970	S01	25264	Arranged	'To Be Arranged'

PHIL 2980. Research in Philosophy.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHIL 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	PHIL2990	S01	16610	Arranged	'To Be Arranged'
Spr	PHIL2990	S01	25265	Arranged	'To Be Arranged'

PHIL XLIST. Courses of Interest to Philosophy Concentrators.

Physics

PHYS 0030. Basic Physics A.

Survey of mechanics for concentrators in sciences other than physics-including premedical and life science students. Students with more advanced math training are advised to take PHYS 0050, which covers the same topics in physics. Lectures and laboratory. Six hours of attendance.

Fall	PHYS0030	S01	10021	MWF	11:00-11:50(16)	'To Be Arranged'
Fall	PHYS0030	S02	10022	MWF	12:00-12:50(15)	'To Be Arranged'
Spr	PHYS0030	S01	20157	MWF	1:00-1:50(06)	'To Be Arranged'

PHYS 0040. Basic Physics B.

Survey of electricity, magnetism, optics, and modern physics for concentrators in sciences other than physics-including premedical students or students without prior exposure to physics who require a less rigorous course than PHYS 0050, 0060. Lectures, conferences, and laboratory.

Fall	PHYS0040	S01	10023	MWF	12:00-12:50(15)	'To Be Arranged'
Spr	PHYS0040	S01	20158	MWF	11:00-11:50(04)	'To Be Arranged'
Spr	PHYS0040	S02	20159	MWF	12:00-12:50(01)	'To Be Arranged'

PHYS 0050. Foundations of Mechanics.

An introduction to Newtonian mechanics that employs elementary calculus. Intended for science concentrators. Potential physics concentrators, who do not have adequate preparation for PHYS 0070, may enroll, but are urged to continue with PHYS 0160 rather than PHYS

0060. Lectures, conferences and laboratory. Six hours of attendance.

Recommended: MATH 0090 or MATH 0100.

Fall	PHYS0050	S01	10024	MW	8:30-9:50(09)	'To Be Arranged'

PHYS 0060. Foundations of Electromagnetism and Modern Physics.

An introduction to the principles and phenomena of electricity, magnetism, optics, and the concepts of modern physics. Recommended for those who wish to limit their college physics to two semesters but seek a firm grounding in the subject, including but not limited to those with some previous knowledge of physics. Lectures, conferences, and laboratory. Six hours of attendance. Prerequisite: PHYS 0050. Recommended: MATH 0100.

Spr	PHYS0060	S01	20160	MW	8:30-9:50(02)	'To Be Arranged'

PHYS 0070. Analytical Mechanics.

A mathematically more rigorous introduction to Newtonian mechanics than PHYS 0050. For first-year students and sophomores who have studied physics previously and have completed a year of calculus. Lectures, conferences, and laboratory. Six hours of attendance. Prerequisites: high school physics and calculus or written permission. S/NC

Fall	PHYS0070	S01	10204	MWF	9:00-9:50(09)	'To Be Arranged'

PHYS 0160. Introduction to Relativity, Waves and Quantum Physics.

A mathematically rigorous introduction to special relativity and quantum mechanics. The second course in the three-semester sequence (PHYS 0470 being the third) for those seeking the strongest foundation in physics. Also suitable for students better served by an introduction to modern physics rather than electromagnetism. Lectures, conferences, and laboratory. Six hours of attendance. Prerequisite: PHYS 0070 or 0050. Recommended: MATH 0180 or 0200. S/NC

Spr	PHYS0160	S01	20161	MWF	9:00-9:50(02)	'To Be Arranged'

PHYS 0220. Astronomy.

An introduction to basic ideas and observations in astronomy, starting with the observed sky, coordinates and astronomical calendars and cycles, the historical development of our understanding of astronomical objects. Particular emphasis is placed on the properties of stars, galaxies, and the Universe as a whole, including the basic ideas of cosmology. The material is covered at a more basic level than PHYS 0270. Knowledge of basic algebra and trigonometry is required, but no experience with calculus is necessary. The course includes evening laboratory sessions.

Spr	PHYS0220	S01	20162	TTh	10:30-11:50(09)	'To Be Arranged'

PHYS 0270. Astronomy and Astrophysics.

A complete survey of basic astronomy, more rigorous than is offered in PHYS 0220. Requires competence in algebra, geometry, trigonometry, and vectors and also some understanding of calculus and classical mechanics. Laboratory work required. This course or an equivalent required for students concentrating in astronomy. The course includes conferences and evening laboratory sessions.

Fall	PHYS0270	S01	10205	TTh	1:00-2:20(06)	'To Be Arranged'

PHYS 0470. Electricity and Magnetism.

Electric and magnetic fields. Motion of charged particles in fields. Electric and magnetic properties of matter. Direct and alternating currents. Maxwell's equations. Laboratory work. Prerequisites: PHYS 0040, 0060, or 0160; and MATH 0180, 0200 or 0350. Labs meet every other week.

Fall	PHYS0470	S01	10206	MWF	10:00-10:50(14)	'To Be Arranged'

PHYS 0500. Advanced Classical Mechanics.

Dynamics of particles, rigid bodies, and elastic continua. Normal modes. Lagrangian and Hamiltonian formulations. Prerequisites: PHYS 0070, 0160 or 0050, 0060 and MATH 0180 or 0200; or approved equivalents.

Spr	PHYS0500	S01	20164	MWF	10:00-10:50(03)	'To Be Arranged'

PHYS 0560. Experiments in Modern Physics.

Introduction to experimental physics. Students perform fundamental experiments in modern quantum physics, including atomic physics, nuclear and particle physics, and condensed matter physics. Visits to research labs at Brown acquaint students with fields of current research. Emphasizes laboratory techniques, statistics, and data analysis. Three lecture/discussion hours and three laboratory hours each week. Required of all physics concentrators. Prerequisites: PHYS 0070, 0160 or 0050, 0060; 0470.

Spr	PHYS0560	S01	20165	MWF	11:00-11:50(04)	'To Be Arranged'

PHYS 0720. Methods of Mathematical Physics.

This course is designed for sophomores in physical sciences, especially those intending to take sophomore or higher level Physics courses. Topics include linear algebra (including linear vector spaces), Fourier analysis, ordinary and partial differential equations, complex analysis (including contour integration). Pre-requisites: PHYS 0060 or 0160, MATH 0180, 0200 or 0350, or consent of the instructor.

Fall PHYS0720 S01 10207 TTh 1:00-2:20(06) 'To Be Arranged'

PHYS 0790. Physics of Matter.

An introduction to the principles of quantum mechanics and their use in the description of the electronic, thermal, and optical properties of materials. Primarily intended as an advanced science course in the engineering curriculum. Open to others by permission. Prerequisites: ENGN 0040, APMA 0340 or equivalents.

Fall PHYS0790 S02 10225 TTh 2:30-3:50(12) 'To Be Arranged'

PHYS 1100. General Relativity.

An introduction to Einstein's theory of gravity, including special relativity, spacetime curvature, cosmology and black holes. Prerequisites: PHYS 0500 and MATH 0520 or MATH 0540 or equivalent, or permission of the instructor. Recommended: PHYS 0720. Offered every other year.

Spr PHYS1100 S01 20166 TTh 9:00-10:20(05) 'To Be Arranged'

PHYS 1280. Introduction to Cosmology.

The course presents an introduction to the study of the origin, evolution and contents of the Universe. Topics include the expansion of the Universe, relativistic cosmologies, thermal evolution, primordial nucleosynthesis, structure formation and the Cosmic Microwave Background. Prerequisites: PHYS 0160, MATH 0190, MATH 0200, or MATH 0350, or instructor permission.

Fall PHYS1280 S01 10224 MWF 2:00-2:50(01) 'To Be Arranged'

PHYS 1410. Quantum Mechanics A.

A unified treatment of quanta, photons, electrons, atoms, molecules, matter, nuclei, and particles. Quantum mechanics developed at the start and used to link and explain both the older and newer experimental phenomena of modern physics. Prerequisites: PHYS 0500 and 0560; and MATH 0520, 0540 or PHYS 0720; or approved equivalents.

Fall PHYS1410 S01 10211 MWF 9:00-9:50(09) 'To Be Arranged'

PHYS 1420. Quantum Mechanics B.

See Quantum Mechanics A, (PHYS 1410) for course description.

Spr PHYS1420 S01 20170 MWF 9:00-9:50(02) 'To Be Arranged'

PHYS 1510. Advanced Electromagnetic Theory.

Maxwell's laws and electromagnetic theory. Electromagnetic waves and radiation. Special relativity. Prerequisites: PHYS 0470; and MATH 0180, 0200, or 0350; or approved equivalents.

Fall PHYS1510 S01 10212 TTh 9:00-10:20(05) 'To Be Arranged'

PHYS 1530. Thermodynamics and Statistical Mechanics.

The laws of thermodynamics and heat transfer. Atomic interpretation in terms of kinetic theory and elementary statistical mechanics. Applications to physical problems. Prerequisites: MATH 0180 or 0200 or 0350. Corequisite: PHYS 1410.

Fall PHYS1530 S01 10213 MWF 1:00-1:50(08) 'To Be Arranged'

PHYS 1560. Modern Physics Laboratory.

A sequence of intensive, advanced experiments often introducing sophisticated techniques. Prerequisites: PHYS 0470, 0500 and 0560; and MATH 0520, 0540 or PHYS 0720; or approved equivalents.

Spr PHYS1560 S02 20172 TTh 9:00-10:20(05) 'To Be Arranged'

PHYS 1600. Computational Physics.

This course provides students with an introduction to scientific computation, primarily as applied to physical science problems. It will assume a basic knowledge of programming and will focus on how computational methods can be used to study physical systems complementing experimental and theoretical techniques. Prerequisites: PHYS 0070, 0160 (or 0050, 0060) and 0470 (or ENGN 0510); MATH 0180 or 0200 or 0350; the ability to write a simple computer program in Fortran, Matlab, C or C++.

Spr PHYS1600 S01 20183 TTh 1:00-2:20(08) 'To Be Arranged'

Spr PHYS1600 S02 26329 TTh 9:00-10:20(05) 'To Be Arranged'

PHYS 1610. Biological Physics.

Introduction on structures of proteins, nucleotides, and membranes; electrostatics and hydration; chemical equilibrium; binding affinity and kinetics; hydrodynamics and transport; cellular mechanics and motions; biophysical techniques including sedimentation, electrophoresis, microscopy and spectroscopy. Suitable for undergraduate science and engineering majors and graduate students with limited background in life science. Prerequisites: MATH 0180.

Fall PHYS1610 S01 10227 TTh 2:30-3:50(12) 'To Be Arranged'

PHYS 1720. Methods of Mathematical Physics.

Designed primarily for sophomore students in physical sciences. Basic elements of and practical examples in linear algebra, the solution of ordinary and Partial Differential Equation, Complex Analysis and Application to Contour Integrals. Intended to prepare students for the mathematics encountered in PHYS 0500, 1410, 1420, 1510 and 1530. Pre-requisites: PHYS 0060 or 0160, MATH 0180, 0200 or 0350, or consent of the instructor.

Fall PHYS1720 S01 10208 TTh 1:00-2:20(06) 'To Be Arranged'

PHYS 1980. Undergraduate Research in Physics.

Designed for undergraduates to participate, individually or in small groups, in research projects mentored by the physics faculty. Students must have taken one year of college level physics. An average of 8 to 10 hours per week of guided research is required as are weekly meetings with the supervising faculty member. Students should consult with faculty to find a mutually agreeable research project and obtain permission to enroll. Section number varies by instructor (students must register for the appropriate section).

PHYS 1990. Senior Conference Course.

Preparation of thesis project. Required of candidates for the degree of bachelor of science with a concentration in physics. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHYS 2010. Techniques in Experimental Physics.

No description available.

Fall PHYS2010 S01 10215 TTh 10:30-11:50(13) 'To Be Arranged'

Spr PHYS2010 S01 20173 TTh 10:30-11:50(09) 'To Be Arranged'

PHYS 2020. Mathematical Methods of Engineers and Physicists.

An introduction to methods of mathematical analysis in physical science and engineering. The first semester course includes linear algebra and tensor analysis; analytic functions of a complex variable; integration in the complex plane; potential theory. The second semester course includes probability theory; eigenvalue problems; calculus of variations and extremum principles; wave propagation; other partial differential equations of evolution.

Fall PHYS2020 S01 10216 TTh 10:30-11:50(13) 'To Be Arranged'

PHYS 2030. Classical Theoretical Physics I.

No description available.

Fall PHYS2030 S01 10217 TTh 9:00-10:20(05) 'To Be Arranged'

PHYS 2040. Classical Theoretical Physics II.

No description available.

Spr PHYS2040 S01 20174 MWF 10:00-10:50(03) 'To Be Arranged'

PHYS 2050. Quantum Mechanics.

No description available.

Fall PHYS2050 S01 10218 MW 8:30-9:50(09) 'To Be Arranged'

PHYS 2060. Quantum Mechanics.

No description available.

Spr PHYS2060 S01 20175 MW 8:30-9:50(02) 'To Be Arranged'

PHYS 2070. Advanced Quantum Mechanics.

No description available.

Fall PHYS2070 S01 10220 MWF 11:00-11:50(16) 'To Be Arranged'

PHYS 2100. General Relativity.

This graduate course in general relativity and cosmology will cover the principles of Einstein's general theory of relativity, differential geometry, the first order formulation of general relativity (Einstein-Cartan theory), experimental tests of general relativity and black holes. The second half of

the course will focus on relativistic cosmology with a focus on its interface with field theory.

Spr	PHYS2100	S01	20167	TTh	9:00-10:20(05)	'To Be Arranged'

PHYS 2140. Statistical Mechanics.

No description available.

Spr	PHYS2140	S01	20177	TTh	1:00-2:20(08)	'To Be Arranged'

PHYS 2170. Introduction to Nuclear and High Energy Physics.

No description available.

Spr	PHYS2170	S01	20178	MWF	12:00-12:50(01)	'To Be Arranged'

PHYS 2280. Astrophysics and Cosmology.

This course serves as a graduate-level introduction to modern cosmology, including current topics of research on both observational and theoretical fronts. Topics include relativistic cosmology, inflation and the early Universe, observational cosmology, galaxy formation. Prerequisites for undergraduates: PHYS 1280 and PHYS 1530.

Spr	PHYS2280	S01	20179	MWF	1:00-1:50(06)	'To Be Arranged'

PHYS 2300. Quantum Theory of Fields I.

No description available.

Spr	PHYS2300	S01	20180	TTh	2:30-3:50(11)	'To Be Arranged'

PHYS 2320. Quantum Theory of Fields II.

No description available. Instructor permission required.

Fall	PHYS2320	S01	10221	TTh	2:30-3:50(12)	'To Be Arranged'

PHYS 2340. Group Theory.

Offered every other year.

Spr	PHYS2340	S01	20181	TTh	10:30-11:50(09)	'To Be Arranged'

PHYS 2410. Solid State Physics I.

No description available.

Fall	PHYS2410	S01	10222	MWF	1:00-1:50(08)	'To Be Arranged'

PHYS 2420. Solid State Physics II.

The goal of the course is to explain the effects of interactions between the electrons on the properties of quantum materials. In particular, upon completing the course you will acquire deep understanding of the physics of conductors, symmetry broken phases and strongly interacting topological phases such as Hall effect. We will particularly concentrate on the phenomenology of these systems.

Spr	PHYS2420	S01	26328	TTh	1:00-2:20(08)	'To Be Arranged'

PHYS 2450. Exchange Scholar Program.

Fall	PHYS2450	S01	16613	Arranged		'To Be Arranged'

Fall	PHYS2450	S02	16614	Arranged		'To Be Arranged'

Spr	PHYS2450	S01	25267	Arranged		'To Be Arranged'

PHYS 2470. Advanced Statistical Mechanics.

No description available.

Fall	PHYS2470	S01	10226	TTh	10:30-11:50(13)	'To Be Arranged'

PHYS 2550. Applied Machine Learning and AI.

This graduate-level course explores the integration of machine learning (ML) and artificial intelligence (AI) techniques in various branches of physics. With a focus on practical applications, students will gain hands-on experience in leveraging ML and AI to solve complex problems, enhance data analysis, and optimize experimental design in the context of particle physics, astrophysics, and condensed matter physics.

Spr	PHYS2550	S01	25837	TTh	2:30-3:50(11)	'To Be Arranged'

PHYS 2600. Computational Physics.

This course provides students with an introduction to scientific computation at the graduate level, primarily as applied to physical science problems. It will assume a basic knowledge of programming and will focus on how computational methods can be used to study physical systems complementing experimental and theoretical techniques. Prerequisites: PHYS 2030, 2050, 2140; the ability to write a simple computer program in Fortran, Matlab, C or C++.

Spr	PHYS2600	S01	20182	TTh	9:00-10:20(05)	'To Be Arranged'

PHYS 2630. Biological Physics.

The course is the graduate version of Phys 1610, Biological Physics. The topics to be covered include structure of cells and biological molecules; diffusion, dissipation and random motion; flow and friction in fluids;

entropy, temperature and energy; chemical reactions and self-assembly; solution electrostatics; action potential and nerve impulses. The graduate level course has additional pre-requisites of Phys 0470 and 1530, or equivalents. It requires homework assignments at the graduate level. The final grades will be assigned separately from those who take the course as Phys 1610, although the two groups may be taught in the same classroom.

Fall	PHYS2630	S01	10228	TTh	2:30-3:50(12)	'To Be Arranged'

PHYS 2710. Seminar in Research Topics.

Instruction via reading assignments and seminars for graduate students on research projects. Credit may vary. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHYS 2711. Seminar in Research Topics.

See Seminar In Research Topics (PHYS 2710) for course description. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHYS 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	PHYS2970	S01	16616	Arranged		(L. Gouskos)

Spr	PHYS2970	S01	25269	Arranged		(L. Gouskos)

PHYS 2980. Research in Physics.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHYS 2981. Research in Physics.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHYS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	PHYS2990	S01	16617	Arranged		'To Be Arranged'

Spr	PHYS2990	S01	25270	Arranged		'To Be Arranged'

Political Science

POLS 0010. Introduction to the American Political Process.

This course is designed to be an introduction to the American political process, broadly defined. We will cover topics including but not limited to: Constitution, Federalism, Federal Budget, Congress, Presidency, Bureaucracy, Judiciary, Civil Rights, Civil Liberties, Public Opinion, Media, Interest Groups, Political Parties, Campaigns, Elections, and Participation.

Spr	POLS0010	S01	25345	TTh	9:00-10:20(05)	(M. Zarate)

POLS 0110. Introduction to Political Thought.

What is justice? What is freedom? What is the basis of political authority? What is the nature of the best regime? Why should we obey the laws? When may we legitimately resist? These and other perennial questions of political life are explored. Readings includes Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Marx, and J.S. Mill.

Fall	POLS0110	S01	16818	TTh	10:30-11:50(13)	(A. Gourevitch)

POLS 0200. Introduction to Comparative Politics.

Introduces students to the sub-field of comparative politics or politics within states. Topics include types of regimes (i.e., democratic, authoritarian-with-adjectives, totalitarian); transitions to democracy; collapse of democratic regimes; democratizing, revolutionary and ethnic challenges to the state; and globalization. The course also pays attention to modes of analysis in comparative politics. Cases will be drawn from various regions, including Western and Eastern Europe, Asia, Africa, the Middle East, and Latin America.

Spr	POLS0200	S01	25346	TTh	1:00-2:20(08)	(G. Dipoppa)

POLS 0400. Introduction to International Politics.

This course provides a basic introduction to the central theoretical perspectives and debates in international relations. The second part of the course applies these models to current problems in international relations, including globalization, state failure, humanitarian intervention, NGOs,

terrorist networks, environmental issues, and possible future change in international politics.

Fall POLS0400 S01 16819 MWF 11:00-11:50(16) (N. Tannenwald)

POLS 0500. Foundations of Political Analysis.

This course provides an introduction for undergraduate students to the methods that political scientists (and other social scientists) use to generate and answer questions about the world around us. This course will provide you with the tools to evaluate critically social science research, and it will improve your ability to pose and answer research questions of your own. Both quantitative and qualitative approaches are covered. Not open to first year students.

Fall POLS0500 S01 16820 TTh 9:00-10:20(05) (R. Weitz-Shapiro)

POLS 0820U. Drug War Politics.

This seminar examines the politics, practice, and consequences of government efforts to regulate mind-altering substances since the early 20th century. Although much of the focus is on the contemporary United States and Latin America, the coverage is broadly historical, comparative, and global. The main drugs focused on are cocaine, opium, and cannabis, but will include alcohol, tobacco, and synthetics. The course also evaluates policy alternatives and the obstacles to policy reform. The course draws on readings from fields such as political science, anthropology, criminology, and history. The seminar is reading intensive, and is designed to cultivate critical writing and presentation skills. Enrollment limited to 19 first year students.

Spr POLS0820US01 25343 M 3:00-5:30(13) (P. Andreas)

POLS 0821C. Political Violence.

Why do civil wars begin and end? Which people join rebellions? Why do states and non-state groups hurt civilians? What are the differences between rebel groups, terrorist organizations, and organized criminal groups? The seminar-based class aims introduce students to theories about and cases of political violence. It primarily draws on research in Political Science, though it also includes work from Economics, History, and Philosophy.

Fall POLS0821CS01 18838 M 3:00-5:30(03) (G. Levy)

POLS 0821D. How to Think in an Age of Polarized Politics.

Americans today live in a time of deep political polarization, cultural tribalism, and self-segregation. Those with whom we have deep disagreements, assuming we interact with them at all, are often viewed as not just wrong but as irrational, immoral, or even contemptible. What are the causes and costs of these trends? What remedies might exist? Are there habits of mind that we might cultivate to build better citizens and a healthier democracy? This course develops and applies these habits of mind through conversations on a series of political topics. As a first-year seminar with discussion, this course will provide students with the tools of critical thinking and civil discourse that allow scholarly engagement and intellectual growth at Brown and beyond.

Spr POLS0821DS01 25873 M 3:00-5:30(13) (D. Skarbek)

POLS 0821E. Money and International Politics.

There's a common saying that "money makes the world go round," but few people truly understand how money works. In this course you'll explore the politics of money, investigating topics such as financial crises, the role of the central banks in managing money, and the rise of cryptocurrency. You'll also learn how to write about money and politics for different audiences, everyone from scholars and policymakers to everyday people who lack basic financial expertise. If you—like many people—find money fascinating, this course is for you. This course is for first- and second-year students and assumes no background in political science. Together we will develop a shared base of knowledge to debate the critical questions that continue to shape world politics.

Fall POLS0821ES01 17523 T 4:00-6:30(07) (A. Sahasrabudhe)

POLS 0920K. The Black Vote: A Critical Interrogation of a Concept.

"The Black Vote" as a concept, simultaneously captures a truth and distortion. It reflects the truth that no other racial group comes close to the uniformity of Black Americans' voting behavior within American electoral politics. Yet, this truth distorts or obscures the diversity of political opinions and ideological dispositions that animate a dynamic black American public. This course examines "the Black vote" through analyzing the historical

context of its emergence and the host of contemporary democratic dilemmas that surround its persistence.

Fall POLS0920KS01 18241 T 4:00-6:30(07) (A. LeSure)

POLS 0920L. Slavery and Freedom: Selections from African American Political Thought.

This course grapples with the problem of slavery and its connection to the political and psychological logic of white supremacy. Students will critically interrogate America's attempt to grapple with black pain and white guilt. The course will also explore and critically evaluate the various responses African Americans have offered in their quest to realize freedom. We will see that African American political thought is not exclusively a response to social and political domination, but also contains a rich philosophical vision of human fulfillment, self-governance, and the good life. NO PREREQUISITES REQUIRED.

Fall POLS0920L S01 18344 W 3:00-5:30(10) (M. Rogers)

POLS 1015. Politics and Nature.

Examines the relationship between human beings and the earth as it has been conceived in the tradition of Western political thought from the ancient Greeks to the present day. The first part of the course draws from the history of political thought to understand the background against which our contemporary environmental problems have evolved and the conceptual resources that current theory draws from. The second part of the course investigates environmental political theory at the cutting edge today, engaging a wide range of perspectives and methods in the field.

Spr POLS1015 S01 25347 MW 8:30-9:50(02) (S. Krause)

POLS 1020. Politics of the Illicit Global Economy.

This course is about the "underside" of globalization. It introduces key sectors of the illicit global economy, including the clandestine flow of drugs, arms, people, body parts, arts and antiquities, endangered species, and toxic waste. The course compares these illicit sectors across time and place, and evaluates the practice and politics of state regulatory efforts. Particular attention is given to the role of the U.S. in the illicit global economy.

Fall POLS1020 S01 16821 MWF 10:00-10:50(14) (P. Andreas)

POLS 1065. Participating American Publics.

In this lecture course, we will explore the reasons that civic and political participation are important for democracy and self-determination as well as the multiple possible pathways - many of which are beyond the ballot box - for engaging in participation. We will also examine who participates, who's participation is impeded and why, as well as what social structures are, what barriers to participation exist, how such barriers can be understood as systematic, and what happens in democracies when people are denied the opportunity to participate or - for a variety of reasons - refuse to participate.

Fall POLS1065 S01 18346 MWF 11:00-11:50(16) (D. Woody)

POLS 1100. U.S. Congress.

The Founders established the U.S. Congress in Article I of the Constitution. It created that body as guardian of the nation's purse strings and empowered it to "make all laws necessary and proper." Will examine the Congress's structure, rules and procedures, traditions, precedents, campaigns, elections, parties, budget process, Member's constituencies and role in the system of checks and balances with the president and the courts. The impact of procedure on policy outcomes and the impacts of the 2020 election on the House and Senate will be explored. The course will consistently relate the characteristics and history of Congress to current events.

Spr POLS1100 S01 25726 MWF 1:00-1:50(06) (R. Arenberg)

POLS 1120. Campaigns and Elections.

This course will focus on both historical and contemporary elections at the congressional, state and local and presidential levels, emphasizing the 2020 elections. Topics include campaigns, parties, candidates, voting behavior, public opinion, polling, campaign finance, voting rights, the electoral college, gerrymandering and the media.

Fall POLS1120 S01 17306 TTh 1:00-2:20(06) (R. Arenberg)

POLS 1130. The American Presidency.

The origins and evolution of the Presidency in the American political and policy-making system. Special emphasis on the impact of presidential policies from Franklin Delano Roosevelt through Donald Trump; the

presidential nomination and general election system with special focus on the 2020 election; and an exploration of the future challenges facing the winner of the 2020 Presidential election. The course will consistently relate the characteristics and history of the presidency to current events.

Spr POLS1130 S01 25727 MWF 2:00-2:50(07) (R. Arenberg)

POLS 1140. Public Opinion and American Democracy.

Public opinion is an essential component of democracy. Considering the lack of familiarity about current events, how does public opinion affect public policy? Perhaps more importantly, should it? To assess these questions, we will explore how to measure public opinion and what polls tell us. We will then assess the roots of public opinion and analyze the public policy and representational impact of people's preferences.

Fall POLS1140 S01 16822 MWF 2:00-2:50(01) (P. Testa)

POLS 1210. Latin American Politics.

Focuses on political and economic transformation in contemporary Latin America. Special attention is given to the processes of market-oriented economic reforms and democratization that have swept the region during the last twenty-five years. Includes in-depth country case studies where key themes can be discussed and elaborated.

Fall POLS1210 S01 16823 MWF 2:00-2:50(01) (R. Snyder)

POLS 1280. Politics, Economy and Society in India.

This course will concentrate on three aspects of the "Indian experience": democracy, ethnic and religious diversity, and political economy. With a brief exception, India has continued to be democratic since 1947. No developing country matches India's democratic record. Second, remarkable cultural, ethnic and religious diversity marks India's social landscape, and influences its politics. Third, Indian economy has of late been going through a serious economic transformation, drawing comparisons with China. Is the comparison valid?

Spr POLS1280 S01 25348 TTh 2:30-3:50(11) (A. Varshney)

POLS 1290. The Rise of China.

This course examines the causes and consequences of China's societal transformation and emergence as a global power. Employing perspectives from comparative politics, international relations, and economics, the course explores the connections between China's domestic transformation and its integration with the global system. Lectures and readings cover the historical antecedents of China's rise, the contemporary relationship between state and citizen, the nature of China's global competitiveness, and likely future avenues for socio-political change.

Spr POLS1290 S01 25349 TTh 10:30-11:50(09) (E. Steinfeld)

POLS 1325. Political Organizations and Social Change in America.

Will examine efforts to create significant policy change in contemporary political and social life in United States. We examine strategies of social change; explore the characteristics of advocacy organizations; and consider how organizations can expand their political toolkits as they seek to create social change. In addition, we will examine the relationship between organizations, members, and activists. Why do so many organizations lack active members? What does it take to turn members into activists? Among the cases we examine are the Civil Rights Movement, the Tea Party, Alinsky organizations, Black Lives Matter, the Koch Brothers Network, Dreamers, and organized labor.

Fall POLS1325 S01 16825 MWF 10:00-10:50(14) (M. Weir)

POLS 1350. Chinese Foreign Policy.

The People's Republic of China is one of the most important actors in international politics today. This undergraduate lecture examines China's role in global affairs. It applies broad theoretical perspectives on international relations to understand China's choices across a broad range of foreign policy topic. What explains why China has increased its defense spending? When is it more likely to resort to military force? What explains patterns in China's trade and investment abroad? What accounts for China's changing approach to climate change? To what extent does China seek to reshape the international order and what would this mean for the prospects for global peace and stability?

Spr POLS1350 S01 25352 MWF 9:00-9:50(02) (T. Jost)

POLS 1390. Global Governance.

Examines the institutions and the processes by which states and other actors seek to provide "governance" in the international system. The class explores the history of, and various theoretical perspectives on, the

role of the UN and other international organizations in the state system.

It also considers their roles in a range of political, military, economic, environmental, and humanitarian issues. Pre-requisite: POLS 0400

Spr POLS1390 S01 25353 MWF 11:00-11:50(04) (N. Tannenwald)

POLS 1420. Money and Power in the International Political Economy.

Examines how the interaction of states and markets create distinct global monetary and political orders. Class analyzes the shift from the classical liberal Gold Standard through the Post-War Bretton Woods arrangements through to the globalized IPE of today.

Spr POLS1420 S01 25354 MWF 10:00-10:50(03) (M. Blyth)

POLS 1445. Contemporary African Politics.

This course introduces students to the study of contemporary African politics. The questions that motivate the course are: How did authoritarian regimes arise in most countries after African independence? Why have some African countries become democratic, while others have remained authoritarian? What accounts for patterns of conflict and civil war across countries? Throughout the semester, we will see that there is significant variation within Africa in the strength of states, levels of economic growth, and respect for democratic institutions; we will aim to explain these variations. We will primarily study events in particular African countries, but will also examine broad patterns across countries and use social science concepts and methods to try to explain them. In our exploration, we will mostly build on the work of political scientists but also draw heavily on work by journalists, psychologists, economists, and historians.

Fall POLS1445 S01 17307 MWF 9:00-9:50(09) (D. Choi)

POLS 1455. Crime, Punishment, and Politics.

This class uses theories and tools from the social sciences to understand criminal behavior in a variety of settings. It examines whether we can use rational choice theories to explain patterns of offending and the organization and operation of illicit markets. We will investigate the different way that governments seek to control crime, as well as, non-state alternatives to public safety. Organized crime groups have significant influence in communities both historically and today, so we study why they exist and how they organize. Finally, we look at how political institutions affect crime and the operation of the criminal legal system, including persistent problems of racial disparities at all points in the system.

Fall POLS1455 S01 18243 MWF 1:00-1:50(08) (D. Skarbek)

POLS 1460. International Political Economy.

An introduction to the politics of international economic relations. Examines the history of international political economy and theoretical approaches to understanding it. Also analyzes several key contemporary issues in international institutions such as the International Monetary Fund and World Trade Organization, globalization and its consequences, and challenges in foreign economic policy-making.

Fall POLS1460 S01 16830 TTh 1:00-2:20(06) (A. Sahasrabudhe)

POLS 1520. Introduction to Feminist Theory.

This course explores the history of feminist political thought. It provides an overview of the dominant approaches to feminist theory, and to the emergence and development of feminist movements in the U.S. and elsewhere. We will pay particular attention to the way intersectional feminist thinkers have challenged the centrality of gender in feminist analysis, and will assess the future of feminist praxis and theorizing. The course is organized around significant themes and debates within feminist theory, including but not limited to: early feminist approaches (such as liberal, Marxist, radical, and standpoint feminism); the theoretical implications of critiques of early feminist theory by black, indigenous and other intersectional feminists; and contemporary feminist formations such as trans and abolition feminisms.

Fall POLS1520 S01 16832 MWF 12:00-12:50(15) (J. Hooker)

POLS 1550. War and Politics.

This course provides an examination of the intersection between political ends and military means. This includes an overview of theories of military strategy and combat tactics including challenges related to terrorism, insurgency and counter-insurgency. The bulk of the class will cover, in depth, historical details of specific conflicts from the Peloponnesian War through the recent wars in Iraq and Afghanistan. Detailed discussion of the evolution of specific weapon systems and their impact on military tactics

will be included. Student will be required to watch several films as part of the course requirements.

Fall POLS1550 S01 16833 TTh 2:30-3:50(12) (R. McDermott)

POLS 1600. Political Research Methods.

Introduction to quantitative research methods in political science. Topics include research design, descriptive statistics, statistical hypothesis testing, and bivariate and multivariate regression. By the end of the course, students will have the requisite skills to intelligently consume and produce basic quantitative social science research. Enrollment limited to 24 sophomore, junior, and senior Political Science, International Relations, or Public Policy concentrators.

Spr POLS1600 S01 25355 MWF 12:00-12:50(01) (P. Testa)

POLS 1820D. Civil Liberties: Moral, Political and Legal Approaches.

This course will examine major constitutional controversies within the context of wider debates in political and legal theory. Readings from Supreme Court cases and prominent texts in political/legal theory. Topics include free speech, privacy, abortion, takings and capital punishment. Prior course work in political theory or philosophy recommended. Enrollment limited to 20 juniors and seniors concentrating in Political Science.

Spr POLS1820DS01 25356 F 3:00-5:30(15) (C. Brettschneider)

POLS 1820G. Politics and Nature.

This course investigates the politics of the relationship between people and the earth; examines the environmental consequences of this relationship as it currently exists, as well as its impact on human justice and freedom; and explores alternative political imaginaries and institutional forms that include the non-human, evaluating their implications for sustainability, justice, and freedom. In the course of considering the political relationship between human beings and the earth, we examine core political concepts including domination, freedom, agency, sovereignty, democracy, justice, liberalism, rights, representation, and the political. We also explore the relationship between politics and ethical life.

Fall POLS1820GS01 16836 M 3:00-5:30(03) (S. Krause)

POLS 1820H. Contraband Capitalism: States and Illegal Global Markets.

This course explores the clandestine side of the global economy (including flows of drugs, people, weapons, and money) and state policing efforts. We will examine the organization of these activities, how they intersect with the state and legal economy, their relationship to armed conflicts, and how they shape (and are shaped by) domestic and international politics. Enrollment limited to 20 juniors and seniors concentrating in Political Science or IAPA. Course is not open to students who have taken POLS 1020.

Fall POLS1820HS01 16837 M 3:00-5:30(03) (P. Andreas)

POLS 1820O. Adam Smith: Philosophy, Politics and Economics.

Referred to as the "father of economics" or "father of capitalism," Adam Smith was a moral philosopher, political thinker, and social scientist of the Scottish Enlightenment. A deep exploration of his major works including *The Theory of Moral Sentiments* and *The Wealth of Nations*, as well as the *Lectures on Jurisprudence* and his essays on philosophical subjects. We will grapple with big questions such as, "What is the nature of virtue and morality, and how do individuals learn moral behavior?", "What makes some societies rich and others poor?", and "What are the political preconditions and moral consequences of economic growth?"

Spr POLS1820CS01 25365 W 3:00-5:30(10) (M. Rogers)

POLS 1821I. Issues in Democratic Theory.

This seminar engages contemporary issues in democratic theory. Topics explored include the meaning of democracy (and the political consequence of different answers to that question); representation and citizenship; democracy and rights, (free speech, religious freedom, and privacy); democracy and judicial review; deliberative democracy. We will read works of political theory and United States Supreme Court cases. Enrollment limited to 20 juniors and seniors concentrating in Political Science.

Fall POLS1821I S01 16835 Th 4:00-6:30(04) (C. Brettschneider)

POLS 1821M. War in Film and Literature.

This course introduces students to a study of warfare, and some of the central issues raised in war, through the use of movies and novels. Central

themes include civil-military relations, leadership, the role of women in war, managing the homefront as well as issues related to battlefield tactics and strategy. Students will be encouraged to address these topics in applications related to World War I, World War II, and Vietnam in particular. This course will take place in a seminar format which stresses discussion of the relevant materials. Enrollment limited to 20 juniors and seniors concentrating in Political Science.

Fall POLS1821MS01 16838 Th 4:00-6:30(04) (R. McDermott)

POLS 1821N. Political Journalism.

Exploration of the development of political reporting and analysis of contemporary public affairs reporting. Will address key elements of the best political journalism, as well as the manner in which political journalism affects public opinion, political attitudes, and campaigns and elections. Enrollment limited to 20 junior and senior Political Science concentrators.

Spr POLS1821NS01 25357 T 4:00-6:30(16) (J. Robbins)

POLS 1821V. Democracy and Inequality in American Cities.

Explores the relationship between democracy and inequality in contemporary American cities. The seminar considers different kinds of inequality - economic, political and group/horizontal - from the standpoint of national politics in the United States. The focus then shifts to the literature on urban politics in the United States, assessing the major contrasting theoretical perspectives on the causes of local inequalities in American cities. Finally, we focus on unequal access to public safety and justice. Over the course of the semester, students will be expected to carry out "fieldwork" involving first-hand observation of local inequalities in the Greater Providence area.

Spr POLS1821VS01 25358 W 3:00-5:30(10) (R. Snyder)

POLS 1821W. The Politics of Race and Gender.

Politicians and scholars make a number of predictions about political life based on assumptions about race and gender. This course examines the roles of race and gender in American politics with a particular emphasis on women of color. The course focuses in social movements, political participation, and political representation. Enrollment limited to 20 juniors and seniors.

Spr POLS1821WS01 25381 Th 4:00-6:30(17) (A. LeSure)

POLS 1822G. The Political Economy of Hard Policy Problems.

Will tackle the "hard problems" governments sometimes have to deal with. For example, while governments are often cajoled and enjoined to produce economic growth, especially during recessions, do something about economic inequality and social mobility, and improve the life chances of millions through purposive action, actually delivering these things is incredibly hard. These areas constitute "hard problems" for two main reasons. Economically, we don't really have much of a clue about how to do many of these things. Politically, there are powerful interests that like these areas of policy just as they are, and they work to keep them "hard problems."

Spr POLS1822GS01 25380 T 4:00-6:30(16) (A. Sahasrabudhe)

POLS 1822Q. Identity Politics in Global Perspective.

This course is designed to provide students with an overview of major theories and empirical approaches to the study of identity politics. Throughout the semester we will read a combination of the classics and cutting-edge research in political science, economics, psychology, exploring a range of topics with implications for politics and societies around the world. These topics include: how identity should be conceptualized and measured; why some forms of identity are activated, mobilized, and contested; how identities are represented politically; how racial and ethnic identities intersect with other salient identities; how social diversity and civil society are interrelated; what factors affect the integration of immigrants; and which varieties of democracy enable the flourishing of plural identities. Readings for these topics will focus on the United States and the other parts of the world, including Africa, Asia, Europe, and Latin America.

Fall POLS1822QS01 16839 M 3:00-5:30(03) (D. Choi)

POLS 1822U. War and Human Rights.

This seminar will begin by studying the rise and spread of the notion of human rights, examining some of the core debates over human rights, including their enforcement in times of war. It will then turn to the laws of war, focusing especially on the 1949 Geneva Conventions and the

challenges posed to the Conventions by the rise of non-state actors wielding significant violence. Topics include child soldiers, war crimes, humanitarian intervention, torture, targeted killings, humanitarianism, and the international justice. Enrollment limited to 20 juniors and seniors concentrating in Political Science or International Relations.

Spr POLS1822US01 25360 W 3:00-5:30(10) (N. Tannenwald)

POLS 1822W. Congressional Investigations.

This seminar will explore the role that Congressional investigations have historically played at the intersection of politics, public policy, tension between the executive and legislative branches, law and media, focusing on certain of the seminal Congressional investigations that both reflected and re-shaped the politics of the day. These will include the Pecora investigation into the 1929 stock market crash, the Truman Committee investigation into defense contracting during World War II, the House Un-American Activities Committee, the McCarthy hearings, Watergate, the Iran-Contra hearings and the Senate Permanent Subcommittee on Investigations hearings into the financial services industry.

Fall POLS1822WS01 16840 T 4:00-6:30(07) (J. Robbins)

POLS 1824O. Democracy.

In this course we will seek to understand the evolution of democracy as a word, as a regime type, as a decision-making mechanism, as a *modus vivendi*, and as an essentially contested concept. We will also probe the relationships between democracy and law, democracy and peace, and democracy and sovereignty.

Spr POLS1824CS01 25364 Th 4:00-6:30(17) (D. Woody)

POLS 1824S. The Politics of Migration.

Managing migration waves is one of the big challenges of our time, one that is destined to increase in importance as climate change, conflicts, and economic inequality continue pushing people to move. This course provides an overview of cutting-edge research on the causes and consequences of migration. We will evaluate some of the common beliefs about migration using scientific studies: Is it true that most migrants are poor? Do restrictive policies discourage migration? Are immigrants good or bad for the economy? We will discuss the questions at the center of the political debate on migration and critically evaluate each argument based on scientific knowledge. Our discussions will be rooted in specific country cases (Ukraine, Syria, Bangladesh, East Africa, Pacific Islands,...), which we will use to learn about migration episodes and as a basis for a fact-based discussion.

Spr POLS1824SS01 25361 T 4:00-6:30(16) (G. Dipoppa)

POLS 1825S. Latino Politics in the United States.

Latines have often been described as the sleeping giant of United States politics. Although Latines make up nearly one in five people in the United States, the group has the lowest political participation rates of all the racial/ethnic groups in the United States. During this course, we will consider how Latines interact with United States politics. We begin by discussing Latine ethnicity and analyzing the extent to which Latines have politicized identities. We will examine historical and demographic trends, including immigration patterns and Latine social/labor movements, to see whether historical trends explain present behavior. We will also discuss topics related to Latine public opinion, voting patterns, and political representation. We will use what we learn during the course to discuss what role, if any, Latines will play in the future of United States politics.

Fall POLS1825SS01 18240 T 4:00-6:30(07) (M. Zarate)

POLS 1825W. Monuments, Citizenship, and Belonging.

Struggles over racist monuments—from defacement, to unsanctioned removal by protesters, to laws passed to “protect” statues—raise important questions about the political impact of commemoration. From the perspective of political theory, this course will analyze the civic work of monuments. Some of the key questions we will grapple with include: Do monuments matter? What civic function do they serve? When should they be removed? Thinking critically about monuments will allow students to consider how public memory is produced, whom it should represent, and what forms of commemoration are appropriate in diverse democratic societies.

Fall POLS1825WS01 16855 W 3:00-5:30(10) (J. Hooker)

POLS 1910. Senior Honors Thesis Preparation.

Concentrators who have given evidence of superior work in political science may be admitted to honors seminar on the basis of an application submitted in the spring of their junior year. Application and guidelines may be obtained on the Department of Political Science website. Prerequisite: Fulfillment of Methods requirement. Enrollment limited to 20 senior Political Science concentrators. Instructor permission required.

Fall POLS1910 S01 16846 Th 4:00-6:30(04) (A. Gourevitch)

POLS 1920. Senior Honors Thesis Preparation.

This course is a continuation of POLS 1910. Political Science Honors students who are completing their theses should enroll. Prerequisite: POLS 1910. Instructor permission required.

Spr POLS1920 S01 25366 M 3:00-5:30(13) (A. Gourevitch)

POLS 1970. Individual Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

POLS 1971. Individual Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

POLS 2020. American Political Development.

No description available.

Spr POLS2020 S01 25368 W 6:30-9:00PM (J. Morone)

POLS 2050. Preparing the Prospectus I.

This course covers selected topics in research design and methodology and is designed to help students enrolled in the Political Science PhD program to write and defend a prospectus in their third year of study.

Fall POLS2050 S01 16847 W 3:00-5:30(10) (M. Weir)

POLS 2051. Preparing the Prospectus II.

This course covers selected topics in research design and methodology and is designed to help students enrolled in the Political Science PhD program to write and defend a prospectus in their third year of study. Prerequisite: POLS 2050.

Spr POLS2051 S01 25370 M 3:00-5:30(13) (M. Weir)

POLS 2052. Becoming a Political Scientist: Professionalization and Strategies for Thriving.

This full-year course (half-credit each semester) is designed for 3rd year PhD students in Political Science and covers a range of topics that are crucial to students as they transition from the course phase to the research phase of their careers. Topics include practical and substantive issues related to planning and carrying out research, collaborating with others, teaching, ethics, obtaining external funding, and providing feedback to other scholars. Course only open to Political Science PhD students.

Fall POLS2052 S01 18745 F 8:30-11:00 (R. Weitz-Shapiro)

POLS 2053. Becoming a Political Scientist: Professionalization and Strategies for Thriving.

This full-year course (half-credit each semester) is designed for 3rd year PhD students in Political Science and covers a range of topics that are crucial to students as they transition from the course phase to the research phase of their careers. Topics include practical and substantive issues related to planning and carrying out research, collaborating with others, teaching, ethics, obtaining external funding, and providing feedback to other scholars. Course only open to Political Science PhD students.

Spr POLS2053 S01 26684 F 8:30-11:00 (R. Weitz-Shapiro)

POLS 2065. Public Bureaucracy.

The influence of bureaucratic policymaking looms large. Some estimates suggest that 90% of laws in the United States arise government agencies, not from elected legislatures. When do public bureaucracies abet democratic governance? When do they disrupt or abet anti-democratic political forces? What roles do “publics” play in “public bureaucracy?” This course on public bureaucracy considers these questions—and many more—through its systematic study of bureaucratic structures, politics, operations, and implications for democratic governance. The course provides opportunities to critique and construct theories and empirical analyses of public bureaucracies. It also provides opportunities for students to prepare for the comprehensive exams and to develop research agendas. This graduate course counts either as an American Politics or

Comparative Politics elective for the doctoral program in political science, and it does not have prerequisites.

Fall POLS2065 S01 18694 Th 8:30-11:00 (S. Moffitt)

POLS 2110. Proseminar in Comparative Politics.

Provides a survey of major approaches, issues, and debates in the field of comparative politics. Topics: state formation, revolutions and civil wars, ethnic conflict and nationalism, state-market relations; systems of representation, hegemony and domination, etc. Works of theoretical importance on each topic, focusing on authors' arguments and controversies within the literature. Open to graduate students only.

Fall POLS2110 S01 16848 W 1:30-4:00 (A. Varshney)

POLS 2120. Proseminar in Political Theory.

An overview of central debates in political theory today. Readings include contemporary writings on justice, liberalism, democratic theory, critical theory, feminism, power, multiculturalism, and citizenship and political economy. Enrollment limited to 14 graduate students in Political Science; advanced undergraduates may enroll with permission of the instructor.

Spr POLS2120 S01 25372 W 4:00-6:30 (J. Hooker)

POLS 2185. Political Theory of the American Constitution.

This course will examine major constitutional controversies within the context of wider debates in political and legal theory. Readings will come from Supreme Court cases and prominent texts in political/legal theory. Topics will include free speech, privacy, abortion, and capital punishment. Our aim is two fold. We want to understand the basic framework and content of the United States constitution as it has been elaborated by the Supreme Court. But we also want to go beyond this legal understanding and to challenge existing jurisprudence. To this end we draw on classic and contemporary texts in political theory.

Fall POLS2185 S01 16849 Th 6:30-9:00PM (C. Brettschneider)

POLS 2215. Comparative Political Economy.

This course covers the main currents of comparative political economy. This sub-field has roots in International Political Economy, Fiscal and Economic Sociology, and Economics. It has as its main foci the politics of economic growth, distribution and (in)equality. The growth program emerged from work on comparative capitalisms in the 1970s and 1980s, coalescing in the highly influential Varieties of Capitalism literature in the 2000s, and latterly in the Growth Models research program. The distributional strand of work focused on the interaction of producer groups and sought to tie political and economic outcomes to the relative strength of such groups. The (in)equality side of the subfield emerged out of studies of welfare states and engagement with the social metrics of comparative economic performance. This course surveys this broad terrain.

Fall POLS2215 S01 18602 M 1:30-4:00 (M. Blyth)

POLS 2220. Urban Politics.

Covers a number of topics linked to urban politics and urban public policy. Topics include the politics of urban education, affordable housing, downtown development. Examines how state and federal policy actions have contributed to the nature of the urban condition; and how race, class and ethnicity are interwoven with urban politics and urban public policy. Enrollment limited to 14. Graduate Students only; all others by permission only.

Fall POLS2220 S01 16850 M 4:00-6:30 (M. Orr)

POLS 2265. International Security.

This graduate seminar examines contemporary scholarship on international conflict. The course seeks to familiarize students with salient theoretical perspectives and debates, with an eye toward assisting students in conducting original research. Course topics include rationalist and psychological frameworks, domestic institutions, leaders and advisers, international institutions, norms and culture, technology, diplomacy, and power transitions. Course readings include a range of qualitative, quantitative, and experimental methods.

Spr POLS2265 S01 25375 W 1:30-4:00 (T. Jost)

POLS 2285. Language and Politics.

Will study Wittgenstein's text in the philosophy of language, Philosophical Investigations, connecting to contemporary work on the phenomenology of voice, race, gender, and gesture by Elaine Scarry, Robert Gooding-Williams, Adriana Cavarero, Judith Butler, Jose Munoz. Approach Wittgenstein in context, reading other classics in the philosophy of

language: Locke's Essay on Human Understanding, Merleau-Ponty's The World of Perception, JL Austin's How To Do Things With Words, Jacques Derrida's "Signature Event Context," and Stanley Cavell's Must We Mean What We Say? We ask: what does it mean to be a linguistic creature? Is language a cut that agentifies, a rupture that alienates, a practice that humanizes, an ideological fortress that concretizes relations of inequality, or a game? Will include films: Guy and Madeline on a Park Bench (Chazelle), Sorry to Bother You (Riley), and Dancer in the Dark (von Trier).

Fall POLS2285 S01 16851 Th 1:30-4:00 (B. Honig)

POLS 2345. Eco-Democracy.

In this course we explore the field's most important recent contributions to the study of political theory and the environment. We investigate the basis and scope of our obligations to the natural world; our obligations to one another with respect to the exploitation, degradation, and preservation of the natural environment; and our obligations to ourselves as individuals with respect to the natural environment. We then consider what political principles, institutions, and practices might best enable us to meet these obligations. Readings include Jane Bennett, Melissa Lane, John Dryzek, Cass Sunstein, Martha Nussbaum, Wendell Berry, Peter Singer, and others.

Spr POLS2345 S01 25376 M 1:30-4:00 (S. Krause)

POLS 2365. The Social and Political Thought of Karl Marx.

A careful reading of Karl Marx's work, with special emphasis on Marx as a philosopher of freedom and on his relevance today. The core of the class gives substantial attention to Capital, Marx's unfinished magnum opus, but will also look at earlier works to understand what Marx understood by a 'critique of political economy.'

Spr POLS2365 S01 25377 M 6:30-9:00PM (A. Gourevitch)

POLS 2400. Qualitative and Mixed Methods Research.

This graduate seminar offers an introduction to the design and implementation of social science research that deploys qualitative data and analysis in conjunction with other methods of inquiry. We explore the set of tools that is conventionally considered to comprise qualitative methods, including case studies, small-N comparisons, process tracing, sequential analysis, interviews and participant observation. Starting from the premise that each research method has its strengths and weaknesses, we also consider how qualitative methods can be combined productively with other methods of inquiry, including "large-N" quantitative analysis, experiments, spatial/geographic analysis, and multilevel analysis spanning different scales.

Fall POLS2400 S01 16852 Th 4:00-6:30(04) (R. Snyder)

POLS 2450. Exchange Scholar Program.

Fall POLS2450 S01 16621 Arranged 'To Be Arranged'

Spr POLS2450 S01 25273 Arranged 'To Be Arranged'

POLS 2580. Quantitative Research Methods I.

This course introduces students to statistical theory and quantitative methods commonly used in political science and public policy. The course focuses on statistical inference using multiple techniques of regression analysis and gives students opportunities to become proficient users of the statistical software package R as they develop statistical models and analyze their data. Enrollment limited to 14. Open to graduate students in Political Science only.

Fall POLS2580 S01 16853 W 4:00-6:30 (P. Testa)

POLS 2590. Quantitative Research Methods II.

An intermediate statistics course for graduate students. Topics include multiple regression, statistical inference, categorical dependent variable models, instrumental variable models, and an introduction to time series. Course readings and applications examine models used in different fields of political science and public policy including American institutions, comparative politics, and international relations. Open to graduate students concentrating in Political Science or Public Policy.

Spr POLS2590 S01 25378 Th 6:30-9:00PM (R. Blair)

POLS 2605. Quantitative Research Methods III.

Advanced Quantitative Research Methods is the third course in the methods sequence for graduate students in political science and an intermediate-level course in statistics and applied econometrics for graduate students in political science and public policy. Topics will include

causal inference, difference-in-differences designs, instrumental variable approaches, regression discontinuity designs and hierarchical models. The course will be applied, focused on grasping the use of these methods in practice and facing practical data limitation challenges. Special focus will be given to understanding the most recent advances in the literature on each of the strategies studied. I expect that most of you have already taken POLS2580 and POLS2590, and that all of you are familiar with core statistical and econometric concepts. Our sessions will be divided between lectures, group work and data analysis in Stata and/or R.

Fall POLS2605 S01 16854 W 6:30-9:00PM (G. Dipoppa)

POLS 2610. Quantitative Research Methods IV.

Quantitative Research Methods IV (Social Science Experiments and Replication) is an advanced seminar for graduate students in political science focusing on how research in the social sciences can be improved through experimentation and replication. The course is comprised of two key components: The first incorporates lectures that cover various topics in experimental design and analysis as well as critique and discussion of recent cutting-edge experimental or quasi-experimental scholarship across subfields of political science and adjacent disciplines. The second component will focus on the replication of work-in-progress by visiting non-Brown faculty members, where a team of graduate students will reanalyze the data and propose further robustness tests and extensions. This is an opportunity for graduate students to engage with scholars from leading departments, take a deep dive into work-in-progress, and pick up new tools and best practices for research.

Spr POLS2610 S01 25728 M 8:30-11:00 (D. Choi)

POLS 2975. Research Design.

This course introduces students to statistical theory and quantitative methods commonly used in political science and public policy. The course focuses on statistical inference using multiple techniques of regression analysis and gives students opportunities to become proficient users of the statistical software package R as they develop statistical models and analyze their data. Enrollment limited to 14. Open to graduate students in Political Science only.

POLS 2976. Field Survey and Research Design.

An independent study directed by a tenure-line faculty member of the Department of Political Science. Only third-year graduate students may register for the course; it is intended to provide a framework for producing a formal research design modeled on the dissertation prospectus.

POLS 2980. Individual Reading and Research.

An independent study course directed by a tenure-line faculty member in the Department of Political Science. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

POLS 2981. Individual Reading and Research.

An independent study course directed by a tenure-line faculty member in the Department of Political Science. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

POLS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall POLS2990 S01 16622 Arranged (R. Weitz-Shapiro)

Spr POLS2990 S01 25274 Arranged (R. Weitz-Shapiro)

POLS 2991. Thesis Research and Preparation.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Portuguese and Brazilian Studies

POBS 0105. Accelerated Portuguese.

This course serves as an accelerated introduction to Portuguese, one of the most widely spoken languages in the world. It is also an introduction to the diverse cultures of Portuguese-speaking societies. Specifically, the course will look into the ethnic, racial, social, and gender diversity in these cultures. Designed for students who have no prior knowledge of Portuguese, POBS 0105 meets five hours per week.

Fall POBS0105 S01 10230 TTh 1:00-2:20(06) (P. Sobral)

Spr POBS0105 S01 20191 Arranged 'To Be Arranged'

POBS 0400. Writing and Speaking Portuguese.

Designed to improve the students' ability in contemporary spoken and written Portuguese. Using such cultural items as short stories, plays, films, videos, newspaper and magazine articles, and popular music, students discuss a variety of topics with the aim of developing good communication skills. Attention also given to developing writing ability. A systematic review of Portuguese grammar is included. Prerequisite: POBS 0105, or POBS 0110, or placement. Conducted in Portuguese. Completion of POBS 0400 is the minimum requirement for participation in the Brown-in-Brazil Program. Offered every semester.

Fall POBS0400 S01 10231 TTh 10:30-11:50(13) (P. Sobral)

Spr POBS0400 S01 20192 Arranged 'To Be Arranged'

POBS 0501. Mapping Food, Eating Meaning, Making Community: A Welcome to the Lusophone world.

This course explores the Lusophone world vis-à-vis the local, regional, and national culinary traditions of Brazil, Portugal, Luso-Africa, and Goa. Through a broad selection of cultural material (music, film, television series, short stories, poems, visual art, etc) that either directly or indirectly dialogues with the theme of food and cuisine in the Lusophone world. Students will gain an introductory knowledge of the Portuguese language through brief language instructional lessons of vocabulary that is pertinent to the theme as well as some work in basic communication skills. The class meets every 3 to 4 weeks at a pre-arranged time, to prepare and cook a class meal together based on the regional cuisine in discussion. This course focuses on creating: from a class zine to creative projects. Taught in English with elements of Portuguese. No previous Portuguese language experience required.

Fall POBS0501 S01 18373 TTh 2:30-3:50(12) (J. Lehnem)

POBS 0810. Belonging and Displacement: Cross-Cultural Identities.

Focuses on the representation of immigrants, migrants and other "border crossers" in contemporary literature from Brazil and other countries. How do people respond to the loss of home and the shift to a new culture? Is "going home" possible? How do individuals deal with their dual or triple identities? Piñon, Lispector, Scliar, Rushdie, Salih, Cristina Garcia, V. S. Naipaul and others. Conducted in English. Enrollment limited to 19 first year students.

Fall POBS0810 S01 10241 TTh 9:00-10:20(05) (P. Sobral)

POBS 0990. Mapping Cross-Cultural Identities.

How do we construct our own identity as life becomes a multitude of narrative threads intersecting and overlapping like roadways on a map? How do we reconfigure identities vis-à-vis those who surround us? We will investigate the ever-changing map of cultural identities and its repercussions on human existence via contemporary literature and a series of projects that incorporate the arts (visual, digital, literary) and oral history. Some of the writers include Julia Alvarez, Kiran Desai, Junot Díaz, Milton Hatoum, Chang-Rae Lee, Clarice Lispector, Dinaw Mengestu, Nélida Piñon, Salman Rushdie, Taiye Selasi and others. No experience in the arts necessary.

Spr POBS0990 S01 20194 Arranged (P. Sobral)

POBS 1080. Performing Brazil: Language, Theater, Culture.

Designed to deepen the students' understanding of Brazilian culture and society through the performing arts. Students will read a series of plays and respond to them in a variety of ways: in writing, verbally, and through performance. The course will include poetry and music as these can also be performed. Throughout the semester students will also be working on creating their own performance pieces. Conducted in Portuguese.

Spr POBS1080 S01 20195 Arranged (P. Sobral)

POBS 1601W. Challenging the Colonial Complex: Critique and Praxis in the Portuguese-speaking world.

This course maps anti-colonial, postcolonial and decolonial critique and praxis in the Portuguese speaking world. It investigates a wide range of writings, while bringing forth an array of artistic, cultural, and media practices of resistance. The course is designed to claim the centrality of these voices and to encourage students to think visually – through not just about images, through not just about art. Reading, watching, listening, and discussing intensely and with care will be the basis of our academic

work as we explore the meanings and practices of decolonization in the Portuguese-speaking world. Reading knowledge of Portuguese is required.

Fall POBS1601VS01 18783 T 4:00-6:30(07) 'To Be Arranged'

POBS 1601Y. Indigenous Arts and Activism in Brazil.

This course will examine current forms of intersection between Indigenous arts and political activism, focusing on Brazil. Which possible futures do Indigenous arts envision? Topics include Indigenous creative interventions in the colonial archive, approaches to repatriation and Indigenous curatorial practice, critical perspectives on cultural appropriation and the importance of centering Indigenous voices, public space interventions by Indigenous artists, and the overlap between Indigenous arts and anti-racism as well as Indigenous arts and environmental activism. We will give special focus to the work of Indigenous artists, authors, and filmmakers engaged in activism and advocacy for Indigenous rights. The course will feature Indigenous artists, writers, activists, and scholars as guest speakers, offering firsthand perspectives. Utilizing campus resources the seminar will serve as a unique platform for an in-depth examination of present-day Indigenous arts within the Brazilian context. Conducted in English.

Fall POBS1601YS01 18238 W 3:00-5:30(10) (L. Lehen)

POBS 1970. Reading and Guided Study.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

POBS 1990. Research and Preparation of Honors Projects.

This independent study course is designed for students working on honors projects. Written permission of the concentration advisor (Prof. Sobral) is required. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

POBS 2400. Decolonial Futurities: Submerged Perspectives from and within the Americas.

Anthropocenic exhaustion begs for new/old artistic modes of gathering and collectivity. How can we think, do, create, perform, listen, sense, perceive, and generate future-oriented imaginaries based on the texture of ancient ways? This collaborative humanities course centers perspectives, translations, and mediations from and about the Américas. We seek to decenter the liberal humanism of environmental thinking to present modes of being that emerge from the otherwise of the Américas. This imaginary is pluralistic in its linguistic, racial, ethnic, and gendered imagination. It foregrounds submerged perspectives and unearths subterranean stories that confront legacies of (neo)colonialism, racial capitalism, and extractivist exploitation. Guest participants — with the support of the Brown Arts and Cogut Institutes, Modern Culture and Media, and Portuguese and Brazilian Studies — enliven our study across the U.S., Turtle Island, and Abya Yala (the Indigenous nomenclature for the Américas).

Fall POBS2400 S01 17377 W 12:00-2:30 (L. Lehen)

POBS 2450. Exchange Scholar Program.

Fall POBS2450 S01 16618 Arranged 'To Be Arranged'

POBS 2500N. Got Rights? Human Rights and Contemporary Brazilian Literature.

Portuguese sociologist Boaventura de Sousa Santos states that nowadays, there is a "global hegemony of human rights as a discourse of human dignity" (2015: 22). Nonetheless, Sousa Santos observes that this hegemony is challenged by a reality of widespread human rights abuses. What then, is the value of human rights and what role does literature play in the discursive construction and the praxis of human rights? This course examines how contemporary Brazilian literature conceptualizes human rights through topics such as authoritarianism, class, race, urban space. The course also establishes connections between human rights in Brazilian and select Spanish American texts.

Spr POBS2500N01 20193 Arranged (L. Lehen)

POBS 2600D. Brazilian Fictions of the Self.

Focuses on representations of the self as a "supreme fiction" in Brazilian novels since the late 19th. century. Machado de Assis, Raul Pompeia, Raquel de Queiroz, Graciliano Ramos, Clarice Lispector, Lúcio Cardoso, Lygia Fagundes Telles, Raduan Nassar, Sérgio Sant'Anna and João Gilberto Noll. Open to advanced undergraduates with permission from the instructor. Conducted in Portuguese.

Fall POBS2600ES01 18396 M 3:00-5:30(03) (L. Valente)

POBS 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall POBS2970 S01 16619 Arranged 'To Be Arranged'

Spr POBS2970 S01 25271 Arranged 'To Be Arranged'

POBS 2980. Reading and Guided Study.

Reading in Portuguese language, literature, civilization, and bilingual studies. Conducted via Portuguese readings and discussions. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

POBS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall POBS2990 S01 16620 Arranged 'To Be Arranged'

Spr POBS2990 S01 25272 Arranged 'To Be Arranged'

Public Affairs

MPA 2020. Public Budgeting and Management.

This course is designed to teach the political, theoretical and administrative aspects of contemporary public budgeting and management in the United States. You will examine the central role of budgeting in policy formulation and implementation and come to an understanding of the budget as a statement of competing for political priorities. In addition, the various roles of key institutions in the budgeting process will be studied.

Fall MPA2020 S01 18391 W 3:00-5:30(10) 'To Be Arranged'

MPA 2055. The Politics of Policymaking in Comparative Perspective.

This course provides concepts and tools for thinking critically about the political context in which policy is made and implemented. The course examines the underlying ideas, interests, and historical legacies that make politics and policymaking distinctive in different countries and governmental systems. It aims to supply a simple but flexible conceptual toolbox that enables students to define policy challenges as they take shape, propose programs and implement policies that can work in various settings.

Fall MPA2055 S01 18378 TTh 2:30-3:50(12) 'To Be Arranged'

MPA 2065. Introduction to Data Science and Programming.

We live in the era of data-driven decision making in all aspects of our lives. The features on your iPhone, the images in an ad campaign, even the background colors on many websites are all carefully tested and chosen against their measurable impact on customer satisfaction, purchasing, clicks, or some other goal. In this course, we will be learning to use and apply those same principles to public policy and government programs. Our goal is to equip MPA students with the tools required to set up experiments, gather data, and begin to evaluate and design public policy and government programs.

Fall MPA2065 S01 18393 Th 4:00-6:30(04) 'To Be Arranged'

MPA 2229. Principles and Practices of Stakeholder Engagement.

This class will introduce you to various types of policy stakeholders, from executives to the mass public. You will identify those actors, the combination of authorities, powers, interests, and constraints each one possesses. This framework for viewing stakeholders will enable you to strategize about how to engage different actors when and where they intervene in the policy process. As a policymaker, analyst, or advocate, you will have to contend with stakeholders that possess formal authorities to shape the policy process. These stakeholders will determine whether the problems that concern you reach the agenda; whether your preferred solution is adopted; how that policy solution is implemented; whether it diffuses from one political venue to another; and whether the policy endures, or reshapes politics, succumbs to termination or reform. We will catalog those authorities and powers and observe how they apply in real policy situations.

Fall MPA2229 S01 18234 M 3:00-5:30(10) 'To Be Arranged'

MPA 2445. Policy Analysis and Problem Solving.

This course introduces students to concepts and tools relevant to making public decisions informed by social values. It equips students to define problems and to systematically develop and compare policy options available to public actors. In short, the course teaches students to “think like a policy analyst” and reason in the public interest. In addition, the course is attentive to the political and institutional context in which policy decisions are made.

Fall	MPA2445	S01	18213	T	4:00-6:30(07)	'To Be Arranged'
Fall	MPA2445	S02	18217	T	4:00-6:30(07)	'To Be Arranged'

MPA 2451. Exchange Scholar Program.

Fall	MPA2451	S01	16599	Arranged	'To Be Arranged'
Spr	MPA2451	S01	25257	Arranged	'To Be Arranged'

MPA 2603. Leading for Impact.

Students in Leading for Impact will explore multiple leadership paradoxes such as: in every context, people are both more connected than ever—mostly digitally—and at the same time more socially and politically polarized, and lonely, than ever. Engaging with the concepts of diversity, equity, inclusion, and belonging in an authentic and vulnerable way is critical for leaders. Creating impact requires a thorough understanding of the problem at hand. A common mistake policy-makers, politicians, executives, or social business founders make is to address the problem they want to tackle as if it were “technical” i.e. only requiring expertise and appropriate tools. However, wicked problems have “adaptive” aspects: their root causes and their impact have to do with people’s beliefs, values, habits, or behaviors. Leaders need to use Emotional Intelligence to leverage their own strengths as well as the conditions that enable success.

Fall	MPA2603	S01	18392	Th	4:00-6:30(04)	'To Be Arranged'

MPA 2605. Translating Evidence into Economic Policy.

The objective of this course is, precisely, to offer those insights to students interested in a career in policymaking by providing case studies of the most important and challenging policy questions of our lifetimes. By the end of the course, students will have deepened their understanding of the most important policy challenges from an array of different policy questions and studying the evidence around them, with a special focus on quantitative methods useful to analyze those questions.

Fall	MPA2605	S01	18225	M	3:00-5:30(03)	(D. Bahar)

MPA 2981. Independent Graduate Study.

This is an independent study course for the MPA program.

Public Health

Generalist Public Health

GPHP 2000. Using Biostatistics to Make Public Health Decisions.

The objective of the three-course data sequence is for students to develop the knowledge, skills, and perspectives necessary to use data to make public health decisions.

These three data courses complement each other, but do not have to be taken in a specific order. In this course, students learn core principles and methods of biostatistics and data analysis as they apply to public health case studies/current real-world examples. This course focuses on statistical principles as well as the applied skills necessary to answer public health questions using data, including the following: data analysis, data interpretation and the presentation of results. This course is intended to teach students both the basic knowledge required to develop and interpret quantitative studies as well as the skills to conduct basic statistical analyses.

Fall	GPHP2000	S01	18171	Arranged	(C. Linkletter)

GPHP 2020. Using Survey and Qualitative Methods to Make Public Health Decisions.

The objective of the three-course sequence is for students to develop knowledge, skills and perspectives necessary to use data to make public health decisions. These three data courses complement each other, but do not have to be taken in a specific order. Students learn and apply the theory of sampling and survey methods and their application to case studies from the first two methods courses. Topics include: survey design and planning; principles of sampling and survey terminology; questionnaire construction; protection of human subjects; data collection (including interviewing and data coding procedures); and application, presentation,

and evaluation of results. The students will also be introduced to qualitative approaches to data collection and analysis. Methods covered include: participant observation, key-informant interviews, focus groups, innovative data collection strategies, and non-obtrusive measures. Students will learn and develop skills in: qualitative data collection and management, interviewing, transcript analysis using computerized software, triangulation between qualitative and quantitative data, and report preparation for qualitative studies.

Fall	GPHP2020	S01	18163	Arranged	(C. Sammartino)

GPHP 2300. Social Determinants of Health/Equity in Public Health.

There is mounting support for a social determinants of health approach across the world, from global, sociopolitical commitment to within-country action. In this course, students will examine the inequitable conditions in which people are born, live, work and age and how these conditions are propelled by inequities in power, money, and resources. Students will analyze structural, political, economic factors as well as how resource distribution decisions made outside the health sector contribute to health inequities. In the course, students will also explore innovative ways to reduce health disparities and work toward achieving health equity.

Fall	GPHP2300	S01	18165	Arranged	(J. Nazareno)

GPHP 2320. Evaluation of Public Health Programs.

This course will focus on how public health programs and interventions are evaluated. Students will learn about frequently used methods and planning tools as well as basic principles of budget and resource management to apply them to the development of an evaluation plan. Part of the evaluation is also assessing the impact of structural, socioeconomic, political, and organizational processes on the development, adaptation, implementation, and evaluation of public health programs and interventions.

Fall	GPHP2320	S01	18166	Arranged	(M. Doshi)

GPHP 2400. Health Care Systems & Policy.

This course is designed to give students the skills and experiences they need to master understanding of health care systems, policy in public health, and systems thinking. Throughout the class, students will assess how the health care and public health infrastructures operate across multiple levels of government and the role of stakeholders, politics, and media in influencing public health-related policies. Building on skills related to leadership and communications, students will learn about policy design and implementation to improve the health status of populations.

Fall	GPHP2400	S01	18170	Arranged	(M. Harvey)

GPHP 2810. Local-Global Public Health Leadership.

Leadership in Public Health is a two-semester sequence of courses designed for students to develop and refine leadership skills to transition to leadership and management roles. These two courses complement each other, but do not have to be taken in a specific order. A large focus of these two courses is on the role of the students as leaders in their own organizations or in those in which they hope to work in the future. In this course, students will learn to apply negotiation and mediation skills to address organizational or community challenges, integrate perspectives from other sectors and/or professions to promote and advance population health, and develop a strategic plan to guide an organization through changes caused by public health issues. Other leadership tools and techniques include mediating organizational change with available resources and integrating innovative and creative strategies.

Fall	GPHP2810	S01	18167	Arranged	(K. Andes)

GPHP 2850. Public Health Communications.

Effective communication skills are needed by leaders in public health settings. Public Health Communications is designed for students to develop communication skills to prepare them for the breadth of issues related to public health challenges. Students will learn and apply various communication strategies for different audiences and sectors and how to communicate audience-appropriate public health content, both in writing and through oral presentation. Students will learn to develop a communications plan for multiple audiences that addresses misinformation and conflicting data. In addition, students will learn the importance of cultural competence in communicating public health content to decision makers and will develop a public health campaign that demonstrates the utilization of a cultural competency framework.

Fall GHPH2850 S01 18172 Arranged (S. Roberson)

GPHP 2900. Integrative Learning Experience (ILE).

For your culminating academic experience, students will produce a final paper project addressing a current, real-world public health challenge. Capitalizing on the global nature of the program, students will be asked to examine the problem as it relates to their geographical region. They will gather and highlight various forms of data on their locale, identify stakeholders, and propose how they would advise their local or regional health authority to address the challenge. Students will choose from a number of challenges. Those who select the same challenge will form a group, work in tandem, and share their region-specific lessons with each other under the supervision of a faculty member with expertise on the topic.

Fall GHPH2900 S01 18169 Arranged (H. Ziobrowski)

Public Health

PHP 0060. Complexities and Challenges of Global Health.

Global health refers to the health and wellbeing of all of the world's populations, regardless of geography, country, or citizenship. Many of today's most pressing issues, from climate change to political conflict and population displacement, have profound implications for health. This course will introduce students to fundamental topics in global health, and it will encourage them to approach global health issues through a lens of equity and responsibility toward people and populations beyond United States' borders. Students will develop a framework for understanding contemporary health challenges and learn how responses to these complex problems require collaboration across health and non-health sectors of society. This course will challenge students' assumptions about world health while strengthening their skills in data literacy and critical analysis.

Fall PHP0060 S01 17706 TTh 1:00-2:20(06) (N. Trivedi)

PHP 0310. Health Care in the United States.

Introduction to the health care delivery system. An overview of the U.S. health care financing, delivery and regulatory system. Considers the interaction between paying for and providing and assuring the quality of health services; changes in one component of the system inevitably affect the others. Addresses the balance between employer funded health insurance, publicly funded health insurance and the consequences of not being insured. Six discussion sections will be arranged. Open to undergraduates only. This is a core class for the concentration in public health.

Fall PHP0310 S01 17561 MWF 10:00-10:50(14) (I. Wilson)

PHP 0850. Fundamentals of Epidemiology.

What is epidemiology? It is the study of the occurrence and distribution of health-related states and processes in specified populations and the application of this knowledge to control health problems. This course will provide learners with a strong foundation in the concepts and methods needed to describe the burden of a disease in communities, identify what causes these poor health outcomes, and evaluate the impacts of interventions meant to improve health.

Fall PHP0850 S01 17525 TTh 10:30-11:50(13) (W. Goedel)

PHP 1070. Global Burden of Disease.

This is an advanced introduction to global public health, defining and critically examining key topics and concepts through an interdisciplinary lens. From historical efforts in mid-20th century international health assistance, to the early 21st century explosion of global health funding, to current efforts to decolonize global health and engage in more equitable global partnerships, this course examines major social and scientific developments. Readings, lectures, in-class discussions and small groups explore changes in the underlying causes of morbidity and mortality during global social, economic and health transitions, the biological and social ecology of global disease patterns, and efforts to improve health in under-resourced settings. Guest lecturers offer different perspectives on the global burden of disease. An in-depth research paper worth 40% of the final grade is the scholarly centerpiece of course; this is a rigorous semester-long project. There are two exams.

Fall PHP1070 S01 18272 TTh 9:00-10:20(05) (A. Harrison)

PHP 1450. COVID-19, Public Health, and Health Policy.

The impact of COVID-19 on US society has been profound. Caused by the newly emergent SAR-COV2 virus, the pandemic required public health practitioners and healthcare systems to pivot to keep the public safe under challenging circumstances. In the US, local municipalities, state governments, and the federal government developed varying, and at times conflicting, policies to guide the public health response. Using a case-study approach, this course will explore how public health and health policy intersected and clashed in responding to this 100-year pandemic. We will examine how different states and federal agencies responded to COVID-19 and learn from leaders directly involved in the pandemic response.

Fall PHP1450 S01 17557 T 4:00-6:30(07) (S. Rivkees)

PHP 1460. Public Health in a Changing World: Law, Policy & Justice.

Laws and policies shape public health in profound ways. The U.S. Constitution frames and limits government authority to protect and promote public health. It also provides protections for individual rights that often are in tension with public health's focus on the common good. Federal, state and local laws and policies structure the distribution of society's resources and—as interpreted, implemented and enforced—can have serious implications for health equity. The COVID-19 pandemic has exposed deeply polarized views among Americans about the role of government in public health and has laid bare vast structural health inequities. This course will explore the Constitutional foundations of public health law; how public health powers are distributed across different levels and branches of government; legal and policy strategies for addressing infectious and chronic diseases and injuries; and the role of laws and policies in structuring—and remedying—health inequities.

Fall PHP1460 S01 17999 TTh 9:00-10:20(05) (L. Tobin-Tyler)

PHP 1501. Essentials of Data Analysis.

This course covers the basic concepts of statistics and the statistical methods commonly used in the social sciences and public health with an emphasis on applications to real data. The first half of the course introduces descriptive statistics and the inferential statistical methods of confidence intervals and significance tests. The second half introduces bivariate and multivariate methods, emphasizing contingency table analysis, regression, and analysis of variance. This is designed to be a first course in Statistics. The course is intended for Public Health or Statistics concentrators. Others can register with instructor's permission. There are no prerequisites.

Fall PHP1501 S01 17526 TTh 1:00-2:20(06) (A. Murillo)

Fall PHP1501 S02 17527 MW 8:30-9:50(09) (A. Murillo)

PHP 1510. Principles of Biostatistics and Data Analysis.

This course is the first in a two-part sequence (the sequel being PHP 1511: Applied Regression Analysis), designed to provide students with a broad-based exposure to modern methods and applications of probability and biostatistical inference. It is geared toward students concentrating in statistics and other students who desire a course that combines the mathematical underpinnings of statistical methods with timely applications in the biological, life and health sciences and related fields. Applications to real data from a variety of studies are used throughout the course to illustrate the materials, but the emphasis is on the principles of inference and the underlying theory. This course will also give students experience manipulating and analyzing data using the R statistical software package with RStudio interface. Students will work with statistical software during the homework assignments, but this is not a course in R.

Fall PHP1510 S01 17558 TTh 10:30-11:50(13) (C. Schmid)

PHP 1550. Substance Use and Vulnerability to Addiction.

This foundational course will examine how we classify substance use, substance misuse, and substance use disorders and how substance use impacts population health, including exacerbating health disparities. We will examine and compare prominent models of why people become addicted to substances. Using the socioecological model as a framework, we will analyze key risk and protective factors for substance misuse including (a) individual factors such as biological susceptibility, personality, and co-occurring psychiatric disorders, (b) interpersonal factors such as peer use and social support, (c) community factors such as access to alternative reinforcers and neighborhood resources, and (d) societal factors such as racism, social and economic inequalities,

and stigma around addiction. Using this framework, we will analyze how social determinants of health impact substance use and its negative consequences in marginalized populations.

Fall PHP1550 S01 18281 W 3:00-5:30(10) (R. Cassidy)

PHP 1560. Statistical Programming in R.

Statistical computing is an essential part of analysis. Statisticians need not only be able to run existing computer software but understand how that software functions. Students will learn fundamental concepts - Data Management, Data types, Data cleaning and manipulation, databases, graphics, functions, loops, simulation and Markov Chain Monte Carlo through working with various statistical analysis. Students will learn to write code in an organized fashion with comments. This course will be taught in a "flipped" format. Students will watch a series of videos and work through some simple coding examples before coming to class.

Fall PHP1560 S01 18350 TTh 2:30-3:50(12) (A. Paul)

PHP 1680I. Pathology to Power: Disability, Health and Community.

This course offers a comprehensive view of health and community concerns experienced by people with disabilities. Guest speakers, and hands on field research involving interactions with people with disabilities will facilitate the students gaining a multi-layered understanding of the issues faced by people with disabilities and their families.

Fall PHP1680I S01 17556 TTh 2:30-3:50(12) (S. Skeels)

PHP 1700. Current Topics in Environmental Health.

This course is designed to introduce students to the field of environmental health, and demonstrate how environmental health is integrated into various aspects of our lives, both directly and indirectly. Topics to be covered include: toxic metals, vector-borne disease, food safety, water quality, radiation, pesticides, air quality, hazardous waste, risk assessment, and the role of the community in environmental health. Several topics will be presented by guest speakers so that students can learn from the expertise of professionals in the field. Enrollment limited to 65.

Fall PHP1700 S01 18523 F 1:00-3:30 (T. Zheng)

PHP 1720. Environmental Exposure Assessments in Practice.

Exposure assessments are the key to linking environmental contaminants to human health. This course will provide you with a detailed overview of environmental exposure assessment and its role in providing tools and metrics for defining exposures in epidemiological studies. This includes the design of community and personal monitoring studies, the techniques and equipment used for sampling and analysis, and the interpretation of data. Simultaneously, students will develop and carry out an environmental exposure assessment in the local community and will also learn about and put into practice topics such as community engagement, community surveying, environmental justice, and public health communication strategies.

Fall PHP1720 S01 17705 MW 8:30-9:50(09) (E. Walker)

PHP 1802. Human Security and Humanitarian Response: Increasing Effectiveness and Accountability (IAPA 1802S)..

Interested students must register for IAPA 1802S.

Fall PHP1802 S01 18747 Arranged 'To Be Arranged'

PHP 1821. Incarceration, Disparities, and Health.

This survey course is designed for students who want to interrogate the central role that public health policies and practices play in creating and sustaining the nation's epidemic of incarceration. The course will focus on individuals who have experienced incarceration and the under-resourced, low-income, and medically disenfranchised communities from which these individuals come and to which most will return. Students will learn about the lived experiences of those directly impacted by the criminal legal system through invited speakers who have been incarcerated. Experts who work at the intersection of the criminal legal and health systems will also be invited to the class. Undergraduates who have taken PHP 0310 and PHP 0320 and MPH candidates will have priority for enrollment. Unfilled spaces in the class will be available to undergraduates who have not taken PHP 0310 and PHP 0320.

Fall PHP1821 S01 17690 T 4:00-6:30(07) (B. Brockmann)

PHP 1855. Infectious Disease Modeling.

This course will introduce infectious disease modeling and its applications. Students will learn to build computational models of infectious disease, fit models to data, leverage models to develop predictions, and target

public health interventions. We will explore how models were used during the COVID19 pandemic, and are being used to project the health effects of climate change. We will introduce core mathematical underpinnings including dynamical systems and statistical approaches for model fitting. Students should be familiar with calculus and have prior coding experience in R, Python or Matlab.

Fall PHP1855 S01 18360 TTh 9:00-10:20(05) (R. Baker)

PHP 1880. Meditation, Mindfulness and Health.

This course provides an overview on the relation of meditation and mindfulness (the ability to attend in a nonjudgmental way to one's own physical and mental processes during ordinary, everyday tasks) with various health outcomes and disease risk factors such as depression, anxiety, diet, substance use, and cardiovascular disease. Mechanisms by which mindfulness may influence health will be addressed. The course will assess studies in the field for methodological rigor, and students will be taught strengths and weaknesses of current research. Students will be taught various mindfulness practices including direct experience with mindfulness meditation.

Fall PHP1880 S01 17559 TTh 2:30-3:50(12) (E. Loucks)

PHP 1890. The Craving Mind.

We are creatures of habit. Driven by biological processes set up to help us survive, our minds are constantly craving experiences and substances—from smartphones to romance to alcohol—and this craving leads to habit formation. This course will explore the behavioral and mental processes that foster craving and consequent habit formation, the impact these have on individual and societal health, and how we can "hack" our own neurobiological reward circuitry using practices such as mindfulness, to foster greater health and wellbeing. Priority given to Public Health concentrators; all others with instructor permission.

Fall PHP1890 S01 18126 W 3:00-5:30(10) (J. Brewer)

PHP 1900. Epidemiology of Disorders and Diseases of Childhood and Young Adulthood.

Students will learn about diseases and disorders of childhood and young adulthood, including allergies, autism, eating disorders, obesity, endometriosis, and migraines. Students will learn how these disorders are defined, how many youth are impacted, and the age-appropriate epidemiologic methods to study disorders and diseases during childhood, adolescence, and young adulthood, respectively. For the final project, students will pick a disease or disorder of interest that occurs during childhood, adolescence, or young adulthood, synthesize the results from multiple epidemiological studies, and concisely present this information in both a written report and an oral presentation.

Fall PHP1900 S01 18603 M 9:00-11:30 (D. Pearlman)

PHP 1910. Public Health Senior Seminar.

This dynamic course is designed to provide an overarching capstone experience to seniors graduating with a bachelor's degree in Public Health. This class is intended to help students gain in-depth knowledge of public health by utilizing and strengthening both oral and written communication skills. These skills will facilitate communicating with diverse audiences through a variety of media and working in teams. Critical skills such as literature searches, use of bibliographic software, critiquing the literature, working in teams, and writing research papers will be practiced. Current public health topics that are timely will be discussed and public health successes, failures, and areas that need more work and effort will be explored. The course is designed as a seminar emphasizing class discussion, interaction, and debate regarding differing perspectives, as well as in-depth discussion of the assigned readings.

Fall PHP1910 S01 18130 W 3:00-5:30(10) (L. Bohlen)

Fall PHP1910 S02 18132 W 3:00-5:30(10) (N. Trivedi)

PHP 1915. Public Health Honors Senior Seminar.

This dynamic course will provide an overarching public health experience for students in the public health honors track. Students will strengthen oratory, writing, and teamwork skills. The course will add structural support for students beginning their thesis experience. This will include literature review and appraisal, scientific writing, data presentation, and communication of findings to scientific and lay audiences. The instructor is formally trained in Internal Medicine, public health, health policy and clinical epidemiology which will be brought to the classroom. This seminar course will emphasize class discussion, interaction and debate regarding

differing perspectives on each topic area, as well as in-depth discussion of the assigned readings.

Fall PHP1915 S01 18270 W 3:00-5:30(10) (K. Biello)

PHP 1920. Social Determinants of Health.

The course provides an overview of social determinants of health. Examples of topics include health effects of educational attainment, social integration, neighborhood socioeconomic characteristics, racial discrimination, gender, income inequality, childhood socioeconomic circumstances, parental neglect, and job strain. Mixed teaching methods are used, including small group discussions, problem-based learning and guest lectures. Open to graduate students and advanced undergraduates.

Fall PHP1920 S01 17533 M 3:00-5:30(03) (D. Grigsby)

PHP 1970. Independent Study.

A special project may be arranged in consultation with an individual faculty sponsor. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHP 1980. Honors Thesis Preparation.

Two semesters of PHP 1980, Honors Thesis Preparation, will be devoted to the development and implementation of an Honors project, and of the writing of the Honors Thesis for the Public Health Concentration.

PHP 1998. Public Health Nutrition.

Public health nutrition is an interdisciplinary field focused on promoting health and reducing disease risk by improving the nutritional status of populations. The goal of this seminar is to introduce the basic principles of public health nutrition with a focus on the United States. Students will gain an understanding of the science behind government-issued dietary recommendations and learn about methods of dietary assessment, determinants of food intake and nutritional status, and individual-level and environmental-level interventions to improve diet. The course will emphasize the ways in which environmental factors and public policy can influence the nutritional status of diverse population groups. Through discussions and debates, students will explore and critically discuss current public health nutrition controversies, such as taxation of less healthful foods, nutrition restrictions on food stamp purchases, federal agricultural policy, and school food policy among other contested topics.

Fall PHP1998 S01 18547 Th 1:00-3:30 (A. Tovar)

PHP 2015. Foundations of Spatial Analysis in Public Health.

The distribution of power and privilege in society directly shapes where we live and what opportunities we have available to us for achieving optimal health and well-being. Describing how sociopolitical forces shape our neighborhoods and communities can help us understand how and why health and disease vary over space and time. In this course, we will use a combination of didactic lecture sessions and interactive tutorial sessions to develop our knowledge and skills as spatial thinkers and understand how geographic information system applications like ArcGIS can be used to collect, analyze, and visualize spatial data to inform, evaluate, and improve public health programs. In small groups, we will work together to conduct spatial analyses using data from programs delivered by the Rhode Island Department of Health to learn and apply best practices for conducting spatial analyses and communicating their results.

Fall PHP2015 S01 17708 MW 4:00-5:20(03) (W. Goedel)

PHP 2018. Epidemiology of Cardio-Metabolic Health.

This course surveys the entire landscape of the nutritional, biochemical, and genetic aspects of cardiometabolic health addressing issues of obesity, diabetes, metabolic syndrome, and their micro- and macro-vascular complications. Students will learn about both the descriptive and analytical epidemiology of these seemingly distinct but clearly clustered disorders including the so-called metabolic syndrome comprehensively and in-depth. International comparison of prevalent data in different social contexts will also be reviewed, so that strategies for prevention by either changing our cultures or natures can be appreciated and debated with a better understanding of the related issues confronted by public health and medical professionals.

Fall PHP2018 S01 17709 F 9:00-11:30 (S. Liu)

PHP 2023. Maternal and Child Health in the United States.

This is a graduate level course focused on maternal and child health in the United States.

While some reference will be made to the experience in other countries, the focus of the course will be on the United States. A broad range of health conditions will be covered, with an emphasis on leading causes of mortality and morbidity. In addition, we will examine the range of programs designed to prevent or address important health threats.

Fall PHP2023 S01 18308 Th 4:00-6:30(04) (M. Silverstein)

PHP 2060. Qualitative Methods in Health Research.

Introduces qualitative approaches to data collection and analysis in health research. Methods covered include: participant observation, key-informant interviews, focus groups, innovative data collection strategies, and non-obtrusive measures. Students will use applied projects to develop skills in: qualitative data collection and management, interviewing, transcript analysis using computerized software, triangulation between qualitative and quantitative data, and report preparation for qualitative studies. Enrollment limited to 20 graduate students.

Fall PHP2060 S01 18282 F 9:30-12:00(09) (E. Belanger)

PHP 2061. Qualitative Data Analysis in Public Health Research.

This intermediate/advanced graduate seminar focuses on various interdisciplinary approaches to the analysis of textual data, including thematic analysis, grounded theory, phenomenology, and narrative and discourse analysis. Students will explore the philosophical underpinnings of these qualitative data analysis approaches and consider their application in the context of critical theories and methodologies, including intersectionality. Students will also learn practical skills involved in qualitative data analysis, including codebook development, coding, developing themes, categories, and conceptual models, writing memos, and disseminating findings to diverse audiences. The course centers issues of power, ethics, positionality, and reflexivity in the context of qualitative research with minoritized populations and discusses community- and arts-based participatory research approaches. The course also addresses methods for combining qualitative and quantitative research findings in the context of a mixed-methods research approach. Students will have the option to analyze their own or others' qualitative data.

Fall PHP2061 S01 18283 W 1:00-3:30 (K. Andes)

Fall PHP2061 S02 18284 W 1:00-3:30 (M. Agénor)

PHP 2072. Applied Public Health: Policy, leadership and communication.

Applied Public Health is a two-semester sequence of courses designed to give students the skills and experiences they need to master understanding public health and health care systems, policy in public health, leadership, communication, interprofessional practice, and systems thinking. This will be achieved through a combination of lectures, in class exercises, homework assignments, and practical experience in a public health setting. The second course (PHP 2072) is taken in the Fall of your second year.

Fall PHP2072 S01 18278 T 1:00-2:20 'To Be Arranged'

Fall PHP2072 S02 18279 Th 2:30-3:50 'To Be Arranged'

Fall PHP2072 S03 18280 W 4:00-5:20 'To Be Arranged'

PHP 2073. Leadership and Communication.

The objective of this two-unit (i.e., 360-hour) course, which students will take online in the summer prior to arriving on campus, is to enable students to become public health leaders who can communicate effectively with a wide variety of audiences. Students will learn leadership principles, such as, how to create a vision, advocate for policies and programs, build coalitions, and use negotiation and mediation strategies. Students will build on their oral and written communication skills, by writing an op-ed delivering a presentation to their peers and interacting with public health leaders and elected officials. Students will also learn from leading experts in the fields of leadership and communication related to public health.

Fall PHP2073 S01 18018 Arranged (S. Rivkees)

PHP 2074. Needs Analysis and Program Planning.

In this 1.5-unit (i.e. 270-hour) service-learning course, students will conduct a needs analysis in an actual clinical health care site, where they will spend a minimum of 80 practicum hours. The practicum portion of the course counts as their Applied Practice Experience (APE). Students will receive information on the APE requirements in the summer

before the fall semester. Students will consider levels of intervention including the individual; families or small groups; organizations such as schools, worksites, health care settings; communities; the media; policy and environmental changes. Students will identify personal and environmental factors that affect public health and develop skills in needs assessment, formative research, cultural sensitivity, behavior change theories, intervention mapping, process and impact/outcome evaluation and dissemination. Students will critique intervention studies and gain experience in developing a behavior change intervention.

Fall PHP2074 S01 18020 Th 2:30-5:00 (M. Harvey)

PHP 2080. Public Health Law and Policy.

The global COVID-19 pandemic has brought to the forefront the important role that law – at the federal, state and local levels – plays in public health. Law not only organizes and structures the authority of government actors to intervene to protect the public's health, it also molds the social environment in which people live, shaping access to resources needed to stay healthy. This course will explore the tensions between public health laws and policies and individual rights and freedoms. What authority should the government have to compel individuals, groups and businesses to conform to health and safety standards to promote the common good? What happens when public health intervention infringes on individual rights and liberties? How do laws and policies, and the ways in which those laws and policies are implemented and enforced, affect health equity and justice?

Fall PHP2080 S01 19073 M 1:00-3:30 (L. Tobin-Tyler)

PHP 2081. Health Policy and Equity.

The objective of this course is to provide students with a broad overview of the role of policy in population health, relevant equity-focused frameworks, the organization of the US healthcare system, comparative healthcare systems, and the policymaking process. This course will teach and assess students' competency to: Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings Apply ethical principles to public health practice Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community, and societal levels Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence Evaluate policies for their impact on public health and health equity.

Fall PHP2081 S01 18550 T 4:00-6:30(07) (M. Harvey)

PHP 2090A. Research Grant Writing for Public Health-Part A.

PHP 2090A is the first in a two-course sequence that enables students to gain hands-on experience in creating high-quality, competitive public health research grant applications. The sequence will focus on writing training- and early-career applications tailored to the National Institutes of Health (e.g., F- and K-series grants). In PHP 2090A, students will draft their specific aims with guidance from their mentor(s), obtain foundational knowledge about the NIH grant submission process, learn about the peer review process, understand the content of NIH grant sections, and develop the foundations of their full grant proposals. They will do this through directed readings, pre-recorded lectures, assignments, instructor-led seminars, and consultation with their primary academic mentors. In PHP 2090B, students will develop a full proposal and receive peer and faculty feedback on it.

Fall PHP2090A S01 18330 M 9:00-11:30 (S. Buka)

PHP 2120. Introduction to Methods in Epidemiologic Research.

Epidemiology quantifies the distribution and determinants of health in populations, with the goal of reducing the burden of negative health outcomes. This intensive introductory course is intended to provide graduate students with a strong foundation in key epidemiological concepts and methods so they can be critical consumers and users of epidemiological research. Students will learn the core principles of study design, calculating measures, and appraising and communicating research through lectures and readings of published epidemiological studies as well as applied practice through exercises and assignments. This is a graduate-level course aimed at Masters' and PhD students. The course is not open to first year students or sophomores but may be available for advanced undergraduates with the instructor's permission.

Fall PHP2120 S01 18287 TTh 10:30-11:50(13) (M. Lurie)

PHP 2140. Principles of Applied Epidemiology.

Epidemiology quantifies the distribution and determinants of health in populations, with the goal of reducing the burden of negative health outcomes. This intensive introductory course is the first in a methods sequence (followed by PHP 2210 and PHP 2180) and is intended to provide graduate students with a solid foundation in epidemiological concepts in relation to public health. They will use this foundation to build a methodological skill set to enable being critical consumers, users, and producers of research. Students will learn the core principles of research design, bias and confounding, and applied public health and be able to apply their knowledge to critically evaluate and synthesize findings from epidemiological studies and begin producing and communicating their own research products. Collaborative learning is a key component of the course design.

Fall PHP2140 S01 18546 TTh 2:30-4:00 (S. McBurney)

PHP 2150. Foundations in Modern Epidemiologic Methods.

The overall objective of this course is to provide students with a strong foundation in epidemiologic research methods. This is the first of a three- or four-course sequence in epidemiological methods aimed at students who expect to eventually conduct their own epidemiological research. The course is designed for students enrolled in a PhD program in the School of Public Health, or who are completing the MPH epidemiology concentration. There will be a strong quantitative focus in this course, and the typical student will also have some introductory knowledge of epidemiology. PHP 2507 or 2510 should be taken concurrently. Undergraduate students, fifth year MPH students, or graduate students not in a public health program may request instructor permission (override) through CAB from the instructor.

Fall PHP2150 S01 17688 TTh 10:30-11:50(13) (B. Marshall)

PHP 2220F. Reproductive, Perinatal and Early Childhood Epidemiology.

This course provides an overview of topics related to reproduction, pregnancy, maternal and child outcomes of pregnancy, and long-term consequences related to reproductive health. Methodological issues unique to reproductive and perinatal epidemiology are discussed, as well as general epidemiologic methods as applied to topics in reproductive and perinatal health. Class sessions will include lectures and discussions of published research studies, with active student participation expected. After several introductory lectures, students will select topics and be responsible for organizing a presentation and discussion under the instructor's supervision.

Fall PHP2220F S01 18604 T 4:00-6:30(07) (B. Berger)

PHP 2232. Contemporary History of Epidemiologic Methods.

In 1987 Sander Greenland published a historical anthology of key papers in epidemiologic methods that were published between 1946 and 1976. In this class, we pick up where Greenland left off, reviewing papers published between 1976 and 2010 that represent some of the major methodological innovations since the publication of his anthology. Our goal is to develop a deeper understanding of the methods by reading the original papers and placing them in the context of what was occurring in the field at the time. Although our focus is on the development of methods in the field of epidemiology, what constitutes an "epidemiologic method" has become less clear as the lines dividing fields have blurred. Thus, several of the papers we will review come from the fields of computer science, econometrics, and biostatistics, among others.

Fall PHP2232 S01 17773 W 3:00-5:30(10) (N. Joyce)

PHP 2250. Advanced Quantitative Methods in Epidemiologic Research.

This course provides students with conceptual and quantitative tools based on counterfactual theory and causal diagrams (e.g., DAGs) to make causal inference using data obtained from observational studies. Causal diagrams will be used to provide alternative definitions of, provide clarifications regarding, or inform minimizing common biases. Non-, semi-, and fully parametric methods for minimizing bias will be discussed. These methods include standard regression, instrumental variables, propensity scores, inverse probability weighting, and marginal structural models. Settings when such methods may not be appropriate will be emphasized. Prerequisite: PHP 2200 and 2511; or PHP 2200 and 2508; or instructor permission.

Fall PHP2250 S01 17710 TTh 1:00-2:20(06) (C. Howe)

PHP 2260. Applied Epidemiologic Data Analysis.

This course will lead students through the process of writing a journal-style manuscript based on performing applied epidemiologic data analysis using statistical software (i.e., SAS). This course is best suited for students who already have a research idea in mind and data in hand prior to the start of the course or are able to develop a research question based on de-identified publicly available population-based datasets that will be recommended in the course. Course enrollment is restricted to graduate students.

Fall PHP2260 S01 17711 W 9:00-11:30 (S. Rosenthal)

PHP 2300. Research Methods in Behavioral Science.

This course provides a broad overview of the research methods typically used in behavioral and social health sciences research. Students will learn to evaluate qualitative and quantitative public health research critically, to design their own research protocol, and to conduct a systematic review of the literature on a health outcome of their choosing. Prior coursework in research methodology and quantitative methods is recommended but not required. Open to public health graduate students and advanced undergraduates concentrating in public health. Enrollment limited to 15.

Fall PHP2300 S01 18285 Th 4:00-6:30(04) (C. Kahler)

PHP 2310. Physical Activity and Public Health.

This course examines physical activity and health with an emphasis on the development of behavioral interventions to increase physical activity. Students gain knowledge of the impact of physical activity on health outcomes as well as differences in physical activity among subpopulations. They are introduced to behavioral theories, intervention design approaches, measurement issues, and methods that are relevant to physical activity. Through seminar discussions, a group project, and presentations, students engage with the material and gain skills in the development and evaluation of behavioral interventions. Students with an interest in behavioral interventions and physical activity will benefit from taking the course. Recommended prerequisites: PHP 2300 or PHP 2340 or PHP 2355. Enrollment limited to 15. Open to graduate students and seniors concentrating in Public Health.

Fall PHP2310 S01 18162 T 1:00-3:30 (B. Marcus)

PHP 2340. Behavioral and Social Science Theory for Health Promotion.

This course will help students become familiar with behavioral and social science theories commonly used for planning disease prevention/health promotion interventions. In addition to review of specific theories, topics to be discussed include: how theories are developed and tested; challenges and potential pitfalls in using theory for intervention planning; and creation of causal diagrams based on concepts from theories. Graduate students only. Enrollment limited to 25.

Fall PHP2340 S01 18277 W 9:00-11:30 (D. Williams)

PHP 2355. Designing and Evaluating Public Health Interventions.

Previously listed as PHP 1740. Examines health behavior decision-making and elements for design of health promotion interventions. Covers theories of health behavior (focusing on primary and secondary prevention), principles of intervention design, and reading of research literature. Emphasizes psychological, social, and proximate environmental influences on individuals' health-related behaviors. Restricted to undergraduates in the AB/MPH program, and graduate students. Prerequisite: PHP 0320 or equivalent. Enrollment limited to 35.

Fall PHP2355 S01 18276 MW 1:00-2:20 (N. Bulled)

PHP 2361. Proseminar in Health Behavior Intervention Research.

This course is required for doctoral students in Behavioral and Social Health Sciences. Students will consider advanced topics related to designing, implementing, and evaluating behavioral and social interventions to promote health. The course is designed as a proseminar, emphasizing discussion of primary readings and presentations by experienced intervention researchers.

Fall PHP2361 S01 18364 W 9:00-11:30 (K. Carey)

PHP 2371. Psychosocial and Pharmacologic Treatment of Substance Use Disorders.

Intended to provide an overview of the history of the treatment of substance use disorders; assessment methods designed to determine

progress in substance use treatment; and the current most common types of psychosocial and pharmacologic treatments for substance use. Enrollment limited to 20 graduate and medical students. Instructor permission required. BSHS students should take the class for a grade (ABC/NC), special students/postdocs should choose S/NC grade option.

Fall PHP2371 S01 18775 F 1:00-3:30 (P. Monti)

PHP 2410E. Medicare: A Data Based Policy Examination.

This course will explore the role of Medicare as America's health insurer for the elderly and disabled through the use of real Medicare insurance claims data, examining how Medicare policy changes in financing and regulation have affected the delivery and receipt of medical services. At the end of the course students will: 1) know the history of important Medicare policy changes; 2) be able to construct aggregated patient case mix acuity adjusted measures of provider quality using insurance claims data; 3) be able to conduct policy analyses using Medicare claims data that are sensitive to standardized coding schemes. Enrollment limited to 15 graduate students. Prerequisite: PHP 2120, 2508, or 2510. Instructor permission required.

Fall PHP2410E S01 18013 Th 1:00-3:30 (V. Mor)

PHP 2445. Minding the Gap: The U.S. Healthcare Safety Net.

The right to access affordable, quality health care in the US is not guaranteed. During our nation's history, a patchwork quilt of programs, referred to collectively as the safety net, has been crafted to address health care needs for a wide range of people who fall through the cracks. This course examines its structure, function, and effects. We introduce key features of the safety net: access, cost, quality, and outcomes. We pay particular attention to the nation's largest program, Medicaid. We highlight the unique challenges facing vulnerable groups: legal and illegal immigrants, homeless populations, veterans, and people with disabilities.

Fall PHP2445 S01 18040 F 9:20-11:50 (T. Shireman)

PHP 2446. Health Care Financing and Delivery.

The purpose of the course is to foster your development into a health services and policy researcher. To accomplish this, the course involves a general survey of substantive issues in payment and financing in healthcare. By the end of the course you should have knowledge of the main institutions, policy issues, and research areas and questions related to payment and financing in US healthcare. You should also have an initial understanding of where the most promising and pressing areas of research lie within this field. Thus, this course is about the past, present, and future of the field.

Fall PHP2446 S01 18579 F 1:00-3:30 (A. Ryan)

PHP 2451. Exchange Scholar Program.

Fall PHP2451 S01 16611 Arranged 'To Be Arranged'

PHP 2455A. Health Services Research Methods I.

Health services researchers use theories, models, and data to understand the health care system, assess the effectiveness of interventions (at multiple levels of the healthcare system), and inform health policy decisions. This course reviews the application of statistical and epidemiological principles to the design and analysis of health services research studies. The goal is to familiarize students with common study designs and methods in health services research, so that they can critically review the published literature and use these approaches in their own research.

Fall PHP2455A S01 18407 M 1:00-3:30 'To Be Arranged'

PHP 2465A. Introduction to Health Decision Analysis.

Many decisions in health are value-laden, involve competing objectives, or must be made under uncertainty. Health decision analysis is a structured approach to thinking through such decisional problems. This course introduces decision analysis and cost-effectiveness analysis for public health and clinical problems. It covers basic theory for decisionmaking; principles and techniques for mathematical modeling; and implementation, by analyzing archetypal decisional problems in health. Pre Requisites: Some facility with mathematical notation and basic concepts in probability (advanced undergraduate students can enroll after instructor approval). Recommended course: DATA 1010, MATH 1610, or APMA 1690.

Fall PHP2465A S01 18039 W 1:00-3:30 (T. Trikalinos)

PHP 2490. Methods in Pharmacoepidemiology.

This course will cover applications of epidemiological, biostatistical, and other methods to the study of outcomes of medical interventions (drugs, vaccines, biologics, devices, and procedures) in large numbers of people. The course will focus on more advanced study designs (e.g., sequential target trial emulation) and analytic methods (e.g., high-dimensional propensity score estimation). Methods for evaluating the robustness of study results (i.e., sensitivity and stability analyses) will also be discussed. Formal frameworks of causal inference will be used throughout the course and will be applied to substantive topics in pharmacoepidemiology, vaccine epidemiology, and medical device epidemiology. Prerequisites: PHP 2120, PHP 2140, or PHP 2150; and PHP 2507 or 2510; and PHP 2200; and PHP 2508 or PHP 2511; or instructor permission.

Fall PHP2490 S01 17712 Th 3:00-5:30 (A. Zullo)

PHP 2506. Biostatistics for Public Health Research.

This course will provide a foundation in statistical thinking for public health research. It is primarily intended for MPH students on the qualitative research track and MPH students in the accelerated program for clinicians. Others can register with instructor's permission. Students will learn the use and evaluate the appropriateness of statistical methods for analyzing medical and public health data, and learn how to interpret and present statistical findings. They will also gain hands-on experience using statistical software for data analysis.

Fall PHP2506 S01 18351 TTh 9:00-10:20(05) (S. Chrysanthopoulou)

PHP 2507. Biostatistics and Applied Data Analysis I.

The objective of the year-long, two-course sequence is for students to develop knowledge, skills and perspectives necessary to analyze data to answer public health questions. The year-long sequence focuses on statistical principles as well as the applied skills necessary to answer public health questions using data, including: data acquisition, data analysis, data interpretation and the presentation of results. Using lectures, labs and small group discussions, we focus on evaluating data sources, refining research questions, univariate and bivariate analyses, and presentation of initial results. Prerequisite: understanding of basic math concepts and terms. Enrollment limited to 50 students. Instructor permission required.

Fall PHP2507 S01 17714 W 6:30-8:00PM(06) (A. Gjelsvik)

Fall PHP2507 S01 17714 Th 1:00-2:20(06) (A. Gjelsvik)

PHP 2510. Principles of Biostatistics and Data Analysis.

Intensive first course in biostatistical methodology, focusing on problems arising in public health, life sciences, and biomedical disciplines. Summarizing and representing data; basic probability; fundamentals of inference; hypothesis testing; likelihood methods. Inference for means and proportions; linear regression and analysis of variance; basics of experimental design; nonparametrics; logistic regression. Priority given to students in School of Public Health graduate programs. All others with instructor permission. Limited to PhD students and MPH Epidemiology Concentrators MPH students not in the Epi concentration should take 2506 or 2507

Fall PHP2510 S01 18290 TTh 9:00-10:20(05) (S. Dunsiger)

PHP 2514. Applied Generalized Linear Models.

This course provides a survey of generalized linear models (GLMs) for outcomes including continuous, binary, count, survival and correlated data. This course will work through the basic theories of GLMs. Emphasis will be on understanding the implications of this theory and the applications to solving real data problems. Extensive use of computer programming will be required to analyze the data in this class. This course is designed for graduate and advanced undergraduate students who will be analyzing data and want to develop a practical hands on toolkit as well as understanding of the theoretical underpinnings of regression. Non-Biostatistics graduate students who have taken APMA1650, PHP2515, or PHP2520 (or an equivalent course) can request instructor permission to enroll.

Fall PHP2514 S01 18397 TTh 1:00-2:20(06) (S. Chrysanthopoulou)

PHP 2515. Fundamentals of Probability and Statistical Inference.

This course will provide an introduction to probability theory, mathematical statistics and their application to biostatistics. The emphasis of the course

will be on basic mathematical and probabilistic concepts that form the basis for statistical inference. The course will cover fundamental ideas of probability, some simple statistical models (normal, binomial, exponential and Poisson), sample and population moments, nite and approximate sampling distributions, point and interval estimation, and hypothesis testing. Examples of their use in modeling will also be discussed.

Fall PHP2515 S01 18374 MW 9:00-10:20 (A. Oganisian)

PHP 2520. Statistical Inference I.

First of two courses that provide a comprehensive introduction to the theory of modern statistical inference. PHP 2520 presents a survey of fundamental ideas and methods, including sufficiency, likelihood based inference, hypothesis testing, asymptotic theory, and Bayesian inference. Measure theory not required. Open to advanced undergraduates with permission from the instructor.

Fall PHP2520 S01 18398 TTh 9:00-10:20(05) 'To Be Arranged'

PHP 2550. Practical Data Analysis.

Covers practical skills required for successful analysis of scientific data including statistical programming, data management, exploratory data analysis, simulation and model building and checking. Tools will be developed through a series of case studies based on different types of data requiring a variety of statistical methods. Modern regression techniques such as cross-validation, bootstrapping, splines and bias-variance tradeoff will be emphasized. Students should be familiar with statistical inference as well as regression analysis. The course will use the R programming language.

Fall PHP2550 S01 18399 TTh 10:30-11:50(13) (A. Paul)

PHP 2560. Statistical Programming with R.

Statistical computing is an essential part of analysis. Statisticians need not only be able to run existing computer software but understand how that software functions. Students will learn fundamental concepts – Data Management, Data types, Data cleaning and manipulation, databases, graphics, functions, loops, simulation and Markov Chain Monte Carlo through working with various statistical analysis. Students will learn to write code in an organized fashion with comments. This course will be taught using both R and Julia languages in a flipped format. Non-Biostatistics graduate students who have taken PHP 2510 (or an equivalent course) can request instructor permission to enroll.

Fall PHP2560 S01 18380 TTh 2:30-3:50(12) (A. Paul)

PHP 2601. Linear Models.

This course will focus on the theory and applications of linear models for continuous responses. Linear models deal with continuously distributed outcomes and assume that the outcomes are linear combinations of observed predictor variables and unknown parameters, to which independently distributed errors are added. Topics include matrix algebra, multivariate normal theory, estimation and inference for linear models, and model diagnostics. Prerequisites: APMA 1650 or 1660, or taking PHP 2520 concurrently.

Note: The course will cover fundamental and advanced topics in linear models, and concepts related to the generalized linear models will not be covered during the course.

Fall PHP2601 S01 18385 TTh 1:00-2:20(06) 'To Be Arranged'

PHP 2610. Causal Inference and Missing Data.

Systematic overview of modern statistical methods for handling incomplete data and for drawing causal inferences from "broken experiments" and observational studies. Topics include modeling approaches, propensity score adjustment, instrumental variables, inverse weighting methods and sensitivity analysis. Case studies used throughout to illustrate ideas and concepts. Prerequisite: MATH 1610 or PHP 2511 or PHP 2580.

Fall PHP2610 S01 18343 TTh 9:00-10:20(05) (Y. Lee)

PHP 2690A. Advanced Topics in Biostatistics.

Introduction to applications of statistics and the way statisticians collaborate in interdisciplinary research. Guest lecturers from industry, government and academia will describe how statisticians fit into their environment. Techniques for effective collaboration and oral and written presentation of work including interviewing, writing proposals, giving talks, working with a team and consulting as an individual will be taught. Designed for graduate students (Masters or PhD) who would like to learn

how to collaborate on projects with non-statisticians. Permission of the instructor is required to enroll for the course.

Fall	PHP2690A	S01	18354	F	9:00-11:30	'To Be Arranged'

PHP 2700. Lessons (Un)Learned in Public Health and Humanitarian Response: A Historical Perspective.

Public health challenges complicate the response to humanitarian crises around the world, including disease outbreaks, war, and forcible displacement. Although the common narrative in our field is that the complex social, political and ideological challenges we're facing is unprecedented, an examination of the history of public health in acute crises reveals that many struggles confronting us today are neither entirely novel nor unique. This course posits that public health experts rarely understand the full nature of previous crises, and argues that a better understanding of historical events will improve our response to future crises. Through thoughtful reflection and interactive discussion, we will explore the oft-repeated themes that continue to challenge public health and humanitarian response to this day, and examine the progress we've made as a field. Most importantly, we will question why lessons identified so often fail to become lessons learned.

Fall	PHP2700	S01	18406	W	9:00-11:30	(C. Spencer)

PHP 2710. Interdisciplinary Perspectives on Disability and Death in the Global South.

The course fosters interdisciplinary critical and integrative thinking and writing about the leading causes of disease, disability and death in low and middle income countries, and potential solutions to prevent and ameliorate these burdens of disease. The first part focuses on measures of population health, health disparities, multi-causal and multi-level thinking, social epidemiology, community interventions and implementation research. These topics provide the fundamental intellectual frameworks for global public health. The second part presents scholars from key disciplinary areas contributing to global health research and practice from many academic units at Brown University. To conclude students present their potential research ideas.

Fall	PHP2710	S01	18160	M	1:00-3:30	(M. Sarker)

PHP 2720. Implementing Public Health Programs and Interventions in the Global South.

This course will focus on theory and methods related to the development, adaptation, implementation, and evaluation of public health interventions in the Global South. This course will focus on the influence of social, structural, political, and organizational processes on all aspects of development and evaluation of public health interventions in the Global South. We will cover the field of implementation science and critically analyze approaches for the evaluation of ongoing global public health programs. We will focus on the issue of how evidence-based interventions translate to practice and policy and the evaluation of the implementation of interventions in the "real-world."

Fall	PHP2720	S01	18286	F	9:00-11:30	(J. Pellowski)

PHP 2950. Doctoral Seminar in Public Health.

The purpose of this seminar is to facilitate discussions of current scientific literature in epidemiology, biostatistics, health services, behavioral and health sciences, and public health in general. The main goal is to expose students to current methodological issues and controversies, in an effort to integrate knowledge across disciplines. This seminar is only open to doctoral students in Epidemiology, Behavioral and Social Health Sciences, Biostatistics and Health Services Research.

Fall	PHP2950	S01	18333	M	12:00-12:50	(C. Spencer)

Fall	PHP2950	S02	18340	T	12:00-12:50	(Y. Lee)

Fall	PHP2950	S03	18341	W	12:00-12:50	(H. Ziobrowski)

Fall	PHP2950	S04	18342	F	1:00-1:50(08)	(K. Carey)

PHP 2980. Graduate Independent Study and Thesis Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHP 2981. Graduate Independent Study and Thesis Research (half-credit).

Half-credit independent study research course consisting of 90 credit hours of supervised independent work. Intended for master's students. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

PHP 2985. MPH Independent Study for Thesis Preparation and Research.

This optional half credit course may be taken up to two times during preparation for the MPH degree. It provides MPH students with self-directed thesis research and preparation time under the guidance of a thesis advisor. Prior to taking this course the student and advisor must reach agreement as to what constitutes satisfactory completion of the course (e.g., completion of a satisfactory literature review, attainment of specific thesis benchmarks, or completion of the thesis). Please check Banner for the correct section number and CRN to use when registering for this course.

PHP 2988. SPH Doctoral Teaching Experience (TE).

The Teaching Experience (TE) independent study is designed to enable graduate students to expand practical teaching skills as course coordinators/instructors under the mentorship of an experienced instructor. While the TE is a primarily a learning opportunity for doctoral students, secondarily, the activities associated with the TE should add value to the class by enhancing the experience of students enrolled in the course and assisting the faculty instructor with administration and delivery of the course. TEs are generally arranged according to student interests and goals and then approved by the student's Graduate Program Director. Once approved, a student will register for the independent study section with the instructor teaching the TE-associated course. Students should consult their Graduate Program Handbook for more information.

PHP 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	PHP2990	S01	16612	Arranged	'To Be Arranged'

Spr	PHP2990	S01	25266	Arranged	'To Be Arranged'

PHP XLIST. Courses of Interest to Concentrators in Community Health.

Healthcare Leadership

HCL 2060. Quality Improvement and the Learning Organization.

In this course, students will explore quality improvement systems, principles, drivers, and other tools that maximize patient outcomes and help create a healthcare learning organization. Students will discover how quality improvement creates value, and how to ultimately evolve/grow cultures, including a "just" culture and a culture of learning within their organization. Students will also design and implement at least two rapid cycle tests of change within their organizations. The course will explore both technical challenges and adaptive challenges (the latter ultimately concerning how to creatively empower all employees to view daily improvement as a key part of job responsibilities).

Fall	HCL2060	S01	18581	Arranged	(R. Peto)

Religious Studies

Contemplative Studies

COST 0067. Divine Drugs: Psychedelics, Religion, and Spirituality.

From LSD to magic mushrooms, mescaline to ayahuasca, psychedelics are drugs that alter consciousness and perceptions of reality. This course investigates the central role that religion and spirituality have played in the long, tangled history of psychedelics, from colonial eradication of psychedelics as indigenous sacraments, to psychedelic modes of expanding consciousness in 1960s counterculture; from the moral panic around these substances as a tool of mind control, to their present scientific investigation as a panacea for mental health, addiction, and self-realization. Interweaving primary sources and scholarly accounts on psychedelics, our inquiry will use an interdisciplinary approach, blending religious studies, philology, anthropology, the history of science, and art history. To explore this varied terrain, we survey the history of divine drugs around the world, even as we ruminate on the wisdom and philosophy they have inspired over the ages.

Fall	COST0067	S01	18789	TTh	1:00-2:20(06)	(F. Moore-Gerety)

COST 0120. The Classical Chinese Philosophy of Life.

An introduction to the origins and early development of the indigenous religious thought of China from the oracle bone divination of the Shang Dynasty to the ethical philosophy of Confucianism and the cosmology and

mysticism of Daoism. The course will seek to identify and elucidate the basic elements of the distinctive Chinese world view and demonstrate how they have shaped the nature of religious practice and experience and how they have been shaped by them. Works of interpretive scholarship will be used to supplement the primary texts in translation that will form the course. Optional lab section.

Fall COST0120 S01 17760 MWF 10:00-10:50(14) (L. Difiori)

COST 0526. This Whole World is OM: Mantras in Indian Religions.

A mantra is a syllable or formula used in ritual and meditation. Mantras are central to Indian religions—not only Hinduism, but also Jainism, Buddhism, Sufism, and Sikhism. Some mantras are made up of words and language—usually in Sanskrit—while others are sound fragments with no semantic meaning. The sacred syllable OM, now a global symbol of Eastern spirituality, exemplifies the power and authority of mantra. What are mantras? What do they accomplish? How do they shape identities, beliefs, and practices? Engaging with sacred utterance in various media, this course explores the world of mantras in India and beyond.

Fall COST0526 S01 18792 T 4:00-6:30(07) (F. Moore-Gerety)

COST 0535. Self Transformation and Transcendence in Later Daoist Contemplative Traditions.

Who are we? How do we fit in the universe? Like many other systems of thought around the world, the Daoist tradition approached these questions both through the creation of texts, teachings, and theory, and through the development of at times extremely complex embodied contemplative practices. Starting from a perspective of a person not as a unitary, monolithic entity, but rather as a composite of energies and influences, these practices seek to harmonize, balance, and transform the person. This course will explore how the possibilities of personal transformation were expressed in Daoist contemplative literature from the first centuries CE up to the modern day. Contemplative practice labs will also offer students an opportunity to explore the ideas in the texts through direct experience. No prerequisites.

Fall COST0535 S01 17767 M 3:00-5:30(03) (L. Difiori)

COST 0565. The Sound of One Hand: Zen in Asia and the West.

When we casually hear about Zen it seems loosely associated with being cool or hip, like the seemingly mysterious “Sound of One Hand.” But what does “Zen” really mean and how did it come into the modern Western cultural landscape? We explore the Zen traditions of East Asia and trace their transmission to the West through a study of their writings and practices. From the arrival of Zen master Shaku Sōen Kōgaku at the Parliament of World Religions in 1893, through the writings of D.T. Suzuki, to the Beat Zen of the 1950’s and the establishment of centers of Zen practice, we will help you to appreciate in your own lives what the Daily Show calls your “moments of Zen.”

Fall COST0565 S01 18815 W 3:00-5:30(10) (H. Roth)

COST 1082. Me, Myself, and I: Exploring Senses of Self from a Multidisciplinary Perspective.

Human beings have long puzzled over how precisely to conceptualize and understand what and how it is that we are. Questions about the nature of the self have informed the speculations of philosophy, the soteriologies of religion, the trajectories of self-cultivation in contemplative traditions, and the therapeutics of psychology. Recently, cognitive science and phenomenology have developed new explanations for how multiple senses of self shape lived experience and give rise to various self-concepts. Students in this course will engage with dimensions of selfhood that we often take for granted by studying senses of self from multidisciplinary and cross-cultural perspectives.

Fall COST1082 S01 18810 Th 4:00-6:30(04) (N. Canby)

COST 1910. Individual Study Project – Semester 1.

COST Individual Study Project Semester 1, directed reading and research arranged with individual faculty. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

COST 1920. Individual Study Project - Semester 2.

COST Individual Study Project Semester 2, directed reading and research arranged with individual faculty. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

COST 1950. Senior Concentrators' Seminar.

A selection of topical readings that will enable concentrators in the Sciences and Humanities Tracks of the concentration to synthesize their knowledge of the field of Contemplative Studies and its current principal issues. Students will also share ideas and methods regarding the research and writing of their Capstone Projects, which typically they will be working on concurrently via their other course.

Spr COST1950 S01 26023 M 3:00-5:30(13) (L. Difiori)

COST 1980. Thesis Preparation.

Required of seniors in the honors program, (second semester of two-semester sequence that includes COST 1950 in first semester). Open to others only by permission of the Director. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

Religious Studies

RELS 0010. Happiness and the Pursuit of the Good Life.

What is happiness, and how does it relate to the “good life,” or a life well-lived? This is an age-old question, and in this course we will investigate religious and philosophical answers alongside insights drawn from modern positive psychology. A major goal of the course is to give you intellectual tools that will help you to construct a meaningful life. Areas of study will include value determination; gratitude; status and wealth; and mindfulness.

Spr RELS0010 S01 25988 TTh 2:30-3:50(11) (M. Sattlow)

RELS 0012. The Religious Lives of Everyday People.

For centuries, scholars have looked to religious institutions, theological doctrines, and sacred texts to explain religion’s form and function in culture and society. And while this approach has enabled scholars to neatly prescribe what counts as religious, it’s also caused them to ignore the ways people’s daily faith practices make a mess of this work. Drawing on sub-fields in religious studies, anthropology, and sociology, this course explores how formal ideas of religion expand when confronted with the normality of everyday life. From cooking and talking to prayer and devotion, the “religious” and “non-religious” things people do tell us a lot about how religion animates and is animated by lived experience, and how porous the boundary is between the “sacred” and “profane”.

Spr RELS0012 S01 26013 TTh 2:30-3:50(11) (K. Street)

RELS 0045. Buddhism and Death.

Death is universal but seldom discussed in contemporary culture. In this class we will address how the varieties of Buddhist religion represent and understand dying, death, and the afterlife. Using images, films, and texts, we will ask, How should we die? How does death influence the living? Is there an afterlife? What should be done with dead bodies? The class will move between theories and practices, and past and current events. Coming to terms with these diverse materials may reveal to us some of our own assumptions about death, dying, and the afterlife.

Spr RELS0045 S01 26015 TTh 10:30-11:50(09) (J. Protass)

RELS 0060D. Antisemitism: A History (JUDS 0063).

Interested students must register for JUDS 0063.

Fall RELS0060DS01 18891 Arranged 'To Be Arranged'

RELS 0060E. Angels and Demons Past and Present (JUDS 0064).

Interested students must register for JUDS 0064.

Fall RELS0060ES01 18894 Arranged 'To Be Arranged'

RELS 0067. Divine Drugs: Psychedelics, Religion, and Spirituality.

From LSD to magic mushrooms, mescaline to ayahuasca, psychedelics are drugs that alter consciousness and perceptions of reality. This course investigates the central role that religion and spirituality have played in the long, tangled history of psychedelics, from colonial eradication of psychedelics as indigenous sacraments, to psychedelic modes of expanding consciousness in 1960s counterculture; from the moral panic around these substances as a tool of mind control, to their present scientific investigation as a panacea for mental health, addiction, and self-realization. Interweaving primary sources and scholarly accounts on psychedelics, our inquiry will use an interdisciplinary approach, blending religious studies, philology, anthropology, the history of science, and art history. To explore this varied terrain, we survey the history of divine drugs around the world, even as we ruminate on the wisdom and philosophy they have inspired over the ages.

Fall RELS0067 S01 18791 TTh 1:00-2:20(06) (F. Moore-Gerety)

RELS 0070H. The Parting of the Ways?: Questioning Jewish/Christian Difference (JUDS 0608)..

Interested students must register for JUDS 0608.

Fall RELS0070HS01 18900 Arranged 'To Be Arranged'

RELS 0090A. Women and Gender in Ancient Religions.

What was religion like for women in the ancient Mediterranean world? What experiences, emotions, and constraints characterized women's religious lives? What was public and what was private? What were the family issues involved? How were religions gendered? Were there major differences between religions that included goddesses and priestesses, and those that did not? Were notions of gender fixed or fluid? Could they enable religious freedoms for women? We will explore these and other questions through a consideration of religions Greek, Roman, Jewish, and Christian between roughly 500 BCE and 500 CE, with a focus on the Roman Empire. Discussion

Fall RELS0090AS01 17747 Th 4:00-6:30(10) (S. Harvey)

RELS 0090B. Indigenous Ecologies.

A collaborative exploration of (mainly North American) Indigenous traditions, practices, and beliefs in relation to ecology. We will learn about a variety of Indigenous environmental perspectives and practices as expressed by Indigenous authors, elders, film producers, and community members. Topics will include: Indigenous knowledge systems, environmental activism, sacred lands, the importance of place, kinship relations to the human and more-than-human, climate change adaptation, storytelling, tribal and food sovereignty, and how settler colonialism and dispossession have affected Indigenous populations in their relation to the environment. Additionally, we will learn about Brown University's relation to local Indigenous lands and populations, and how Indigenous research methods can inform the Brown community of scholars. Our community of learning will discuss broad topics that relate to life and learning at the University, and will offer guidance and support for students' first year experience at Brown.

Fall RELS0090BS01 18529 M 3:00-5:30(03) (M. Cladis)

RELS 0090F. Friendship in the Ancient World.

How have ancient societies understood friendship, and how do ancient ideas about friendship differ from or resemble those of contemporary Westerners? This seminar, a comparative investigation of the ways in which friendship has been represented in the Hebrew Bible, Mesopotamian literature, and Greco-Roman texts, will address these and other questions through study of materials such as the Epic of Gilgamesh, the Iliad, the Book of Ruth, 1 and 2 Samuel (on Jonathan and David), the Wisdom of Ben Sira (Sirach), and Aristotle's Nicomachean Ethics. Enrollment limited to 19 first year students.

Fall RELS0090FS01 17759 W 3:00-5:30(10) (S. Olyan)

RELS 0120. The Classical Chinese Philosophy of Life.

An introduction to the origins and early development of the indigenous religious thought of China from the oracle bone divination of the Shang Dynasty to the ethical philosophy of Confucianism and the cosmology and mysticism of Daoism. The course will seek to identify and elucidate the basic elements of the distinctive Chinese world view and demonstrate how they have shaped the nature of religious practice and experience and how they have been shaped by them. Works of interpretive scholarship will be used to supplement the primary texts in translation that will form the course. Optional lab section.

Fall RELS0120 S01 17761 MWF 10:00-10:50(14) (L. Difiori)

RELS 0260. Religion Gone Wild: Spirituality and the Environment.

A study of the dynamic relation between religion and "nature" or the more-than-human world. Religion, in this course, includes forms of religion within and outside the bounds of conventional religious traditions. In this course, then, religion includes Buddhism, Christianity, and Aboriginal religion, but also ecofeminism, nature literature, and environmentalism. Topics in this study of religion, ethics, and environmental humanities include: religious depictions of humans in relation to "nature" and the more-than-human; the contribution of religions to environmental degradation and environmental health; religion and environmental justice; and North American and Australian indigenous eco-spiritual perspectives.

Spr RELS0260 S01 26016 TTh 1:00-2:20(08) (M. Cladis)

RELS 0290D. Islamic Sexualities.

In this course we examine gender and sexuality in Muslim cultures, as well the ways in which Islam is imagined in relationship to gender and sexuality. We will think about how particular constructions of gender and sexuality affect the representation of Islam and Muslims in the US and abroad, especially in films and documentaries, which form a critical component of this course. Students will learn to engage with and complicate key terms and themes including "masculinity," "cultural difference," "women's and LGBT rights," and "modernity/civilization" that are widely, and often uncritically, deployed in current representations of Islamic culture.

Spr RELS0290DS01 26017 MWF 1:00-1:50(06) (N. Khalek)

RELS 0290H. Defense Against the Dark Arts in the Ancient World.

Alongside their Jewish and Pagan neighbors, ancient Christians sought to control and defend themselves against unseen forces teeming around them. They bound powerful angels to their will and harnessed the spirits of the recently deceased to activate their spells. Though none found the Elixir of Life, they left behind spells, recipes, and talismans as evidence of their quest to master spirits both hostile and sympathetic. This course will interrogate Christian and non-Christian conceptions of magic, its relationship with "religion" and "philosophy," contextualize Christian magical practices alongside their neighbors, and conclude by examining the reception of "magic" into the modern West.

Spr RELS0290HS01 26018 MWF 10:00-10:50(03) (J. Han)

RELS 0405. Arts of the Sacred and the Demonic in the Ancient Mediterranean.

From rural temple to urban shrine, to elegant synagogue or village church, from household prayer nook to adorned tomb, people in the ancient world honored, encountered, and experienced their gods. They practiced a piety in which human flourishing depended on gestures, rituals, and built articulations of devotion mediated by beauty. But holy powers could also be malevolent, so ancient art served to protect, warn, or ward off evil spirits. This course will explore the art, architecture, and material cultures of ancient Greeks, Romans, Jews, and Christians between the 6th century BCE and the 6th century CE. We will consider a wide variety of evidence, including texts, sculpture, frescoes, mosaics, architecture, and domestic artifacts, to explore the many ways in which these distinct but connected communities expressed their beliefs through visual representations and material practices.

Fall RELS0405 S01 18025 MWF 12:00-12:50(15) (S. Harvey)

RELS 0526. This Whole World is OM: Mantras in Indian Religions.

A mantra is a syllable or formula used in ritual and meditation. Mantras are central to Indian religions—not only Hinduism, but also Jainism, Buddhism, Sufism, and Sikhism. Some mantras are made up of words and language—usually in Sanskrit—while others are sound fragments with no semantic meaning. The sacred syllable OM, now a global symbol of Eastern spirituality, exemplifies the power and authority of mantra. What are mantras? What do they accomplish? How do they shape identities, beliefs, and practices? Engaging with sacred utterance in various media, this course explores the world of mantras in India and beyond.

Fall RELS0526 S01 18793 T 4:00-6:30(07) (F. Moore-Gerety)

RELS 0535. Self Transformation and Transcendence in Later Daoist Contemplative Traditions.

Who are we? How do we fit in the universe? Like many other systems of thought around the world, the Daoist tradition approached these questions both through the creation of texts, teachings, and theory, and through the development of at times extremely complex embodied contemplative practices. Starting from a perspective of a person not as a unitary, monolithic entity, but rather as a composite of energies and influences, these practices seek to harmonize, balance, and transform the person. This course will explore how the possibilities of personal transformation were expressed in Daoist contemplative literature from the first centuries CE up to the modern day. Contemplative practice labs will also offer students an opportunity to explore the ideas in the texts through direct experience. No prerequisites.

Fall RELS0535 S01 17766 M 3:00-5:30(03) (L. Difiori)

RELS 0545. Confucianism and Its Critics.

This course confronts the changing historical phenomenon we call "Confucianism" on its own terms, as represented by its advocates,

as well as from the perspective of its interlocutors and critics. It is an opportunity to become familiar not only with the Confucian canon and its main commentarial traditions, which undergirded education in East Asia into the nineteenth century, but also with the ways in which these ideas were rejected, adjusted, and reconfigured in early Daoist discussions, Neo-Confucian debates with Buddhists, and modern disputes over their socioeconomic, political, and/or gender impact. Readings are drawn from primary Chinese, Korean, and Japanese texts in translation, and from modern interpretations of Confucianism and its legacy. The course format is primarily discussion and short lecture. No prerequisites. Counts for concentration credit in East Asian Studies and Religious Studies.

Fall RELS0545 S01 18762 TTh 1:00-2:20(06) (J. Sawada)

RELS 0565. The Sound of One Hand: Zen in Asia and the West.

When we casually hear about Zen it seems loosely associated with being cool or hip, like the seemingly mysterious "Sound of One Hand." But what does "Zen" really mean and how did it come into the modern Western cultural landscape? We explore the Zen traditions of East Asia and trace their transmission to the West through a study of their writings and practices. From the arrival of Zen master Shaku Sōen Kōgaku at the Parliament of World Religions in 1893, through the writings of D.T. Suzuki, to the Beat Zen of the 1950's and the establishment of centers of Zen practice, we will help you to appreciate in your own lives what the Daily Show calls your "moments of Zen."

Fall RELS0565 S01 18817 W 3:00-5:30(10) (H. Roth)

RELS 0600E. Islamic Modernities: Religion, Culture, and Power.

In this class, we will explore the culture and practice of contemporary Islam in a variety of geographical contexts. From the United States to South Asia, from Europe to the Middle East, we will look at how Islam is practiced, discursively shaped, and represented across a variety of media. We will also introduce and learn about major phenomena including orientalism, colonialism/modernity, and the post-modern--what do these terms mean, and why are they relevant to understanding the Islamic world? No previous study of Islam or religious studies is required for this course, and it is open to all undergraduates.

Fall RELS0600E S01 17769 TTh 1:00-2:20(06) (N. Khalek)

RELS 1000. Methods in Religious Studies.

Intensive introduction to classical and contemporary theories of religion and the principal methods for the study of religion. Junior seminar for religious studies concentrators. Enrollment limited to 25.

Fall RELS1000 S01 17770 W 3:00-5:30(10) (K. Street)

RELS 1050I. The Talmud (JUDS 1630).

Interested students must register JUDS 1630.

Fall RELS1050I S01 18901 Arranged 'To Be Arranged'

RELS 1325C. The Virgin Mary in Christian Tradition.

Who was the Virgin Mary? How did she become important, when and to whom? What was inherited? What was new? How were Mary's meanings demonstrated? A study in the developing theological and devotional traditions regarding Mary the Mother of Jesus, focused on the first thousand years of Christian history. Major theological positions; relationship to pre-existing religious practices and goddess traditions; the role of popular violence; Marian piety; Marian relics; Mary as cultural metaphor. Seminar format.

Spr RELS1325C S01 26019 TTh 1:00-2:20(08) (S. Harvey)

RELS 1385. Religion and Postmodernism.

This advanced seminar treats the central ideas in the thought of Zizek, Sloterdijk, Bauman, and others. It will pay particular attention to the idea of God in the works of Derrida, Foucault, and Deleuze as it filters through these contemporary, popular efforts. Students will trace some of the normative aspects of a postmodern ethics and theology by looking at "Emergent" churches, "New Thought", and post-foundational Christian theology in practice.

Fall RELS1385 S01 17829 Th 4:00-6:30(04) (A. Willis)

RELS 1445. Sinners and Seers in Japanese Literature.

Exploration of Japanese Buddhist sensibilities as expressed in poetry, popular tales, drama, and fiction. Recurring themes include wrongdoing and its karmic consequences; renunciation; tension between aesthetic and religious commitments; pilgrimage as creative process; the role of nature in the quest for enlightenment. Reading and discussion in a seminar-style

format. A previous course in Buddhism or East Asian culture is helpful but not required. Counts for concentration credit in Religious Studies and East Asian Studies.

Fall RELS1445 S01 17830 M 3:00-5:30(03) (J. Sawada)

RELS 1600B. The Ethics of Community.

Community as an ideal promises a common life with others, sharing norms and values. On the other hand, it can easily engender stultifying conformity and homogeneity. Religion has and continues to play a key role in forming communities. This course will examine questions surrounding community, with a particular focus on how communities cope with loss, suffering, and trauma. We will also pose questions about the boundaries of communities, including ecological questions about community between humans and non-humans. We will pay special attention to Jewish thought on these issues. Readings will include Derrida, Levinas, Butler, and Latour.

Spr RELS1600B S01 26020 W 3:00-5:30(10) (S. Bush)

RELS 1990. Individual Study Project.

Directed reading and research arranged with individual faculty. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

RELS 1995. Senior Capstone Seminar.

This course is a culminating experience for the Religious Studies concentration. While introductory gateway courses introduced concentrators to the discipline and upper-level courses examined particular topics or methodologies, this capstone seminar provides concentrators with an opportunity to synthesize what they have learned, while also delving more deeply into the themes and topics that they find most central to their own interests. Thesis writers receive support including small group interaction and supportive criticism. Non-thesis writers create a capstone portfolio over the course of the semester. Through activities and guest presentations, all concentrators will connect their studies to their future goals.

Fall RELS1995 S01 17831 M 3:00-5:30(03) (J. Protass)

RELS 1999. Thesis Preparation.

Required of seniors in the honors program. Open to others only by permission of the chair of the department. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

RELS 2000B. Method and Theory in the Study of Religion: Interpreting Religion.

This seminar examines diverse methodological and theoretical resources for studying religion. Readings may include influential recent theorists from across the humanities and social sciences, as well as contemporary scholars of religion who bring such theorizing to bear on religion.

Fall RELS2000B S01 18443 M 12:00-2:30 (J. Han)

RELS 2110B. Radical Romanticism: Progressive Democratic, Environmental, and Religious Traditions.

Is America fundamentally defined by Romanticism? We will explore the sustained legacies of Romanticism in America, giving special attention to the interrelated topics of religion, democracy, and the environment, by reading such authors as Emerson, Margaret Fuller, Thoreau, Whitman, and Fredrick Douglas; William James, George Santayana, and W.E.B. Du Bois; and Terry-Tempest Williams, Barry Lopez, and Wendell Berry.

Spr RELS2110B S01 26021 M 3:00-5:30(13) (M. Cladis)

RELS 2380A. Chinese Buddhist Texts.

Each week we will engage in close reading through translation of Buddhist texts in the original Chinese. Selections will draw from sutras, commentaries, prefaces, colophons, biographies, and Chan literature. The course introduces research methods, major sources, dictionaries, and digital tools, and culminates in a seminar paper demonstrating original research using the tools and methods practiced in class. Prerequisite: Reading competence in classical Chinese.

Fall RELS2380A S01 17833 Th 4:00-6:30(04) (J. Protass)

RELS 2450. Exchange Scholar Program.

Fall RELS2450 S01 16623 Arranged 'To Be Arranged'

Fall RELS2450 S02 16624 Arranged 'To Be Arranged'

Spr RELS2450 S01 25275 Arranged 'To Be Arranged'

RELS 2460. Professionalization Seminar.

In addition to acquiring and practicing the arts of scholarship, teaching, and service, graduate students need to learn how to relate to colleagues, apply and interview for jobs, and submit proposals to conferences and publishers. The details of these processes are often mysterious, even to the initiated. The purpose of this seminar is to explore these various features of academia and graduate studies in a well informed manner. It is intended for fourth-year doctoral students in the Department of Religious Studies. Instructor permission required.

Spr RELS2460 S01 26022 W 10:00-12:30 (N. Khalek)

RELS 2500. Readings in Religious Ethics.

This course will survey recent influential works in religious ethics, with a focus on Christian ethics and Jewish ethics. Texts will include: Constance M. Furey, Sarah Hammerschlag, and Amy Hollywood, *Devotion: Three Inquiries in Religion, Literature, and Political Imagination*; Biko Mandela Gray, *Black Life Matter: Blackness, Religion, and the Subject*; Kevin Hector, *Christianity as a Way of Life: A Systematic Theology*; Sarah Hammerschlag, *The Figural Jew: Politics and Identity in Postwar French Thought*, and Laurie Zoloth, *An Ethics for the Coming Storm: Jewish Thought and Global Warming*.

Fall RELS2500 S01 18527 W 12:00-2:30 (S. Bush)

RELS 2890. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for preliminary examinations.

Fall RELS2890 S01 16625 Arranged 'To Be Arranged'

Spr RELS2890 S01 25276 Arranged 'To Be Arranged'

RELS 2910. Independent Research.

The staff is willing to offer independent reading courses in selected areas. See the Instructor for more information. Please check Banner for the correct section number and CRN to use when registering.

RELS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall RELS2990 S01 16626 Arranged 'To Be Arranged'

Spr RELS2990 S01 25277 Arranged 'To Be Arranged'

South Asian Studies**SAST 0067. Divine Drugs: Psychedelics, Religion, and Spirituality.**

From LSD to magic mushrooms, mescaline to ayahuasca, psychedelics are drugs that alter consciousness and perceptions of reality. This course investigates the central role that religion and spirituality have played in the long, tangled history of psychedelics, from colonial eradication of psychedelics as indigenous sacraments, to psychedelic modes of expanding consciousness in 1960s counterculture; from the moral panic around these substances as a tool of mind control, to their present scientific investigation as a panacea for mental health, addiction, and self-realization. Interweaving primary sources and scholarly accounts on psychedelics, our inquiry will use an interdisciplinary approach, blending religious studies, philology, anthropology, the history of science, and art history. To explore this varied terrain, we survey the history of divine drugs around the world, even as we ruminate on the wisdom and philosophy they have inspired over the ages.

Fall SAST0067 S01 18834 TTh 1:00-2:20(06) (F. Moore-Gerety)

SAST 0526. This Whole World is OM: Mantras in Indian Religions.

A mantra is a syllable or formula used in ritual and meditation. Mantras are central to Indian religions—not only Hinduism, but also Jainism, Buddhism, Sufism, and Sikhism. Some mantras are made up of words and language—usually in Sanskrit—while others are sound fragments with no semantic meaning. The sacred syllable OM, now a global symbol of Eastern spirituality, exemplifies the power and authority of mantra. What are mantras? What do they accomplish? How do they shape identities, beliefs, and practices? Engaging with sacred utterance in various media, this course explores the world of mantras in India and beyond.

Fall SAST0526 S02 19020 T 4:00-6:30(07) (F. Moore-Gerety)

SAST 1970. Independent Study.

Section numbers vary by instructor. Please check CAB for the correct section number and CRN to use when registering for this course.

SAST XLIST. Courses of Interest to Concentrators.**Science, Technology and Society****STS 0702. Invisible Labor in the Making of Science.**

Invisible Labor in the Making of Science is about the people who are concealed, eclipsed, or anonymized in accounts of scientific research. Many scientific workers—including translators, activists, archivists, technicians, curators, and ethics review boards—are absent in publications and omitted from stories of discovery. Professional scientists are often celebrated, yet they are expected to uphold principles of 'objective' self-denial. This course will explore these silences and omissions to reveal how invisibilities have shaped twentieth and twenty-first century science. The course modules invites comparisons across geographic, temporal, and disciplinary boundaries. The modules also facilitate different forms of self-reflexive practice, and will open the possibilities of research avenues for students; how we should approach research and narrative method; and how contemporary interest in invisible labor relates to established discursive traditions in the historiography of science and STS.

Spr STS0702 S01 25410 TTh 2:30-3:50(11) (X. Chacko)

STS 1000. Introduction to Science, Technology and Society: Theories and Controversies.

What is "science"? How do scientific ideas become knowledge? What is the nature of scientific objectivity, how can it be compromised? What is a scientific community, scientific consensus, and scientific authority? What roles does science play in our culture, and how is science related to other social institutions and practices? The interdisciplinary field of science studies is introduced through exploration of topics that include: gender and race, psychiatric classification, the drug industry, science and religion, and the use of nuclear weapons during World War II. Enrollment limited to 30 sophomores, juniors, seniors; others may enroll with permission of instructor.

Spr STS1000 S01 25429 TTh 1:00-2:20(08) (L. Rieppel)

STS 1700D. Gathering Hope: Stories for Earthly Survival.

Human actions have had irreversible changes at a planetary level including in the composition of the atmosphere, land, and oceans, the climate, the rapid extinctions of life, and an increase in the prevalence of toxic chemicals. The history of colonialism, enslavement, and plantations are also intertwined in ruin of the environment. Feminist science studies provide a guide to the arts of noticing and staying with the troubles of our time but also for imagining otherwise. In this course we gather hope from ecofeminism in order to move towards a justice-oriented future. We do this by delving into the literature on ecofeminism alongside ecological speculative fiction. Recognizing that solutions to environmental problems require a feminist attunement, we can start to understand the implications that our ethical commitments have to the future of life on the planet.

Spr STS1700D S01 25412 W 3:00-5:30(10) (X. Chacko)

STS 1700T. Race, Gender, and Technology in Everyday Life.

Using examples from everyday life, this course investigates how preferences for certain technologies are shaped by social arrangements that reflect power relations. By considering the origins, materiality, and practices of use for a diverse range of technologies, from the digital to the reproductive, this course will interrogate the socio-political and ethical fallout of consumer, infrastructural, personal, legal, and medical technologies. Reading about the history and anthropology of technology, watching films that engage the reception and making of science and technology, and imagining the future of technological solutions, this course analyzes how technologies are used to create and maintain boundaries around social categories of race, nation, sex, gender, and ability.

Fall STS1700T S01 16939 TTh 2:30-3:50(12) (X. Chacko)

STS 1900. Senior Seminar in Science, Technology and Society.

This is an advanced seminar that uses a Problem Based Learning style pedagogy to explore real-world problems in STS. To solve assigned problems students will want to explore critical scholarship in areas *such as* laboratory studies, feminist science and technology studies, the rhetoric and discourse of science and technology, expertise and the public understanding of science. Course is intended for Science and Society

senior concentrators, but is open to others with appropriate background. Enrollment limited to 20.

Fall STS1900 S01 16940 W 3:00-5:30(10) (X. Chacko)

STS 1970. Independent Study in Science and Society.

Independent reading and research work in Science and Society is available to students who have completed introductory and intermediate level work in Science and Society. A decision to enroll must be made via consultation with the concentration advisor and the faculty advisor for the course. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Prerequisite: STS 1400. Open to junior and senior concentrators in Science and Society; instructor permission required.

STS 1971. Independent Study in Science and Society.

Independent reading and research work in Science and Society is available to students who have completed introductory and intermediate level work in Science and Society. A decision to enroll must be made via consultation with the concentration advisor and the faculty advisor for the course. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Prerequisite: STS 1400. Open to junior and senior concentrators in Science and Society; instructor permission required.

STS XLIST. Science, Technology, and Society XLIST.

Slavic Languages

Czech

CZCH 0100. Introductory Czech.

Introduces the performance of basic tasks in Standard Czech, highlights of Czech culture, and a worldview of a nation uniquely located on the threshold of western and eastern Europe. Emphasis on oral communication. Five meetings per week and use of audio/visual materials. Enrollment limited to 18.

Fall CZCH0100 S01 18031 TTh 10:30-11:50(13) (M. Fidler)

CZCH 0200. Introductory Czech.

Introduces the performance of basic tasks in Standard Czech, highlights of Czech culture, and a worldview of a nation uniquely located on the threshold of western and eastern Europe. Emphasis on oral communication. CZCH 0200 includes readings of annotated literary texts on the Web. Five meetings per week and use of audio/visual materials. Enrollment limited to 18.

Spr CZCH0200 S01 26225 TTh 10:30-11:50(09) 'To Be Arranged'

Polish

PLSH 0300. Intermediate Polish.

This course is for students who have completed first-year Polish. In this course you will further develop skills in speaking, reading, writing and understanding Polish. By the end of this course, you will be able to carry on basic conversations in Polish on many topics from your daily life. You will be able to write notes and simple letters to Polish friends or keep a journal in Polish. You will also have the skills to read basic texts. Enrollment limited to 18.

Fall PLSH0300 S01 18321 MTThF 12:00-12:50 'To Be Arranged'

PLSH 0400. Intermediate Polish.

This course is designed for students who want to continue exploring Polish language and culture and have completed the Introductory Polish language sequence (PLSH 0150/0100, 0200 and 0300) or have otherwise acquired basic proficiency required for the second year sequence. The main goal of the course is to enhance students' Polish language skills (speaking, writing, reading and listening) through authentic participation in Polish culture: film, politics, and poetry. The course incorporates various Internet resources, selected contemporary Polish films as well as up-to-date news from Poland. Discussed topics and level of difficulty will be determined by students' individual interests and needs.

Spr PLSH0400 S01 26313 Arranged (J. Lion)

PLSH 1050. Polish Cinema: Uneven Histories, Uneasy Aesthetics.

This course offers an in-depth survey of Polish cinema, spanning from the influential era of the Polish Film School (1955–65) through the Cinema of Moral Anxiety (1976–81) to contemporary, critically acclaimed

cinematic expressions. We will begin with seminal works by directors such as Andrzej Wajda, Roman Polański, Andrzej Żuławski, and Krzysztof Kieślowski, exploring their unorthodox aesthetic innovations and thematic preoccupations, including Poland's infamous legacy as a site of excessive violence during the Second World War, as well as the existential condition of individuals under socialism. Subsequently, we will transition to the post-communist era, focusing on contemporary efforts to revisit Poland's past through haunting explorations of Polish-Jewish relationships, attentiveness towards minority groups, and the darkly comedic depictions of "the provincial" in films by Paweł Pawlikowski, Małgorzata Szumowska, and Wojtek Smarzowski, among others.

Fall PLSH1050 S01 18322 T 4:00-6:30(07) 'To Be Arranged'

Russian

RUSS 0100. Introductory Russian.

Introduction to Russian language and culture. Oral and written communication in Russian; emphasis on the literary and everyday culture of Russia and the former U.S.S.R., including the changes that have reshaped everyday life for citizens of Russia. Five meetings per week, plus use of audio, video, and web materials. Enrollment limited to 18.

Fall RUSS0100 S01 18044 MWF 11:00-11:50(16) (L. deBenedette)

Fall RUSS0100 S01 18044 TTh 12:00-12:50(16) (L. deBenedette)

Fall RUSS0100 S02 18045 MTWThF 12:00-12:50(15) (L. deBenedette)

RUSS 0110. Intensive Russian.

Intensively-paced introduction to Russian culture and language; completes one year of study in one semester (RUSS 0110 = RUSS 0100-0200). Comprehension and use of contemporary Russian; fundamentals of Russian grammar; vocabulary acquisition; focus on oral communication. Introduces aspects of everyday culture of Russia and the former U.S.S.R. Ten to fifteen hours weekly work outside the classroom. Enrollment limited to 18.

Spr RUSS0110 S01 26224 T 9:00-10:20(03) (L. deBenedette)

Spr RUSS0110 S01 26224 MWF 12:00-12:50(03) (L. deBenedette)

Spr RUSS0110 S01 26224 MWF 10:00-10:50(03) (L. deBenedette)

RUSS 0200. Introductory Russian.

Introduction to Russian language and culture. Oral and written communication in Russian; emphasis on the culture of Russia and the former U.S.S.R., including the changes that have reshaped everyday life for citizens of Russia. Five meetings per week, plus use of audio, video, and Web materials. Prerequisite: RUSS 0100 or RUSS 0250. Enrollment limited to 18.

Spr RUSS0200 S01 26320 MWF 11:00-11:50(04) (L. deBenedette)

Spr RUSS0200 S01 26320 TTh 12:00-12:50(04) (L. deBenedette)

Spr RUSS0200 S02 26321 MTWThF 12:00-12:50 (L. deBenedette)

RUSS 0300. Intermediate Russian.

Continues development of language proficiency while broadening understanding of contemporary Russian culture via readings in literature and history. Expansion of vocabulary for dealing with conversational topics and review of Russian grammar. Features literary and nonliterary readings in Russian, as well as video and computer resources. Five class meetings per week. Prerequisite: RUSS 0110 or RUSS 0200 or RUSS 0250 or placement by exam. Enrollment limited to 18.

Fall RUSS0300 S01 18049 MTWThF 11:00-11:50 (L. deBenedette)

RUSS 0320E. Crime and Punishment through Literature.

The seminar will explore how texts of different epochs and cultures, ranging from Ancient to Modern and from drama to poem, novel, and film treat the issues of transgression, punishment, justice, and forgiveness. We will examine each text both in terms of its artistic merit and its place within its cultural and historical milieu. Enrollment limited to 19 first-year students.

Fall RUSS0320ES01 18028 W 3:00-5:30(10) (V. Golstein)

RUSS 0400. Intermediate Russian.

Continues development of language proficiency while broadening understanding of Russian culture via readings in literature and history. Includes expansion of vocabulary for dealing with conversational topics and review of Russian grammar. Features literary and nonliterary readings in Russian, as well as video and computer resources. Five class meetings per week. Prerequisite: RUSS 0300 or placement by exam. Enrollment limited to 18.

Fall	RUSS2990	S01	16628	Arranged	'To Be Arranged'
Spr	RUSS2990	S01	25279	Arranged	'To Be Arranged'

Slavic

SLAV 1950. Independent Study.

Independent research project on topics in Slavic Studies. Enrollment permitted only after the written proposal (instructions in the department office) is submitted to the Concentration Advisor and Chair of the department (deadline: the last day of *Add a course without fee* period during the semester when the project is undertaken). Please check Banner for the correct section number and CRN to use when registering for this course. Each section limited to 10 students; instructor permission required.

SLAV 1981. Independent Research in the Slavic Language(s).

Independent research on various topics in Slavic cultures. Reading, discussion, research must be done in the chosen Slavic language (Czech/Russian). Close work with faculty on project is expected. Prerequisites: minimum RUSS0600/CZCH 0610 (3rd year-level) or placement evaluation by Russian or Czech language coordinator. Enrollment permitted only after the written proposal (instructions in the department office) is submitted to the Concentration Advisor and Chair of the department (deadline: the last day of *Add a course without fee* period during the semester when the project is undertaken). Each section limited to 10 students; instructor permission required.

SLAV 1990. Senior Thesis.

Only for Slavic concentrators writing their senior theses. For requirements and schedule, contact the department. Each section limited to 10 senior Slavic Studies concentrators.

SLAV 2450. Exchange Scholar Program.

Fall	SLAV2450	S01	16630	Arranged	'To Be Arranged'

SLAV 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall	SLAV2970	S01	16631	Arranged	'To Be Arranged'
Spr	SLAV2970	S01	25281	Arranged	'To Be Arranged'

SLAV 2980. Advanced Reading and Research.

Only for graduate students. Independent research project on topics in Slavic Studies. Enrollment permitted only after the written proposal (instructions in the department office) is submitted to the DGS and Chair of the department (deadline: the last day of *Add a course without fee* period during the semester when the project is undertaken). Please check Banner for the correct section number and CRN to use when registering for this course. Each section limited to 10 students; instructor permission required.

SLAV 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall	SLAV2990	S01	16632	Arranged	'To Be Arranged'
Spr	SLAV2990	S01	25282	Arranged	'To Be Arranged'

SLAV XLIST. Courses of Interest to Concentrators in Slavic Languages.

Sociology

SOC 0010. Social Forces: An Introduction to Sociology.

Social forces constrain and empower us, bond us together and push us apart. Sociology explores the workings of societies large and small: nations, organizations, communities, families, and other groups. How do societies shape action and identity, and why are social pressures so hard to defy? How do societies distribute wealth and power, and why do inequalities so often coalesce around race, ethnicity, class, and gender? How do established practices persist, and when do movements arise to challenge them? Examining such themes across a range of issues and topics, this course provides a springboard for future study throughout the social sciences.

Fall	SOC0010	S01	17667	TTh	9:00-10:20(05)	(L. DiCarlo)
Spr	SOC0010	S01	26053	TTh	9:00-10:20(05)	(M. Kennedy)

SOC 0230. Sex, Gender, and Society.

This course will explore contemporary frameworks and methodological approaches underpinning the sociological study of sex, gender, and sexuality. In addition to delving into key debates about sex, gender, and sexuality, this course will critically examine the social construction of sex, gender, and sexuality within different institutions and social contexts. Throughout the course, close attention will be paid to understanding how sex, gender, and sexuality are mutually constituted alongside other systems of inequality, such as race, ethnicity, class, and nationality, as well as how moments of tension, resistance, and change emerge.

Fall	SOC0230	S01	17966	MWF	12:00-12:50(15)	(M. Musto)

SOC 0300. Organizations and Society.

We live in a society of organizations. We are born inside organizations, we are educated inside organizations, we work inside organizations, and when we die, we will be buried by organizations. Organizations are therefore central to processes that shape individual lives and societal trends, from widening income inequality, to the spread of innovations, to struggles over public policy. This course introduces the field of Organizational Studies, examining organizations as complex, multifaceted social settings. By investigating how organizations and society shape each other, students will build skills for informed, socially-responsible engagement in an increasingly organizational society.

Spr	SOC0300	S01	26054	TTh	2:30-3:50(11)	(R. Wetts)

SOC 0300I. From Macro to Micro: Experiencing Education (In)equality in and beyond Schools.

In American society a paradox exists: education is both a conduit of mobility and inequality. Schooling offers the potential for greater opportunities; yet the disparate nature of school-communities often compound disadvantages for others. In this course, we explore the complex "ecology" of educational inequality, from macro- to micro-dimensions, exploring economics, housing, intergroup dynamics, race and racism, gender and sexism, poverty and class, and other phenomena. It will provide students with a basis for understanding the relationship between education and society, and we will explore the intersectional ways that group distinctions, material and political realities impact people's lives.

Fall	SOC0300I	S01	17901	TTh	9:00-10:20(05)	(P. Carter)

SOC 0300K. Inequalities and Health.

We start from the assumption that the social organization of society shapes definitions and experiences of health and illness, the distribution of diseases, and the responses to them. We explore the relevance of social structure and social interaction to health and well-being, emphasizing socioeconomic status, race, ethnicity, gender, and social contexts such as relationships, families, schools, and neighborhoods. This is not a "sociology of medicine" course. It will not emphasize the profession of medicine, health care policy, or health care organizations. Enrollment limited to 19 first year students. Instructor permission required.

Fall	SOC0300K	S01	17902	W	3:00-5:30(10)	(S. Short)

SOC 0300R. The Sociology of Race.

The course examines the main theories in the Sociology of race, racism and discrimination. It focuses on how race patterns the experiences of ethno-racial groups and simultaneously defines the contours of systemic racism and inequality. It teaches students how to lead and participate in critical discussions, collaborate on the analysis of data, write research-based policy proposals with a client orientation, and engage with current issues surrounding the sociology of race, discrimination and racism. While the focus is primarily sociological, the course takes a multivalent approach to examine how racial inequality persists in a presumably "post-racial" society.

Spr	SOC0300R	S01	26059	TTh	9:00-10:20(05)	(L. Lopez Sanders)

SOC 0300X. The Value of Nature and the Nature of Value.

The central questions of economic life are questions of value: how much are things worth? How do we establish those values? Who decides? Climate change, biodiversity loss, and environmental injustice make these inquiries even more urgent: how should we allocate resources to support life on Earth? Through a focus on nature and climate, this course introduces students to the ways that politics, culture, and morality shape economic processes. We will also encounter other tricky questions of value, like valuing human life, knowledge, and art. Students will leave with a foundation in economic sociology – an essential conceptual lens

at a time when environmental and many other social problems demand multivalent conceptions of value.

Spr SOC0300X S01 26692 M 3:00-5:30(13) (C. Rea)

SOC 0300Y. Gender at Work: The Past and Future of Gender Inequality.

In this first-year seminar, we will analyze the intricate ways in which gender permeates the world of work (paid and unpaid) and fuels inequality. The course explores intersections of gender, race, and class, with a focus on the 20th and 21st century United States. We will cover a range of topics from segregation and discrimination to care work and emotional labor, and decode how policy and labor movements are shaping the future of work. This course invites students to engage with a variety of theories and methods, paving the way for a deeper understanding of gender and stratification.

Spr SOC0300Y S01 26324 TTh 10:30-11:50(09) (A. Martin-Caughey)

SOC 0310. Theory and Practice of Engaged Scholarship.

Efforts are underway across college and university campuses—in the United States and globally—to increase opportunities for community-engaged teaching, learning, and research. What is engaged scholarship and how does it challenge (and/or complement) more traditional concepts of scholarship and disciplinary knowledge? What are the historical, practical, methodological, ethical, and other considerations associated with engaged scholarship? Through investigating these and other questions, students will emerge from this course with a critical understanding of engaged scholarship at Brown University and in the broader landscape of U.S. higher education. Students will be equipped to design a course of study that integrates community practice with academic knowledge throughout the remainder of their time at Brown and beyond. SOC 0310 fulfills a requirement for the Engaged Scholarship Certificate.

Fall SOC0310 S01 17903 W 3:00-5:30(10) 'To Be Arranged'

Spr SOC0310 S01 26060 W 3:00-5:30(10) 'To Be Arranged'

SOC 1010. Classical Sociological Theory.

How is modern society organized? What holds society together and what drives social change? Why is there such a large gap between the "modern" ideal of formal equality and the reality of factual inequality? Why do differences of class, race and gender persist? What is power and who has it? These questions have motivated generations of sociologists, but many of the arguments continue to be informed by the foundational classical theorists: Karl Marx, Max Weber, Emile Durkheim and W.E.B. Du Bois. Looking at the transformations around them – the rise of capitalism, the modern nation-state, rational bureaucracy, the spread of colonialism, the decline of religion, struggles for emancipation and much more – they developed arguments that allow us to better understand ourselves, our actions, and the contemporary political, economic and social transformations around us. We explore the defining contributions of these theorists and link them to current debates and theories on systemic racism, gender/sex struggles, global inequalities, social movements and democracy.

Fall SOC1010 S01 17898 TTh 10:30-11:50(13) (A. Schrank)

SOC 1020. Methods of Social Research.

This course aims to impart a critical perspective of, and an empirical familiarity with, the range of methods available to sociological researchers to answer interesting, important, and complex social research questions. It introduces students to the frameworks and methods of conducting sociological research -- from both a qualitative and quantitative perspective. We will examine broadly defined methodological approaches to doing sociology such as survey research, ethnography and interviews, and historical/comparative studies. These methodological approaches correspond to distinct conceptualizations of social life and the science dedicated to studying it. Over the course of the semester, students will focus on developing a fully feasible research proposal.

Spr SOC1020 S01 26055 MWF 12:00-12:50(01) (J. Itzigsohn)

SOC 1100. Introductory Statistics for Social Research.

Introduction to descriptive and inferential statistics: measures of central tendencies and variability, sampling, tests of significance, correlation, and regression. Also includes the use of computers in data analysis. Knowledge of elementary algebra is assumed. Enrollment is limited to 144 students.

Fall SOC1100 S01 17899 TTh 1:00-2:20(06) (J. Candipan)

Spr SOC1100 S01 26056 TTh 1:00-2:20(08) (C. Boen)

SOC 1116. Criminal Courts and the Law in an Era of Mass Incarceration.

This course provides a comprehensive introduction to America's criminal court system and all its institutional stakeholders. We will examine America's criminal court system from myriad of different perspectives: courts as organizations, courts as social arrangements of professionals, courts as providers of social services and courts as consumer institutions – providing the experience of justice to victims, witnesses, defendants and jurors. We will focus on state courts as well as the federal system.

Spr SOC1116 S01 26061 MWF 11:00-11:50(04) (N. Gonzalez Van Cleve)

SOC 1117. Focus Groups for Market and Social Research.

This course introduces students to a range of qualitative research methods commonly used in market and social science research. It is designed to provide students with a skill set that will allow them to conduct and design market and social research that gets below the surface of the traditional survey. Focus groups, ethnographic observation and user-centered research are widely used in product design, communications, marketing and entrepreneurship research. Students will learn and practice all of the methods introduced in the course by conducting a semester-long research project, will gain insight into which methods are most appropriate for particular research needs.

Fall SOC1117 S01 17904 MWF 9:00-9:50(09) (C. Spearin)

SOC 1118. Context Research for Innovation.

This course brings design thinking into conversation with qualitative research methods, examining the elements of a comprehensive perspective of context. It introduces students to design research methods, ethnographic research methods, and how they work together. Students will learn how to use these methods to identify and engage in "deep hanging out" with the problem, gap or inefficiency in question. They will then move on to patient contextualized opportunity identification for meaningful innovation. By the end of the course, students will have developed a process for effective, through innovation context analysis. Relevant for designers of products, services, organizations, and experience.

Fall SOC1118 S01 18629 TTh 1:00-2:20(06) (L. DiCarlo)

SOC 1120. Market and Social Surveys.

This course covers the theory and practice of survey research. Topics include questionnaire design and formatting; sample design and selection; interviewing techniques; data base design and data entry; and elementary data analysis and report production. Students will design, construct, administer, and analyze a survey for a Brown community partner.

Spr SOC1120 S01 26062 MWF 9:00-9:50(02) (C. Spearin)

SOC 1140. Social Forces and the Ecology of Inequality and Opportunity.

This course explores a range of issues pertaining to equity and equality in the United States and globally. Putting sociology in conversation with other disciplines, it addresses existing societal conditions, policies and practices, focusing on research studies and scholarship pertaining to race and racism, class, poverty and wealth, gender and sexuality, culture, media, and religion. Through engaging readings, films and videos, guest lectures, and other engagement, the course examines the interdependence of economic, legal, social, political, cultural, and educational forces. It aims to deepen students' understanding of how these forces either sustain or narrow opportunity gaps in society, education, and beyond.

Spr SOC1140 S01 26138 TTh 10:30-11:50(09) (P. Carter)

SOC 1270. Race, Class, and Ethnicity in the Modern World.

Applies sociological analysis to understand present and historical cases of ethnic and race relations and conflicts. Topics addressed are the social construction of race and ethnicity; historical processes of racialization; ethnic conflict and the nation state; and the linkages between race, class, and social mobility. Focuses on racial and ethnic relations in the U.S., but also has a strong international comparative component.

Spr SOC1270 S01 26063 MWF 2:00-2:50(07) (J. Itzigsohn)

SOC 1311. Micro-Organizational Theory: Social Behavior in Organizations.

Micro-Organizational Theory focuses on the human dynamics of organizations as natural systems. It examines how individual attitudes, actions, and interactions make a difference for organizational processes and outcomes. This focus is contrasted with more macro-level approaches, which take the organization (instead of the individual) as the primary unit of analysis. For example, studies of organizations from an economic perspective are typically concerned with the performance of the organization relative to its competitors. Studies of organizations from a macro-sociological focus are typically concerned with an organization's routines and structures, contextualized by the broader environment. SOC 1311 takes a more micro and meso perspective that asks questions such as, "why do individuals in organization behave the way they do, how does this affect the organizations of which they are a part and how, in turn, are individuals affected by their organizations?"

Fall SOC1311 S01 17900 MWF 11:00-11:50(16) (A. Martin-Caughey)

SOC 1315. Macro-Organizational Theory: Organizations in Social Context.

Macro-Organizational Theory focuses on the organization and its social/economic environment. This class will explore various definitions of the organization's environment, and the many types of macro-level organizational structures in which sets of organizations interact, function, compete, and cooperate. Important questions to be asked include the following:

- What is an organizational environment and how do organizations "deal" with what is outside of their boundaries?
- How are the boundaries of organizations defined/recognized/function?
- How do environments influence organizational strategy and performance?
- What are the major theories for assessing macro-level organizational phenomena?
- What are the many ways in which organizations relate to other organizations?

Spr SOC1315 S01 26057 MWF 1:00-1:50(06) (J. Diamond)

SOC 1340. Principles and Methods of Geographic Information Systems.

An introduction to the fundamental principles and methods of geographic information systems (GIS). Topics include (a) handling different types of geographic datasets, (b) geo-analytical and modeling tools in GIS, (c) conceptual and theoretical aspects of GIS application development, and (d) errors and uncertainty analysis of GIS applications. Laboratory assignments and the project work provide hands on experiences in GIS. Enrollment limited to 42 juniors and seniors.

Fall SOC1340 S01 17905 MWF 10:00-10:50(14) (K. Mwenda)

SOC 1450. Unstable Times: Migration, Identity and Societal Integration.

This course focuses on the changing experience of immigrants in American society. It builds on the premise that periods of social transformation are central to understanding the process of integration of people moving across borders and settling in particular locales. The course engages theories of immigrant incorporation to examine processes of identity formation and societal integration. The course also considers how immigrant integration is a major force reshaping social and political ideologies as well as how new patterns of exclusion emerge as immigrants confront the denial of resources, opportunities and access to citizenship.

Fall SOC1450 S01 17907 MWF 2:00-2:50(01) (L. Lopez Sanders)

SOC 1480. What's Wrong with Empowerment: Critical perspectives on Development.

Women's "empowerment" is a means and ends to international development. From microfinance self-help groups that foster women's businesses, to corporate social responsibility projects that promote girls' education, to campaigns against domestic violence, developmental initiatives target women. These projects are motivated by the commonsense understanding that focusing on women will not only make women better off, but also their families, neighborhoods, and the entire nation. This course analyzes the evolution and effects of women as a global solution to poverty. How did women become the targets of

development? Are women empowered by development schemes we find today in their names?

Fall SOC1480 S01 18219 MWF 1:00-1:50(08) (P. Roychowdhury)

SOC 1490. Power, Knowledge and Justice in Global Social Change.

How bad is climate change, and how much worse it will get? How are global inequalities' changing? What are their consequences? How is white supremacy implicated here? What is our responsibility in analyzing/engaging these questions? You have at least an implicit response to these questions and others addressing global transformations. This course will help refine your understandings by inviting you to consider the actors, structures, norms and powers shaping how change works and why we judge its expressions as we do. Across multiple areas of global change, we compare conceptions of power and justice in their various articulations.

Fall SOC1490 S01 17908 TTh 10:30-11:50(13) (M. Kennedy)

SOC 1871X. Comparative Urban Political Economy.

For the first time, most people across the globe live in cities. Inequalities within both nations and cities are increasingly similar across national boundaries. This course ask how the politics of formal and informal institutions in cities produce and change inequalities of shelter, work, race, and other social identities, across urban space. We analyze cases from across the globe, along with a range of social science methods and theoretical perspectives.

Fall SOC1871X S01 17909 M 3:00-5:30(03) (J. Logan)

SOC 1871Z. Martial Arts, Culture, and Society.

In this upper level undergraduate course for which there are no prerequisites, we consider how sociology, and other social sciences, help us understand martial arts and other bodymindful practices (including yoga!) and how they might inform the social sciences. We consider how these practices, their organizations, and their cultures shape, and are shaped by, different structures of power and privilege. We concentrate on martial arts because they straddle such an important axial dimension of society around violence. Enrollment limited to 20.

Fall SOC1871Z S01 17910 TTh 2:30-3:50(12) (M. Kennedy)

SOC 1872O. Critical Race Theory.

We will examine US race, racism, and racial inequality through the lens of critical race theory. We start with an examination of the development of critical race theory in the legal academy and explore the foundational principles of the theoretical framework. We will utilize a critical race frame to analyze the law as a tool of the US racial state, a mechanism through which the state has created and maintained race privilege and corresponding racial oppression. We will also compare the critical race paradigm that developed in the legal academy to some of the most critical race perspectives in sociology.

Spr SOC1872O S01 26067 TTh 1:00-2:20(08) 'To Be Arranged'

SOC 1872V. Race and Wrongful Conviction in the United States.

This class examines the racial origins of wrongful conviction in the U.S. criminal justice system. We examine how wrongful conviction is created through both formal laws as well as social norms of practice that obscure how racial bias infiltrates seemingly race-neutral areas of due process. While legal scholars and lawyers examine wrongful conviction as a type of "misfire" in an otherwise functioning criminal justice system, this course considers how wrongful conviction is type of social system within the mainstay of the criminal justice system, at large. In the tradition of W.E.B. Du Bois, we examine how racism is the engine of this social system that is best referred to as "mass wrongful conviction."

Fall SOC1872V S01 18224 TTh 2:30-3:50(12) (N. Gonzalez Van Cleve)

SOC 1873D. Inequality of Infant Health.

Infant health has become increasingly unequal since 2010. Medical improvements and greater access to health insurance predict greater equality, but underweight and preterm births have become increasingly likely for unmarried and Black mothers with low levels of education. Why? What contributes to infant health and how could policies improve outcomes for marginalized mothers? This course examines contexts and resources that shape infant health and how infant health shapes life chances for children. Infant health is a central connection between generations and a valuable focus to learn how to increase equality of opportunity in the U.S.

Spr SOC1873D S01 26597 M 3:00-5:30(13) (E. Rauscher)

SOC 1873G. The Geography of Urban Inequality.

This course considers spatial aspects of inequality in metropolitan neighborhoods in the United States. We will examine the social and economic forces driving patterns of urban inequality, drawing from sociological readings on topics such as housing, education, segregation, gentrification, neighborhood effects, and concentrated poverty. Students will investigate the consequences of these inequalities for individuals and their communities, and analyze the effectiveness of policies in addressing or exacerbating stratification. This course will be discussion-based and interactive, requiring weekly preparation and active exchange during class.

Spr SOC1873G S01 26068 Th 4:00-6:30(17) (J. Candipan)

SOC 1874C. Medical Sociology.

How do institutions, policies, and structures shape the health of individuals and populations? How has healthcare changed over time? To what extent are the concepts of "health", "illness", and "disability" innate or socially constructed? This course will tackle these questions, and more, through the study of medical sociology. The course is designed for undergraduates with at least some familiarity with sociological concepts. Throughout the course, students will learn to apply theoretical and empirical insights from the readings to real-world situations. Most readings will focus on the United States, but we will occasionally read and discuss research on other countries.

Fall SOC1874C S02 19142 F 3:00-5:30(11) 'To Be Arranged'

SOC 1874D. From Factory to Code.

Recent transformations in capitalism owing to the pervasive production and commercial use of data, including personal data of users of internet-related services, have seen proclamations such as "data is the new oil" and "you are the product", and the rise of new analytical concepts such as "digital"/"data"/"surveillance"/"platform"/"information" capitalism. But what do we mean when we say data, where does it come from, what does it have to do with capitalism, and why does any of it matter? This course aims to answer these questions, by examining the technology and data-driven transformations in political economy and society.

Spr SOC1874D S01 26596 F 3:00-5:30(15) 'To Be Arranged'

SOC 1900. Religion, Christianity, and Spirituality.

Religion, in general, and Christianity, in particular, have had an indelible influence in the lives of Americans, especially African Americans. Why? What common themes, beliefs, and rituals exist for these two cultural systems? How do they tend to be appropriated and understood? Moreover, how does spirituality manifest as a viable response? Research by seminal sociologist and community activist W.E.B. Du Bois and other scholars of race and racism will inform answers to these and other questions. The course will examine whether and how religion, Christianity, and spirituality influence the lives and quality of life of diverse groups. Special attention will be given to their usage by African Americans.

Spr SOC1900 S01 26288 W 3:00-5:30(10) (S. Barnes)

SOC 1950. Senior Seminar.

Advanced seminar for sociology and social analysis and research (SAR) concentrators. Participants examine methods for analyzing, writing, and presenting capstone and thesis material and apply peer review techniques in assessing each other's work. Culminates in presentation of capstone or thesis to the department. Required for all sociology and social analysis and research (SAR) concentrators.

Spr SOC1950 S01 26058 MWF 10:00-10:50(03) (C. Spearin)

SOC 1970. Individual Research Project.

Supervised reading or research. Specific program arranged in terms of the student's individual needs and interests. Required of intensive concentrators; open to others only by written consent of the Chair of the department. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

SOC 1980. Senior Honors Thesis.

Under the direction of a faculty advisor, students construct and carry out a research project. The written report of the research is submitted to the advisor for honors consideration. A second reader selected by the thesis advisor certifies that the thesis is of honors quality. Please check Banner

for the correct section number and CRN to use when registering for this course.

SOC 1990. Senior Honors Thesis.

Under the direction of a faculty advisor, students construct and carry out a research project. The written report of the research is submitted to the advisor for honors consideration. A second reader selected by the thesis advisor certifies that the thesis is of honors quality. Please check Banner for the correct section number and CRN to use when registering for this course.

SOC 2010. Multivariate Statistical Methods I.

Introduction to probability, descriptive statistics and statistical inference. Coverage of the linear model, its assumptions and potential biases. Emphasis on hypothesis testing, model selection and interpretation through application with real data.

Fall SOC2010 S01 17911 T 9:00-12:00 (M. Jackson)

SOC 2020. Multivariate Statistical Methods II.

This course is a graduate-level introduction to multivariate regression models for categorical and limited dependent variables. Subject matter includes modeling nominal and ordinal outcomes; truncated distributions; and selection processes. The course also reviews strategies for sample design; handling missing data and weighting in multivariate models. The course employs contemporary statistical software. Special emphasis is placed on model selection and interpretation. Prerequisite: SOC 2010

Spr SOC2020 S01 26071 T 9:00-12:00 (E. Rauscher)

SOC 2040. Classical Sociological Theory.

This is a graduate-level course requires students to engage in detailed analysis and critical review of sociological thought of the 19th and early 20th centuries. The class will introduce students to the critical thinking, methodological innovation, and historical imagination of sociological theory by reading the original texts of the forefathers of sociology, including Karl Marx, Max Weber, Emile Durkheim and others.

Fall SOC2040 S01 17912 Th 9:00-12:00 (J. Pacewicz)

SOC 2050. Contemporary Sociology.

This class offers a review of some of the most interesting contemporary social theorists and the most intense debates in current sociological thought. It thematically reviews the works of Jurgen Habermas on the public sphere, Michel Foucault on disciplinary and governmental modes of power, Bruno Latour on modernity and modern science, Pierre Bourdieu on field and habitus and among others. No prerequisites.

Spr SOC2050 S01 26127 M 9:00-12:00(02) (A. Schrank)

SOC 2070. Text as Data for Social Science Research.

This graduate-level course covers methods for analyzing textual data in social science research. Students will learn techniques for data collection and natural language processing, and gain hands-on experience with large textual datasets. The course will also cover recent research that develops and applies machine learning tools and causal inference to answer questions of interest in social science.

Fall SOC2070 S01 18854 T 1:00-4:00 (T. Rotesi)

SOC 2080. Principles of Population.

An advanced introduction to theoretical and substantive issues in the social scientific study of population. Major areas within sociology are integrated with the study of population, including the comparative-historical analysis of development, family processes, social stratification, ethnicity, ecological studies, and social policy. Primarily for first year Graduate students.

Fall SOC2080 S01 19143 M 1:00-4:00 (S. Short)

Spr SOC2080 S01 26073 W 9:00-12:00 (S. Short)

SOC 2110. The Sociology of Gender and Sexualities.

This course offers an in-depth understanding of the sociological study of gender and sexualities. In addition to examining contemporary theoretical frameworks and methodological approaches, we will interrogate the social construction of gender and sexualities within a variety of institutions and social contexts, such as families, schools, work, health and medicine, technology, and popular culture. Throughout the course, close attention will be paid to understanding how gender and sexualities intersect with other systems of inequality, such as race, class, age, nationality, and disability. Although empirical research will primarily draw from the

United States, some transnational perspectives will also be considered. Students will leave this course with a strong understanding of gender and sexualities within macro, meso, and micro levels of society, as well as how moments of tension, resistance, and change occur.

Spr SOC2110 S01 26392 T 1:00-4:00 (M. Musto)

SOC 2120. Gender, Work, and Inequality.

We spend a great deal of our waking hours working, either paid or unpaid. In what ways is gender embedded in work, and how does work reflect and reinforce gender inequality? This seminar will provide an overview of contemporary theory and research on gender and work. Throughout the course, we will consider gender in relation to race and ethnicity, and we will pay close attention to how gender and race at work translates into class and inequality. Our primary focus will be on the United States in the 20th and 21st centuries, with some comparisons with other nations. Readings will include a mix of qualitative and quantitative methods. Topics covered include: gender segregation and pay gaps, labor market discrimination, service work and emotional labor, unpaid household work, immigration and globalization, labor organizing, social policy, and the future of work.

Spr SOC2120 S01 26398 Th 1:00-4:00 (A. Martin-Caughey)

SOC 2210. Qualitative Methods.

Emphasis on ethnographic field work through participant observation and interviews. Some attention to content analysis and visual sociology. Technical training in developing observational and interview guidelines, data collection, coding, transcript analysis, and computer applications. Strong emphasis on quality writing. Analysis of ethnographic research in book and article format. Attention to recent developments in ethnography, especially reflexivity and autoethnography.

Fall SOC2210 S01 17913 F 9:00-12:00 (L. Lopez Sanders)

SOC 2230. Techniques of Demographic Analysis.

Procedures and techniques for the collection, evaluation, and analysis of demographic data; measures of population composition, fertility, morality, and migration; construction of life tables, population and projections, population dynamics; responsible use of demographic methodology.

Spr SOC2230 S01 26284 W 1:00-4:00 (C. Boen)

SOC 2260G. The Souls of Sociology: W.E.B Du Bois and Critical Sociologies of Race.

This course investigates Du Bois' empirical and theoretical sociological work and its implications for contemporary sociology. W.E.B Du Bois is recognized as a pioneer of sociology of race, but his work is seldom explored. The first part of this course we discuss in-depth Du Bois work to construct the bases for a Du Boisian sociology. The second part we will read contemporary theories of race through the lens of Du Bois' work. The final section we will read contemporary empirical works in the field of race and ethnicity, reflect how we would conduct them differently from a Du Boisian perspective.

Fall SOC2260G S01 17916 W 9:00-12:00 (J. Itzigsohn)

SOC 2260T. Cultural Theory and Methods.

This course introduces graduate students to the sociology of culture (understanding social influence on cultural formations) and cultural sociology (understanding cultural influences on social processes). As we consider different theoretical areas of the field, we will discuss the best methodological approaches in cultural theory. We consider how one formulates a research questions and puts evidence together in order to investigate specific instances of the culture-society interaction. We discuss the distinctions between culture, institutions and organizations.

Spr SOC2260T S01 26078 M 1:00-4:00 (N. Gonzalez Van Cleve)

SOC 2385. Environmental Sociology.

As contestation over environmental concerns proliferates, it draws increasing attention from sociologists. But sociological research on environmental issues raises major challenges. Social-environmental relationships raise theoretical and methodological questions: How do we know an "environmental" issue when we see one? How can we effectively examine the relationships between environmental processes and social processes and structures?

Fall SOC2385 S01 17917 M 1:00-4:00 (S. Frickel)

SOC 2430. Fields and Methods of Social Research.

Introduction to strategies sociologists use to formulate theories and conduct methodologically sound research. Hypothesis formulation and research design; special emphasis on identifying causal mechanisms, techniques of operationalization, and choice of relevant comparisons.

Spr SOC2430 S01 26074 Th 1:00-4:00 (M. Musto)

SOC 2450. Exchange Scholar Program.

Fall SOC2450 S01 16633 Arranged 'To Be Arranged'

Spr SOC2450 S01 25283 Arranged 'To Be Arranged'

SOC 2460. Sociology Paper Writing Seminar.

This is a special seminar for graduate students in Sociology on the art of writing research papers for publication. The goals of the course are to: 1) learn the process of writing by drafting or redrafting a complete research paper, one section at a time 2) participate in the process of critical peer review 3) become knowledgeable about the process of submission/publication in peer-reviewed journals in Sociology and related social science fields 4) become more familiar with the often hidden processes of journal review, publication ethics, and interpreting/responding to editorial decisions

Spr SOC2460 S01 26079 Th 9:00-12:00 (J. Eason)

SOC 2500. Teaching Practicum in Sociology.

This course is designed for sociology graduate students whose funding has prohibited a teaching assistantship but who need to complete the departmental teaching requirement. The instructor for this course will default as the department chair but it is the graduate student's responsibility to identify an instructor to work alongside. This partnership must be approved by the director of graduate study.

Fall SOC2500 S01 17920 Arranged (S. Barnes)

SOC 2510. Teaching Practicum in Sociology.

This course is designed for sociology graduate students whose funding has prohibited a teaching assistantship but who need to complete the departmental teaching requirement. The instructor for this course will default as the department chair but it is the graduate student's responsibility to identify an instructor to work alongside. This partnership must be approved by the director of graduate study.

Spr SOC2510 S01 26083 Arranged (S. Barnes)

SOC 2610. Spatial Thinking in Social Science.

This course reviews ways in which social scientists have incorporated concepts about space, place, and distance into their theories and research. Examples are drawn from many substantive areas, including the spatial organization of communities, spatial inequalities, and mobility. Separate laboratory meetings introduce methods of spatial analysis encountered in the course readings, including an introduction to GIS and related mapping tools.

Fall SOC2610 S01 18010 M 9:00-12:00 (J. Logan)

SOC 2960C. Urban Sociology.

This course will review alternative theoretical perspectives on urban and regional development with an emphasis on variants of ecological and political economy approaches. Substantive topics will include metropolitan restructuring in the U.S. and abroad, growth politics and growth control, neighborhood social networks and collective action, and incorporation of immigrants and minority groups in the metropolis.

Spr SOC2960C S01 26080 W 1:00-4:00 (J. Logan)

SOC 2960F. Global and Transnational Sociology.

The new phase of capitalism, commonly called "globalization," has radically transformed the postwar order. In this seminar, we will review several debates regarding current political-economic transformations, including: What caused the shift to neo-liberalism? What external economic pressures do states experience? Can domestic factors mediate such pressures? How do developing countries react to the new international environment? And what role does the United States and international organizations play in the new order?

Spr SOC2960F S01 26082 F 9:00-12:00 (N. Chorev)

SOC 2960G. Spatial Data Analysis Techniques in the Social Sciences.

Survey course of statistical methods that can be used to analyze spatial and/or clustered data at the individual and aggregate levels. Topics include multilevel analysis; fixed effects approaches; spatial choice; spatial

autocorrelation, heterogeneity and dependence. Application with real data. Not a course about Geographic Information Systems (GIS) or mapping techniques.

Fall SOC2960G S01 17918 W 1:00-4:00 (J. Candipan)

SOC 2961B. Applications in Geographic Information Systems.

This course is for graduate students seeking to develop their GIS skills further and to gain practice applying GIS methods in a research-oriented setting. The course is organized around a set of social science topics—as opposed to sequential coverage of various methods—and the focus is on getting from research question to analytical results to interpretation of findings. The course emphasizes practice matching concept to tool, as well as identifying appropriate tools and combining them successfully. Independent research skills using GIS are developed via the reading of published literature, the guided replication of results, and the interpretation of findings.

Spr SOC2961B S01 26081 M 1:00-4:00 (K. Mwenda)

SOC 2961D. Sociology of Power.

The goal of the course is to both engage with the many different and often conflicting theoretical paradigms in sociology that have shaped the debate on power as well as to explore in depth the various empirical manifestations of power. The goal of the course is two-fold: first to familiarize ourselves with the rich set of theoretical tools that sociology provides for exposing, engaging and reconstituting power and second to fully grapple with the challenges of producing social science research that can build on and advance the normative and empirical debate on power. Undergrads by permission of instructor.

Fall SOC2961D S01 18630 Th 9:00-12:00 (P. Heller)

SOC 2961E. Sociology of Education.

This course provides an overview of Sociology of Education, covering substantive, theoretical, and methodological issues in the field. Beginning with classical theories of education, the course will then provide an overview of the relationship between education and society, with a focus on its role in reducing and reproducing inequality. We will discuss causes and consequences of educational inequality, paying particular attention to education and the labor market. In the process, we will engage with ascriptive forms of stratification, including race and ethnicity. The focus of the course is education in the U.S., but we will occasionally incorporate international comparisons.

Fall SOC2961E S01 17919 Th 1:00-4:00 (P. Carter)

SOC 2961M. Computational Methods for Social Scientists.

This course will teach students the fundamentals of computational methods for social science research, with an emphasis on techniques for analyzing large-scale textual data. The first part of the course will provide students with basic technical skills necessary to conduct computational research, including introducing them to Python programming and web-scraping. The second part of the course will focus on automated text analysis, highlighting key methods appropriate for inductive or deductive inquiry, such as topic modeling and dictionary-based methods. The course assumes no previous knowledge of programming and is most appropriate for graduate students in the social sciences or humanities.

Spr SOC2961M S01 26180 Th 9:00-12:00 'To Be Arranged'

SOC 2970. Preliminary Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall SOC2970 S01 16634 Arranged 'To Be Arranged'

Spr SOC2970 S01 25284 Arranged 'To Be Arranged'

SOC 2980. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

SOC 2981. Reading and Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

SOC 2982. Directed Research Practicum - MSAR Students Only.

The Directed Research Practicum (SOC 2982) is a one semester course taken in conjunction with an on- or off-campus research internship. The course consists of a directed reading of methodological texts and research

articles selected by the student and the faculty director that are of direct relevance to the methodological issues and challenges encountered in the internship. The student and faculty director will meet on a weekly basis to review the readings, assignments, and discuss how the methods on paper “come to life” during the internship experience. Faculty directors need not be involved with the actual internship work (i.e. the internship is off-campus or with an on-campus office), unless the student is working on the faculty member’s research project.

SOC 2990. Dissertation Preparation.

For Sociology PhD graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall SOC2990 S01 16635 Arranged 'To Be Arranged'

Spr SOC2990 S01 25285 Arranged 'To Be Arranged'

SOC XLIST. Courses of Interest to Students Concentrating in Sociology.

Theatre Arts and Performance Studies

TAPS 0030. Introduction to Acting and Directing.

Explores basic acting/directing concepts from a variety of perspectives including the use of the actor’s imagination/impulsivity in the creation of truthful, dramatic performance; the body, as a way of knowing and communicating knowledge; and the voice, as a means of discovering and revealing emotion/thought. There is a mandatory tech requirement and some evening hours are required. Please go to the TAPS website for specifics on admission and the technical requirement (<https://taps.brown.edu/undergraduate/undergraduate-courses%23/additional-info>). Enrollment limited to 18 students. Instructor permission required. No permission will be given during pre-registration.

Fall TAPS0030 S01 10046 TTh 9:30-11:50 (C. Crawford)

Fall TAPS0030 S02 10047 TTh 3:00-5:20 (S. dAngelo)

Spr TAPS0030 S01 20038 TTh 9:30-11:50 (C. Crawford)

Spr TAPS0030 S02 20039 TTh 3:00-5:20 (S. dAngelo)

TAPS 0100. Playwriting I.

A workshop for students who have little or no previous experience in writing plays. Students will be introduced to a variety of technical and imaginative considerations through exercises, readings and discussions. Course is not open to those who have taken Advanced Playwriting (TAPS 1500, formerly LITR 1010C and TSDA 1500). Enrollment is limited to 12 undergraduates per section. A limited number of spaces are reserved for incoming and transfer students. Instructor permission required. S/NC.

Fall TAPS0100 S01 10042 F 1:00-3:50 'To Be Arranged'

Fall TAPS0100 S02 10043 MW 10:30-11:50 (B. Dang)

Spr TAPS0100 S01 20027 F 1:00-3:50 'To Be Arranged'

TAPS 0200. Playwriting II.

This course is an artistic laboratory and seminar that builds upon the fundamentals of Playwriting I. In this course we will bolster our writing practice with a toolbox of strategies to generate new writing, develop a revision process using peer feedback and exercises, read and discuss various plays and their mechanics, cultivate and act upon our creative curiosities to discover the forms that our ideas and stories want to be held in. S/NC

Fall TAPS0200 S01 10049 T 1:00-3:50 (J. Zimmerman)

Spr TAPS0200 S01 20028 T 1:00-3:50 'To Be Arranged'

TAPS 0220. Persuasive Communication.

Introduces public speaking, and helps students develop confidence in public speaking through the presentation of persuasive speeches. Primarily for seniors. Limited to 15. Instructor’s permission required. No permission will be given during pre-registration; interested students should sign up well in advance on the TAPS 0220 waitlist (application form is at https://docs.google.com/forms/d/e/1FAIpQLSdWavq-L_fukiByIGrPFdVpzCzLXCfjFID9K7I7MMjaFbwI6Q/viewform?usp=sf_link) and attend the first day of class. Attendance is mandatory. The application/waitlist process does not apply to students registering for the Summer term through the School of Professional Studies.

Fall TAPS0220 S01 10001 MW 9:00-11:50 (B. Tannenbaum)

Fall TAPS0220 S02 10002 MW 1:00-3:50 (B. Tannenbaum)

Fall TAPS0220 S03 10003 MW 9:00-11:50 (B. Tannenbaum)

Fall	TAPS0220	S04	10004	MW	1:00-3:50	(B. Tannenbaum)
Fall	TAPS0220	S05	10005	MW	9:00-11:50	(B. Tannenbaum)
Spr	TAPS0220	S01	20021	MW	9:00-11:50	(B. Tannenbaum)
Spr	TAPS0220	S02	20022	MW	1:00-3:50	(B. Tannenbaum)
Spr	TAPS0220	S03	20023	MW	9:00-11:50	(B. Tannenbaum)
Spr	TAPS0220	S04	20024	MW	1:00-3:50	(B. Tannenbaum)
Spr	TAPS0220	S05	20025	MW	9:00-11:50	(B. Tannenbaum)

TAPS 0230. Acting.

Focus on elements of dramatic analysis and interpretation as applied to the art of acting, and, by extension, directing. Monologues, scene study, and improvisation are basis for comment on individual problems. Reading of dramatic texts and theory. Substantial scene rehearsal commitment necessary. Attendance mandatory. Not open to first-year students. Instructor permission required. No permission will be given during pre-registration. S/NC

Fall	TAPS0230	S01	10034	MW	1:00-3:50	(S. dAngelo)
Fall	TAPS0230	S02	10035	TTh	1:00-3:50	'To Be Arranged'
Spr	TAPS0230	S01	20035	MW	10:00-12:50	(C. Crawford)

TAPS 0250. Introduction to Technical Theatre and Production.

This course is an introduction to the concepts and practices of stagecraft. You will be introduced to different elements of stagecraft such as scenery, lighting, and properties. Lecture and lab classes will also cover the proper and safe use of tools, the choosing of building materials, methods of construction, and the installation of electrics, scenery, and properties for the department of Theatre Arts and Performance Studies productions.

Fall	TAPS0250	S01	10045	MWF	10:00-11:50	(A. Eizenberg)
Spr	TAPS0250	S01	20026	MWF	10:00-11:50	(A. Eizenberg)

TAPS 0260. Stage Lighting.

This course is an introduction to stage lighting. Enrollment limited to 6.

Fall	TAPS0260	S01	10051	TTh	10:30-12:50	(T. Hett)

TAPS 0310. Beginning Modern Dance.

Introduction to the art of movement. Focuses on building a common vocabulary based on ballet, vernacular forms, improvisation, Laban movement analysis, American modern dance, and the body therapies. Individual work is explored. One and one-half hours of class, four days a week. Enrollment limited to 20. S/NC.

Fall	TAPS0310	S01	10039	MTWTh	1:00-2:20	(M. Bach-Coulbaly)

TAPS 0320. Dance Composition.

Focuses on building the individual's creative voice. A movement vocabulary is developed from Western techniques (ballet, American modern dance, Laban/Bartenieff movement analysis, vernacular forms, space-harmony/movement physics, and the body therapies) along with group improvisations and collaboration with artists in other disciplines. Enrollment limited to 20. S/NC.

Spr	TAPS0320	S01	20029	MWF	10:00-11:50	(M. Bach-Coulbaly)

TAPS 0700. Introduction to Theatre, Dance and Performance.

An introduction to the breadth of topics covered in the TAPS Department, this class is a gateway to the concentration open to all students interested in live arts. We will explore how, where, and why theatre, dance and performance are made and investigate their relationship to broader culture and society. Students will learn basics: how to read a play, how to appreciate dance, and how to approach the variety of venues, histories, and methods involved in production. Overlaps with other media will be explored. Visits from TAPS faculty will dovetail with the season of offerings on the TAPS main stage.

Spr	TAPS0700	S01	20044	TTh	10:30-11:50(09)	(P. Ybarra)

TAPS 0800J. Of Emotions Unbound: Feeling Middle Eastern Theatre and Performance.

How is the emotional, bodily experience of watching a theatrical production, a film, or reading a text alone different from the experience of doing so with friends in a dim room? Do feelings/moods sparked by art forms differ across bodies, regions, cultures, and media? Are sensory emotion concepts such as melancholia, euphoria, sorrow, sadness universal? Or are they historically, cross-culturally felt, framed, and situated? Do emotions, or affects, evaporate after a while? Or are they contagious, jumping across regions and bodies, perpetually re-membered from our past shaping our future? This introductory course will look at

a wide range of aesthetic-cultural forms within broader political, social, historical contexts in the Middle East and its diaspora to delve into these philosophical queries that help us understand the highly complex region in terms of emotions transgressing its physical-geographic, Eurocentric, Orientalist conceptualizations.

Spr	TAPS0800J	S01	25874	W	1:00-3:20	(M. Kimiagari)

TAPS 0800N. The Semiotics of the Broadway Musical.

In this class, we will explore the history, present, and future of one of the quintessentially American artforms—the Broadway musical—by investigating its unique combination of music, drama, dance, spectacle, and commerce. Our focus will be on investigating the different ways that the musical produces social meanings. To do so, the course will introduce concepts from semiotics—a method for studying the production and communication of meaning through various systems of “signification.” Surveying the history of the artform in four broad phases, we will how musical theater has represented quintessentially human conflicts around identity and belonging. Assignments will include weekly response posts, a midterm paper, in-class presentations, a final project, and opportunities to perform.

Fall	TAPS0800N	S01	17300	TTh	10:30-11:50(13)	(L. Hilton)

TAPS 0930A. The Actor's Instrument: Voice and Speech.

A complete and well-seasoned actor has the ability to perform with specificity and ease, both vocally and physically. Specificity comes from an integration of speech and movement technique. Ease is only possible when a mastery of technical skills reaches the point where the actor can integrate them without loss of spontaneity. The goal of this class is to give the student the fundamental techniques of voice and speech in relation to the body. Prerequisite: TAPS 0230. Enrollment limited to 16. Instructor permission required. S/NC.

Prerequisite does not apply to students registering for the Summer term through the Office of Continuing Education.

Spr	TAPS0930A	S01	20037	MW	3:45-6:00	(R. Gibel)

TAPS 1000. Intermediate Dance.

This is an intermediate-level modern dance class that extends and expands movement coursework for students who have taken TAPS 0310 or equivalent dance study. It is intended to challenge students' memory, capacity for rhythmic complexity, and improvisational competence, as well as foster a professional work ethic that can withstand abundant physical, emotional and organizational challenges.

Spr	TAPS1000	S01	20034	Arranged		(J. Dellecave)

TAPS 1100. Stage Management.

To introduce students to the principles and techniques of modern stage management from script selection to closing. Through the study of various models of stage management (both professional and academic), students will develop an appreciation of the role of the stage manager as the facilitator, mediator and organizer of the production process. Students will apply theory learned in the classroom by stage-managing or assistant stage-managing a TAPS production and/or observing other TAPS and Trinity Rep stage managers during the production process. Enrollment limited to 12.

Fall	TAPS1100	S01	10048	M	1:00-3:50	(B. Reo)

TAPS 1230. Global Theatre and Performance: Paleolithic to the Threshold of Modernity.

This course explores performance practices that predate the European Renaissance across disparate parts of the globe. Considered will be Paleolithic rock art and other evidence of ritual practices in Europe, Africa, and the Americas; ritual dramas of Egypt, Greece, and the Roman Empire; Sub-Saharan African traditions and theatre/dance forms in ancient India, medieval Japan and the indigenous Americas. In short, we will explore a wealth of differing ancestral theatrical modes and methods that continue to leave their mark in contemporary diasporic expressions.

Fall	TAPS1230	S01	10052	TTh	1:00-2:20(06)	(J. Dellecave)

TAPS 1240. Performance Historiography and Theatre History.

This course will provide an introduction to performance history and historiography by concentrating on analysis of dramatic texts, theatrical events, festival performances and “performative” state and religious ceremonies from 1500-1850. We will explore incidents in Asia, the Americas and Europe as related to state consolidation, colonization,

incipient nationalism(s), urbanization, cultural negotiation, and the representational practices he enacted. Enrollment limited to 35.

Spr TAPS1240 S01 20042 TTh 10:30-11:50(09) (L. Hilton)

TAPS 1250. Late Modern and Contemporary Theatre and Performance.

This class provides introduction to an array of theatre and performance forms of 20th- and 21st-century Europe and North America. We explore historical realism and naturalism to symbolism, the birth of avant-garde, constructivism, dada and surrealism, and myriad other modernist isms. After Stein, Artaud, and Brecht, we jump to Americas and indigenous theatre, the Harlem Renaissance, site specific art, and innovative companies and practitioners from Maria Irene Fornes to the Wooster Group, Augusto Boal and more. We study playwrights, directors, actors, dancers, designers, and performance artists. The focus is on "experimental" forms, recalling that even naturalism, in its day, was "revolutionary."

Spr TAPS1250 S01 20043 TTh 1:00-2:20(08) (I. Ramos)

TAPS 1251C. Scenic Properties and the Props Artisan.

Scenic Properties requires a working knowledge of all theatrical stagecrafts, an inventory of useful materials, and creative solutions. This class is designed to allow students to develop a creative process and pursue the skills that fortify theatre crafts. Students will hone skills in the scene shop to explore the techniques, materials, and problem solving that support craftspersons and theatre making. The course is designed to support students in creative thought processes and build confidence with practice and research. It is intended to help students grow a better understanding of scenic properties for theatre and in the support of live performance at Brown University and in the future. The course has no formal pre-requisites.

Spr TAPS1251C S01 20047 WF 3:00-6:00 (A. Haynes)

TAPS 1251E. Embodiment, Materiality and Cultural Production.

This course investigates embodiment as one of many materials engaged in contemporary art and performance practices. We will explore concepts of body/mind, the haptic, interiority, intersubjectivity, experience, spatiality, temporality, relationality, liveness, and futurity and how it occurs within a wide variety of cultural productions. Course readings are drawn from dance studies, critical race studies, gender and sexuality studies, performance studies, and museum and curatorial studies. Our theoretical inquiries will culminate in the practical experience of crafting and producing an exhibition and/or live event. No prior performance or art-making experience is required, however, students with active art practices are encouraged to utilize this opportunity to create and present their own works.

Spr TAPS1251E S01 25879 TTh 1:00-2:20(08) (J. Dellecave)

TAPS 1251P. Theatre Practicum.

This course offers the practical study of theatre through participation as a member of the production team of a Sock and Buskin theatre or dance production. Regular rehearsals, coaching and mentorship by department faculty and staff, participation in technical rehearsals and performances are required. Enrollment is available after auditioning/assignment of roles. Each student will be assigned an advisor/mentor for this process. S/NC only.

TAPS 1280G. Introduction to Theatrical Design.

This class is an introduction to the process of creating designs for live performance, with a focus on Set, Costume, Lighting, and Sound. Students will learn about the history of production design, how to analyze a script for design, the aesthetic and practical considerations of a designer, and the skills, techniques, and philosophies used to create meaningful designs for theatre. Students will gain proficiency in each area of design, as well as learn communication and collaboration skills required in a team setting. No prior experience with theatre or design is required.

Fall TAPS1280GS01 10041 WF 1:00-2:50 (R. Fitzgerald)

TAPS 1280K. Mindfulness and Movement: Interoceptive Expressive Arts.

This course cultivates and mobilizes interoceptive awareness as a means of self-expression. By slowing things down, calming the mind and focusing attention on the breath and bodily sensations we practice an open-hearted release from self-judgment. Our daily training in Somatic Studies includes

Body-Scanning, Authentic Movement, Yoga, Ideokinesis, Laban Movement Analysis, Continuum, Narrative Medicine, Feldenkrais, Automatic Writing and the Visual Arts. S/NC

Fall TAPS1280K S01 10038 MWF 10:00-11:50 (M. Bach-Coulbaly)

Spr TAPS1280K S01 26496 MWF 2:00-3:50 (M. Bach-Coulbaly)

TAPS 1280U. Voice Over for the Actor.

Has voice acting always appealed to you but you weren't sure where to start? Luckily, COVID-19 has not impacted the voice over industry and the opportunities in traditional media and digital content are ever-growing. Students will learn acting techniques and how to analyze and voice different types of copy ranging from commercials to video games, animation, audio books and more. The class also covers setting up a cost effective home studio, hardware and software, demo reels, how to find voice work and other aspects of the business. Students need a laptop/desktop computer, a mic, a quiet place to work and a stable internet connection.

Enrollment is limited to 12 to individualize learning and feedback. The focus of the course is skill building and practice in a supportive ensemble environment therefore attendance is required every class.

Fall TAPS1280U S01 10036 TTh 1:00-3:50 (S. dAngelo)

TAPS 1280W. Native American Indigenous Theatre Performance.

Investigates Native American Indigenous Theatre performance through the study of new contemporary plays. Diverse performance styles informed by Indigenous ways of being and knowing, language, land and identity distinguish Native American Indigenous Theatre performance from Euro-American styles. Inquiry beyond western theatrical understandings is required to center Indigenous narratives and to grasp the rich spectrum offered in the storytelling. Methods of community knowledge production will include guest artists, orality, place / object-making and embodiment to contextualize Indigenous values and their application to decolonize performance spaces, methods of working and theatre-making. All are welcome!

Spr TAPS1280WS01 20032 W 1:00-3:30 (S. dAngelo)

TAPS 1281A. Director/Designer Collaborative Studio.

Students will explore the relationship between director and designer within the production process. The main objective is to improve collaboration and production output by learning the language, tools, and skills involved in each area of discipline so as to enhance creative output. Enrollment limited to 17 students.

Spr TAPS1281A S01 20018 M 1:00-4:50 (K. Moore)

TAPS 1281E. Directing Theory and Practice.

Directing Theory and Practice is a hybrid academic and studio class designed to introduce students to the history, theory, and practice of the director's craft. Readings on the theoretical/practical methods of direction are examined closely in class discussions and directing projects. All students must serve as actors and directors throughout.

Fall TAPS1281E S01 17598 M 12:30-4:20 (K. Moore)

TAPS 1281G. Queer Dance.

In this course we will study the intersections of dance studies and queer studies, in an inquiry into the emerging field of Queer Dance. What does dance do for queer studies? How does queer studies further dance studies? What constitutes dance as queer? Students will study, observe, examine, discuss, and at times participate in queer dance from a range of historical and global perspectives. Course readings are drawn from dance studies, critical race studies, gender and sexuality studies, and performance studies. Readings are complemented by screenings, movement exercises, and live performance. No prior dance or performance experience is necessary.

Spr TAPS1281GS02 25983 MW 5:00-6:20 (J. Dellecave)

TAPS 1281H. Collaborations in Performance: Theory and Practice Moving Together.

This is a hybrid theory and practice course, where students will study and experiment with contemporary collaborative practices. We will investigate collaborations between people, disciplines, theories, practices, spaces, places, mediums, cultures, and institutions. Our readings and theoretical inquiries draw primarily from texts about dance-focused U.S. contemporary performance. Readings will serve as case studies for a series of collaborative projects and experiments. This course will culminate

in a final paper and final performance study. Makers and collaborators of all disciplines are welcome. A curious, generous, and open approach to working with others is required. No prior dance or performance experience is necessary.

Fall TAPS1281H S01 17229 MW 2:30-3:50 (J. Dellecave)

TAPS 1281O. Acting Outside the Box: Race, Class, Gender and Sexuality in Performance.

Examines the relationship between social and cultural identities and their representations in dramatic literature and performance. Students will be expected to read critical essays and plays, conduct research, and prepare to act in scenes that challenge the actor to confront the specifics of character and situation beyond the Eurocentric ideal. The goal is to strengthen the actor's ability to construct truly meaningful characters by removing any reliance of "type" and/or immediate "identification" with the characters they will portray. Open to Any Brown/RISD graduate/undergraduate student that has taken TAPS 0230/Acting or the equivalent. Students should be aware that this is a hybrid Research and Performance class which may be counted as either a Performance Studies/Theatre Arts course for credit. Instructor Permission is Required. Interested students should attend the first class meeting in order to apply.

Spr TAPS1281OS02 25887 TTh 1:00-3:50 (K. Moore)

TAPS 1281X. Costume Design.

To provide instruction in the basic techniques of theatrical costume design. This will include: figure drawing; how the elements and principles of design relate to and are utilized in costume design; collaboration; script analysis; research methods; costume design process; character analysis; the function and purpose of costumes in theatre and an introduction to costume history. Emphasis of this course will be on the process of how to design, how to think like a designer, and how to communicate as a designer. This course is intended to lay the foundation for further study while empowering students to actively engage as costume designers in productions on campus.

Spr TAPS1281X S01 20041 TTh 10:30-12:20 (R. Cesario)

TAPS 1285. Film Acting.

This intermediate acting class is designed to introduce and develop the tools necessary for acting on camera; to examine the application of the screenplay as a blueprint for the finished film; and to pursue the process and demands of working under limited and quickly changing conditions. Utilizing an extensive library of screenplays, the class will study film scene analysis and preparation, pro-active choice, and heightened connection. They will develop and hone the skill to remain present and vital through multiple takes of the scene, keeping emphasis on process rather than presentation.

Fall TAPS1285 S01 10044 MW 10:00-12:50 (R. Waterhouse)

TAPS 1320. Choreography.

Designed for those who have had some experience in composition and would like to work, under supervision, on making dances. Emphasizes making full-length dances for small and large groups and demands a sophisticated use of space, dynamics, and music. Further emphasis on viewing and interpreting contemporary works from a choreographic viewpoint. S/NC.

Fall TAPS1320 S01 18708 TTh 4:30-6:20 (D. Braz)

TAPS 1337. Introduction to FlexN Dance & Movement.

This course is an open level course that focuses on the history, foundations such as Dancehall and dance movement vocabularies of the international street dance style Flexn. Students will also be introduced to techniques from other dance styles that help broaden the experience. Engaging with this vernacular dance practice, students will build improvisational skills, develop rhythmic abilities, and begin learning some techniques to storytell through dance and movement. Students will learn ways to artistically respond to their world & past/current events, individually and collaboratively. These skills and conversations help students understand the relationship between the self and the communal.

Fall TAPS1337 S01 18707 TTh 2:30-4:20 (D. Braz)

TAPS 1341. Introduction to Ballet.

An introduction to the classical ballet vocabulary and basic movement patterns. We will focus on maintaining correct body alignment while increasing fitness and coordination, and develop a deeper appreciation for

ballet in the context of the liberal arts. No prior ballet or dance experience is necessary for this course, but dancers who would like to brush up on basics are also welcome.

Spr TAPS1341 S01 20030 TTh 2:00-3:50 (P. Seto-Weiss)

TAPS 1343. Ballet III (Intermediate/Advanced Ballet).

This course is designed for students who have successfully completed Ballet II (TAPS 1342) and kept up with their dance conditioning, or for students with previous ballet experience at an advanced beginner/intermediate level. The main focus of this class is on center exercises, especially on pirouettes and petit, medium and grand allegro appropriate for an intermediate level.

Fall TAPS1343 S01 17228 TTh 2:00-3:50 (P. Seto-Weiss)

TAPS 1344. Advanced Ballet with Repertory.

This advanced level half-credit ballet course will provide students with the opportunity to continue to refine their ballet technique while also exploring new and/or iconic repertory. We will focus on advanced barre and center work for the first part of the class with continued emphasis on placement and accuracy while increasing speed and level of difficulty. For the second half of the class, we will work on wide-ranging ballet repertory which will culminate in a dance performance. Instructor override required. This half-credit course can be repeated for credit. Mandatory S/NC.

Spr TAPS1344 S01 20031 TTh 5:00-6:50 (P. Seto-Weiss)

TAPS 1348. Contemporary Dance Studio Project.

This advanced level course will provide an opportunity to deepen an existing skill set in contemporary dance and will ultimately culminate in the creation of new work for performance. Studio practice will focus on technical foundations rooted in postmodern modalities - somatics, Release Techniques, contemporary floorwork, and contemporary partnering - and offer exposure to diverse improvisatory frameworks and choreographic tools for the dancer and dancemaker. The personal growth of each participant will be valued as well as the pursuit of company cohesion and collaboration. This half-credit course can be repeated for credit. Participation over both semesters is strongly encouraged. Instructor override required. S/NC.

Fall TAPS1348 S01 10040 TTh 10:00-12:50 (S. Baryshnikov)

Spr TAPS1348 S01 20036 MWF 12:00-1:50 (S. Baryshnikov)

TAPS 1500H. Advanced Playwriting.

This course brings together students of diverse writing backgrounds to build conversation and experimentation around multiple narrative techniques. Classes include craft exercises as well as readings from a range of texts—all to look deeper at how story-worlds are built. Writers create original theatrical works, and through workshop-style classes discover their own particular voice and what makes it unique and necessary. Open to graduate and undergraduate students. Contact instructor to learn more.

Spr TAPS1500H S01 20046 F 10:00-12:30 (D. Smith)

TAPS 1500P. Asian American Theater Making.

This course frames Asian American theater-making as a dynamic assertion of presence, autonomy and complexity against and beyond a backdrop of cultural, legal and historical exclusion, erasure and assimilation in the United States. In investigating theatrical practices and contexts made about, by and/or for Asian Americans, we explore the in/stability of identity as embodied sites of ambivalence, tension and solidarity. How do Asian American theater artists integrate, reject and transcend the myriad expectations of identity and representation? As scholars and artists, we will read plays, witness and create performances, discuss critical and historical essays and artifacts, and interact with active practitioners across a wide spectrum of Asian American theater-making. Open to advanced undergraduates/graduate students.

Spr TAPS1500P S01 20048 F 10:00-12:30 (S. Skiles)

TAPS 1500Q. Black Expressive Cultures.

This course explores black expressive cultures in diasporan perspective.

Fall TAPS1500Q S01 18539 T 10:00-12:20 (J. Brown)

TAPS 1500R. Auditioning for the Camera.

This course focuses on learning to audition for scenes and scripts from film and television from the vast array of the entertainment industry. Work will cater to each student's individual needs, choosing material that both strengthens and stretches them. We will work on preparing scenes for

an audition: in person, on zoom, self-tapes and cold auditions. We will discuss over-preparing and under-preparing and how to dress and present yourself. This work should complement and enhance previous acting studies and help you with an understanding about the nuanced shifts actors need to make when auditioning for the camera, and the difference between auditioning and playing the role. Your professor is a working actor who will provide examples of what she is teaching in real time. The semester will culminate with 3 audition pieces from both media filmed for your use. S/NC

Fall	TAPS1500R	S01	17162	T	10:00-12:30	(K. Burton)

TAPS 1751. Choreodaemonics.

The phrase "choreodaemonics" is a contraction of "choreography" (the art of bodily movement through space and time creating meaning) and "daemon" (a background computational process). Within this rubric, this seminar seeks to explore the creative opportunities and political risks of creative production through emerging technologies of AI, robotics and virtual presence. Most urgently, "Choreodaemonics" examines the ideological, technological and aesthetic collisions wherever humans collide with emerging computational systems. Students will consider the histories and processes of creative production and technological development, and ultimately investigate the performative consequences of embodiment by computational agents through robots, avatars, games, software, customer service platforms and social media.

Spr	TAPS1751	S01	26610	TTh	10:30-11:50(09)	(S. Skybetter)

TAPS 1970. Independent Reading and Research.

Intensive reading and research on selected topics arranged in terms of special needs and interests of the student. A written proposal must be submitted to the instructor and the chair of the theatre arts department before the project can be approved. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

TAPS 1970P. Theatre Practicum.

This half-credit course offers the practical study of theatre through participation as a member of the production team of a Sock and Buskin theatre or dance production. Regular rehearsals, coaching and mentorship by department faculty and staff, participation in technical rehearsals and performances are required. Enrollment is available after auditioning/assignment of roles. Each student will be assigned an advisor/mentor for this process. This half-credit course offering is appropriate for students engaging in production projects that are smaller in scale or shorter in duration than befitting of the one-credit Theatre Practicum course offering, TAPS 1251P. S/NC only.

TAPS 1990. Senior Honors Thesis Preparation.

To be taken by all students accepted into the theatre arts honors program. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

TAPS 2100. Seminar in Performance Studies and Theatrical Theory.

Key texts in Performance Studies and Theatre Theory selected from works by ancient, modern, and contemporary philosophers, dramatists, performers, and theorists. Covers basic methodological trends crucial to thinking about mimesis and alterity, acting and actants, identity formation and disidentification, decolonial theory and feminist theory in relationship to the study of performance, performativity, drama and theatricality. Enrollment limited to 20.

Fall	TAPS2100	S01	17599	T	12:30-3:00(06)	(I. Ramos)

TAPS 2200T. Who Else: mimesis, performance, psyche.

In this course, we'll read in, around, and against psychoanalytic theory to think about how theories of the subject, and especially of desire and pleasure, have intersected with ideas about aesthetics and performance. Throughout, we'll pay special attention to constructions of alterity—difference from the self—and how love, art and performance work in relation to different kinds of difference.

Spr	TAPS2200T	S01	26495	W	1:00-3:50	(J. Jarcho)

TAPS 2300. Pedagogy Seminar.

This half-credit course is designed to support MFA Playwriting students preparing to begin teaching the following year, as well as TAPS PhD students as they prepare to teach, begin to teach, or continue teaching. The intent is to offer a space for students to reflect on teaching, bring

concerns, and offer each other feedback on pedagogical issues; to introduce resources (from Brown and not) that can help with teaching, both methodologically and practically; and to workshop concrete teaching tasks, such as building and executing lesson plans, grading, and designing syllabi. Students in the course will also observe classes taught by three other instructors during the semester.

Spr	TAPS2300	S01	20045	F	2:00-4:15	(P. Ybarra)

TAPS 2310. Graduate Playwriting.

This course is a combination of workshop and seminar, which MFA Playwriting students take every semester in residence. Students write and revise a new play over the course of the term, sharing work periodically. Weekly reading assignments (plays, theoretical texts, other literary works, works in other media) are designed to expand and unsettle your grasp of this art form. Requirements include detailed written and oral feedback, lively participation, presentations, and written exercises. May be taken multiple times for credit. Other graduate students and undergraduates may contact the instructor to request admission to the course, based on a writing sample and relevant experience. S/NC.

Fall	TAPS2310	S01	10031	Th	11:00-4:00	(J. Jarcho)

Spr	TAPS2310	S01	20020	Th	11:00-4:00	(J. Jarcho)

TAPS 2450. Exchange Scholar Program.

Fall	TAPS2450	S01	16636	Arranged		'To Be Arranged'

TAPS 2605. Fundamentals of Acting: Shakespeare and Classical Verse.

An introduction to the conventions of classical English verse performance, including elements of meter, heightened language, metaphor and rhetoric, with the goal of expanding the actor's understanding of the principles of realistic acting to the rigorous demands of Shakespearean and other classical texts. This course includes separate classes in Scene Study, Voice and Movement, all designed to support and promote heightened poetic expressivity in performance. S/NC

Fall	TAPS2605	S01	10057	Arranged		(S. Baryshnikov)

TAPS 2615. Acting Technique III: Poetic Expression.

Vocal and physical work designed to support the exploration of classical verse acting, with an emphasis on expanding a range of performance beyond realism. Rhythm, fluidity, presence, power, clarity of thought and the expression of emotional depth through language and movement is the focus of studio practice. Also included is introduction to singing technique. This course includes separate classes in Movement Technique, Alexander Technique and Singing.

Fall	TAPS2615	S01	10058	Arranged		(A. Brazil)

TAPS 2625. Playwriting Dramaturgy Practicum.

This course is advanced playwriting and script analysis for second year students. We will look deeper at the tools and craft of playwriting. We will begin by exploring adaptation—what are the bones and tissues of a given story? How can that body be transformed into a theatrical story? What is required? What changes? What is the relationship between form and content? We will transition from adaptation to writing original full-length works.

Fall	TAPS2625	S01	10060	Arranged		(A. Brazil)

TAPS 2635. Directing III: The Director's Vision.

This course is for Brown/Trinity MFA Actors and Directors and focuses on the vision of the director. Deep investigation in complicated language, verse, period. Continued development in collaboration with actors as well as personal mission, and vision. Seminar discussion of current work in process and production, exploration of contemporary dramatic forms and practitioners, issues in the art and craft of directing, diagnostic and exchange around the breaking of boundaries and best practices. Seminar runs concurrently with Directors Lab, Director projects, including thesis, and verse.

Fall	TAPS2635	S01	10059	Arranged		(B. Mertes)

TAPS 2655. Advanced Acting: Shakespeare and Classical Verse.

In-depth study of the methods and practice of classical acting, with the goal of developing professional-level skill and mastery of the form. Actors work toward total integration of the physical and vocal instrument into a unified whole to achieve complete expressivity of thought, emotion, character and imagination through poetic language and vigorous,

purposeful and creative physicality. This course includes separate classes in Scene Study, Voice and Movement Composition.

Spr TAPS2655 S01 20010 Arranged (S. Baryshnikov)

TAPS 2665. Acting Technique IV: Creativity and Virtuosity.

A culmination of the technical practice of the previous three semesters, with the goal of achieving a professional level of technical expertise. Through mastery of the vocal and physical instrument, the actor is prepared to fulfill creative, imaginative and athletic choices in physical and vocal performance. This course includes separate classes in Alexander Technique, Singing and Movement/Devising.

Spr TAPS2665 S01 20011 Arranged (A. Brazil)

TAPS 2675. Advanced Playwriting.

We will do craft exercises and close readings of texts to look deeper at how works are built. We will explore, discover, and map the mechanics of a diverse range of texts. You will have the opportunity to experiment with those same mechanics to create your own pieces. Through energetic workshop-style classes, you will experience the full process of drafting, hearing aloud, and then revising original works. In charting and defining others' voices, you will discover your own particular voice and what makes it valuable and necessary.

Spr TAPS2675 S01 20013 Arranged (D. Smith)

TAPS 2685. Directing IV: Special Topics.

This course is focused on the development of advanced and augmented research and the deepening of communication with designers and production team. Directors will explore a variety of methodologies and approaches to theater-making.

Spr TAPS2685 S01 20012 Arranged (B. Mertes)

TAPS 2705. Third Year Practicum: The Actor as Creator.

Based upon a foundation of mastery in realistic and classical acting styles, actors engage in an exploration of historical, modern and contemporary dramatic literature and theatre practice with a goal of developing a personal aesthetic voice that pushes the boundaries of convention and tradition in their mature theatre practice. This course includes separate classes in Scene Study, Voice, Movement and Alexander Technique, as well as participation in Director's Lab. S/NC

Fall TAPS2705 S01 10062 Arranged (R. Christopher)

TAPS 2715. Professional Development and Performance.

This course builds upon the first two years of acting technique training. Students will use the foundational technique acquired as they add the critical component of preparation to enter the professional theater, television, film, and audiobook industries. Actors will select material for themselves and their colleagues in preparation for spring Showcase rehearsals. Students will cut/arrange selected material to an appropriate length, propose several partner pairings for each scene, and work on further adaptations and pairings as necessary. Workshops with industry professionals in casting, entertainment unions, agencies, self-taping, audiobook work, on-camera technique and auditioning will be scheduled throughout the semester. Mandatory S/NC

Fall TAPS2715 S01 10063 Arranged (A. Brazil)

TAPS 2755. Third Year Practicum: The Actor as Total Theatre Artist.

Actor's produce, direct, write and perform an original solo piece as a culmination of their ongoing study of acting, directing and playwriting, with the goal of developing confident expression of their singular voice, point of view and artistic aesthetic as they enter the professional world. Writing, devising, presentation and critique of ongoing work all take place throughout the semester, culminating in a final public performance that serves as an acting thesis and manifesto of the actor's identity as an individual artist. This course includes private work with members of the Acting, Directing, Voice, Movement, and Playwriting faculty.

Spr TAPS2755 S01 20015 Arranged (R. Christopher)

TAPS 2765. Professional Development and Performance - Spring.

This course is a continuation of work begun in the fall semester. Students in this course will rehearse scenes selected in the fall semester, choose and rehearse songs or musical material, and stage both for their professional Showcase. They will perform their Showcase for our community in Providence, and travel to New York and Los Angeles to perform for industry professionals. In addition, several single and multi-day workshops with industry professionals may also be scheduled throughout

the course of the semester. These workshops will be scheduled based on the availability of industry guests.

Spr TAPS2765 S01 20016 Arranged (A. Brazil)

TAPS 2775. Directing Seminar.

Seminar discussion of current work in process and production, exploration of contemporary dramatic forms and practitioners, issues in the art and craft of directing, diagnostic and exchange around the breaking of boundaries and best practices. Seminar runs concurrently with Directors Lab, Director projects, including thesis, and verse. Directors Lab provides work for critical analysis. This course is required for all Brown/Trinity Rep MFA Directors. The course is S/NC.

Fall TAPS2775 S01 17602 Arranged (B. Mertes)

TAPS 2970. Comprehensive Examination Preparation.

For graduate students who have met the tuition requirement and are paying the registration fee to continue active enrollment while preparing for a preliminary examination.

Fall TAPS2970 S01 16637 Arranged 'To Be Arranged'

Spr TAPS2970 S01 25286 Arranged 'To Be Arranged'

TAPS 2975. Thesis Workshop.

For graduate playwrights, in their second and third years, rehearsing and revising their thesis projects. May be taken multiple times for credit. Must be taken both semesters in the third year.

TAPS 2980. Graduate Level Independent Reading and Research.

A program of intensive reading and research on selected topics arranged in terms of special needs and interests of the student. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

TAPS 2981. Master's Thesis Research.

Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

TAPS 2990. Thesis Preparation.

For graduate students who have met the residency requirement and are continuing research on a full time basis.

Fall TAPS2990 S01 16638 Arranged 'To Be Arranged'

Spr TAPS2990 S01 25287 Arranged 'To Be Arranged'

University Courses

UNIV 0123. Practical Introduction to Peer Advising.

A defining part of Brown's Open Curriculum is the central role that students play in supporting the learning of their peers. In this class, you – in community with your classmates as potential future peer advisors – will learn best practices in inclusive advising pedagogy while exploring specific academic, co-curricular, professional, and social challenges, opportunities, and resources at Brown. Coursework includes self-reflection, peer-to-peer sharing, hands-on exercises, and theoretical readings that culminate in a group project exploring an advising area of interest and importance to you. Those who successfully complete the course will receive preference for funded peer advising positions within the College, including the Meiklejohn Peer Advising program. (Mandatory S/NC, Half-Credit Course restricted to semester levels 01 to 06.)

Spr UNIV0123 S01 25534 M 3:00-4:20 (R. Zia)

UNIV 0400. Beyond Narnia: The Literature of C.S. Lewis.

C.S. Lewis was one of the most widely read authors of the 20th Century, yet much of his philosophical, theological and political theories are unfamiliar. His fiction and philosophical writings will be explored to better understand his perspective on modern humanity, the relationship of man to family, the community and the state. C.S. Lewis had a very clear philosophy on the importance of the individual and how he relates to the larger social structures. Morality and the role of individuals as they interface with others around them and their responsibility for working with society both at community level and at the macro-state level will be explored.

Spr UNIV0400 S01 20250 T 4:00-6:30(16) (T. Flanigan)

Spr UNIV0400 S02 20251 W 3:00-5:30(10) (E. Wing)

Spr UNIV0400 S03 20252 F 3:00-5:30(15) (T. Flanigan)

UNIV 0456. Exploring Career Options.

It's normal not to know what you want to do for the rest of your life, or even for the next few months. You're definitely not the only one who doesn't have it figured out yet. This course is designed to help you begin the process of identifying and reflecting on your skills, interests, values, and strengths to help you consider and explore internships, jobs, and career fields that might interest you. The course will also introduce you to internship and job search skills – resume, cover letter and LinkedIn profile writing, networking, interviewing, and negotiating – as well as frameworks to help you approach career-related decision making. (Mandatory S/NC, Half-Credit Course restricted to undergraduate students in semester levels 03 or 04.)

Fall UNIV0456 S01 17103 M 3:00-4:20 (R. Zia)

UNIV 1003. Jerusalem: Jews, Christians, Muslims.

In this course, we will examine how competing heritage narratives of the city of Jerusalem have been shaped by Jewish, Christian, and Muslim histories and beliefs, as well as by Israeli, Palestinian, and international views and interests. We will explore the impact of media portrayal, educational platforms, and archaeological explorations in the contexts of social, religious, and political debates from the mid-nineteenth century to the present. At the focus will be the question of the city's indivisible heritage and boundaries that divide the city and its communities.

Spr UNIV1003 S01 25440 W 3:00-5:30(10) (K. Galor)

UNIV 1110. The Theory and Teaching of Problem Solving.

What is a problem and how do you solve one? What relationship exists between problem-solving and teaching? This course is designed for STEM focused students (but it is open to all) who are teaching/will teach and are interested in improving their problem-solving and teaching. You will gain the skills that will aid you in your own learning, promote learning in others, improve communication and problem-solving capabilities, and prepare you to engage more deeply in diverse learning spaces. In the final weeks of the course you will apply concepts to a Scholarship of Teaching and Learning project that focuses on improving/examining problem-solving and/or teaching in your field. S/NC

Fall UNIV1110 S01 17110 TTh 1:00-2:20(06) (C. Smith)

UNIV 1211. Brown Experiential Learning Practicum.

This course is an optional 1-credit seminar for students participating in an off-campus semester internship. The course is centered around a 10-hour/week internship, which provides an immersive experiential learning opportunity. Seminar sessions, workshops, reading and writing assignments enable students to reflect on their internship experiences, contextualize their work and organization within the broader environments, and develop academic and professional skills. (Mandatory S/NC; Instructor approval required.)

Fall UNIV1211 S01 18671 Arranged (K. Watts)

UNIV 1221. Brown Experiential Learning Practicum.

This course is a required 2-credit seminar for students participating in an off-campus semester internship. The course is centered around a 20-hour/week internship, which provides an immersive experiential learning opportunity. Seminar sessions, workshops, reading and writing assignments enable students to reflect on their internship experiences, contextualize their work and organization within the broader environments, and develop academic and professional skills. (Mandatory S/NC; Instructor approval required.)

Fall UNIV1221 S01 18673 T 8:00-9:30 (K. Watts)

Fall UNIV1221 S02 18674 W 11:00-12:30 (K. Watts)

UNIV 1801. Brown in Washington, D.C. Practicum.

This course is a required 2-credit course for students participating in the Brown in Washington, D.C. program. The course is centered around a challenging 30-hour/week internship in a public-sector or not-for-profit organization in Washington, D.C., which provides an immersive experiential learning opportunity at an organization or agency involved in the public policy process. Seminar sessions, workshops, field trips, and reading and writing assignments enable students to reflect on their internship experiences, contextualize their work and organization within the broader DC policy environment, and develop academic and professional skills

Fall UNIV1801 S01 18954 M 2:00-5:00 (J. Frelrier)

Urban Studies**URBN 0210. The City: An Introduction to Urban Studies.**

With over half the world's population now living in cities, understanding the past and present of urbanization is critical to the planet's collective future. This course introduces students to cities and urban life around the globe. Drawing upon multiple disciplines, it explores questions like: How do histories of urban planning shape present patterns of inequality? How does rampant urban growth impact ecology and health? How do new identities and solidarities arise in cities, and what effects does citizen activism have on urban politics? What urgent challenges face cities today, and how might these be creatively overcome by communities, planners, and governments?

Fall URBN0210 S01 17700 TTh 1:00-2:20(06) (L. Yapp)

URBN 0214. The U.S. Metropolis: Cities and Suburbs in American History.

This lecture and discussion course will provide students with an introduction to the history, culture, and politics of United States cities and suburbs from the beginnings of the nation to the close of the twentieth century. Readings are drawn from recent work in the cultural, political, and social history of the U.S. as well as primary sources drawn from the period. Topics: urban and suburban development, urban cultural forms, urban social and political movements, and "urbanist" intellectual and policy initiatives that have sought to understand and shape urbanization and suburbanization. Lectures, readings, and discussions will stress the challenge that urbanization has presented for U.S. political culture, the ways urbanism has sought to meet those challenges, and the role of class, gender, and race in shaping urban and suburban culture, politics, and the development of the built environment.

Fall URBN0214 S01 17924 TTh 2:30-3:50(12) (S. Zipp)

URBN 0215. Urban Life in the Global South.

Cities in the so-called "Global South" – from Jakarta to Johannesburg, Lima to Lahore, Dakar to Delhi – are vibrant, complex, and key to the future of our rapidly urbanizing world. While undoubtedly places of challenge and conflict, these cities are also hotbeds of creativity and activism, where alternative ways of building, governing, and sustaining urban communities take shape. This course first traces the historical forces of colonialism, nationalism, and globalization that have shaped cities across Asia, Africa, and Latin America, before delving into a range of social, political, and environmental issues that local city-dwellers and their leaders grapple with today.

Spr URBN0215 S01 25948 TTh 1:00-2:20(08) (L. Yapp)

URBN 1000. Fieldwork in the Urban Community.

Each student undertakes a fieldwork project in close collaboration with a government agency, a nonprofit association, or a planning firm, thereby simultaneously engaging with community and learning qualitative research methods skills. In weekly seminar meetings, the class examines a series of urban issues and discusses fieldwork methodology. Students also schedule regular appointments with the instructor.

Spr URBN1000 S01 25946 Th 4:00-6:30(17) (J. Pacewicz)

URBN 1250. The Political Foundations of the City.

This course examines the history of urban and social welfare policy in the United States and abroad. It reviews major theories accounting for the origins and subsequent development of welfare states, explains the "exceptional" nature of American public policy, and employs a combination of historical texts and case studies to analyze the connections between politics and the urban environment.

Spr URBN1250 S01 25945 TTh 9:00-10:20(05) (J. Pacewicz)

URBN 1270. Urban Politics and Urban Public Policy.

A central theme of the course is that urban politics in the United arises from the interplay of governmental power and private resources. The course describes the emergence of urban America; the modern city and the theories that have evolved to explain urban politics; and the nature of the urban condition with particular emphasis on the challenges faced by residents and government in the post-industrial city.

Fall URBN1270 S01 17699 TTh 10:30-11:50(13) (M. Orr)

URBN 1870D. Downtown Development.

This seminar examines the development and revitalization of the urban core in the United States with a focus on urban planning. Providence is used as a laboratory to explore development from the perspective of the planner, the developer, and city residents. Important concepts are illustrated through field trips, public meetings, and guest speakers.

Fall URBN1870CS01 17703 Th 4:00-6:30(04) (R. Azar)

URBN 1870T. Transportation: An Urban Planning Perspective.

This seminar explores how urban planners in the U.S. plan for and around various transportation networks. We will examine how these networks are designed and funded, which modes get priority over others, and ultimately how transportation shapes the built environment. Realworld examples of plans and projects from Providence and Rhode Island are used throughout the course. Important concepts are illustrated through field trips and guest speakers.

Spr URBN1870TS01 25949 Th 4:00-6:30(17) (R. Azar)

URBN 1871A. Heritage in the Metropolis: Remembering and Preserving the Urban Past.

Urban heritage – from archaeological sites and historic architecture to longstanding cultural practices – is increasingly threatened by the exponential growth of cities around the globe. Most critically, the complex histories and lived experiences of the diverse communities who have inhabited and shaped cities are often in danger of being erased and forgotten today. This course examines how we might remember and preserve this urban past – and the tangible sites and artifacts that attest to it – in light of the social and political dynamics of cities in the present.

Fall URBN1871AS01 17701 W 3:00-5:30(10) (L. Yapp)

URBN 1871G. Urban Asia: Beyond Tradition, Modernity, and Crisis.

In popular portrayals, the diverse cities of Asia are often caricatured as icons of eternal tradition, dazzling modernity, or intractable crisis. This seminar goes beyond these simplistic narratives to explore change and continuity in some of the world's oldest and largest urban centers, delving into both the rich history of Asian urbanisms and the complexities of city life in the region today. Films, poetry, short stories, and artwork are paired with scholarly research to examine how urban Asia has been experienced, imagined, and represented over the centuries.

Spr URBN1871GS01 25947 W 3:00-5:30(10) (L. Yapp)

URBN 1943. The Real Estate Development Process: An Entrepreneurial Lens.

Real estate development is the ongoing configuration of the built environment for society's needs. The improved spaces in which we live, work, and play all started as ideas initiated and brought to fruition. Every real estate project, whether it's making use of unused land or redeveloping existing properties, is in essence a separate business undertaking employing the three factors of production - land, labor, and capital - to create a new or changed product. These factors are coordinated by entrepreneurial management and delivered by teams.

Spr URBN1943 S01 25950 T 4:00-6:30(16) (J. Cohen)

URBN 1970. Independent Reading and Research.

A specific program of intensive reading and research arranged in terms of the special needs and interests of the student. Open primarily to concentrators, but others may be admitted by written permission. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course.

URBN 1971. Senior Honors Thesis I in Urban Studies.

A program of intensive reading, research, and writing under the direction of a faculty member. Permission should be obtained from the Thesis Advisor in Urban Studies. Mandatory attendance at periodic meetings during the semester is required. Open to Senior Urban Studies concentrators pursuing Honors in Urban Studies. Instructor permission required.

URBN 1972. Senior Honors Thesis II in Urban Studies.

A program of intensive reading, research, and writing under the direction of a faculty member. Permission should be obtained from the Thesis Advisor in Urban Studies. Mandatory attendance at periodic meetings during the semester is required. Open to Senior Urban Studies

concentrators pursuing Honors in Urban Studies. Instructor permission required.

URBN 1981. Honors Thesis Workshop.

This seminar introduces students to independent research and writing skills necessary for successful and timely completion of the honors thesis. Course work includes presentation of one's own thesis drafts and peer review of classmates' work. All students who submit an approved honors thesis proposal shall enroll in URBN 1981 for the spring semester of their thesis research and writing. Concentrators may also enroll in the course during semesters 6 or 7 in preparation for the honors thesis, but must present a written proposal in place of chapters. Enrollment limited to 20 juniors and seniors in Urban Studies. S/N/C

Fall URBN1981 S01 17702 Arranged (L. Yapp)

URBN XLIST. Courses of Interest to Concentrators in Urban Studies. Fall 2024

The following courses offered by other departments will fulfill Core Discipline, Seminar, and Complementary Course requirements of the Urban Studies concentration. (Please refer to the Urban Studies website to determine which requirements are fulfilled by these courses.)

Please check with the sponsoring department for times and locations.

Comparative Literature

COLT 0810L The Pursuit of Happiness **Religious studies**

COST 0120 The Classical Chinese Philosophy of Life COST 0535 Self

Transformation and Transcendence in Later Daoist Contemplative Traditions

COST 1082 Me, Myself, and I: Exploring Senses of Self from a Multidisciplinary

Perspective RELS 0120 The Classical Chinese Philosophy of Life RELS 0535

Self Transformation and Transcendence in Later Daoist Contemplative Traditions

RELS 1385 Religion and Postmodernism **Cognitive, Linguistic & Psychological**

Sciences

CLPS 0010 Mind, Brain and Behavior: An Interdisciplinary Approach CLPS 1280B

Special Topics in Cognition: Collective Cognition CLPS 1755 Moral Psychology **Data**

Science Institute

DATA 0080 Data, Ethics and Society **Gender and Sexuality Studies**

GNSS 1400 Agnotology: The Will to Ignorance **Classics**

GREK 1111K Aristotle's Theology in Metaphysics Lambda **Political Science**

POLS 0110 Introduction to Political Thought POLS 1520 Introduction to Feminist

Theory POLS 1821I Issues in Democratic Theory **Sociology**

SOC 1010 Classical Sociological Theory

Visual Art**VISA 0100. Studio Foundation.**

Required for all VA and RISD courses (with the exception of VISA0120, VISA0130, VISA0140, VISA0150 and VISA0160). Covers the basics of drawing and 2D design while cultivating the capacity for visual thinking.

Fall VISA0100 S01 18596 MW 10:00-11:50 (S. Koetter)

Fall VISA0100 S02 18597 TTh 1:00-2:50 (J. Laustsen)

Fall VISA0100 S03 18598 TTh 4:00-5:50 (J. Laustsen)

Fall VISA0100 S04 18599 MW 1:00-2:50 (V. Scheff)

Fall VISA0100 S05 18600 MW 4:00-5:50 (V. Scheff)

Fall VISA0100 S06 18601 T 1:00-4:50 (Z. Coc-Chang)

VISA 0120. Foundation Media.

Foundation media focuses on the production and theory of time-based digital media and introduces the computer as a medium and a tool for art. Students will experiment with the production of video, sound, and interactive media. Students will examine and produce work that is multidisciplinary in nature, combining aspects of critical discourse, art, and technology.

Fall VISA0120 S01 18584 MW 5:00-6:50 (B. Davis)

VISA 0130. Sculpture Foundation.

This is an extensive study in form and structure. It is designed to develop spatial understanding and the fundamentals of 3-dimensional design and construction. Students will explore the structural, compositional and conceptual implications of common materials, such as wood, metal, plaster and found objects. Projects are designed as a means for investigating a variety of sculptural processes. Students will learn safe usage of power and hand tools, casting techniques, wood and metal work. In addition, special emphasis will be placed on creativity, critical thinking and the ability to successfully articulate ideas visually.

Fall VISA0130 S01 18605 W 1:00-4:50 (D. Stupar)

VISA 0140. Photography Foundation.

This class is a wide ranging technical and conceptual introduction to photography. Through weekly projects, students will be exposed to 19th-21st century photo processes. Topics covered include cameras, lenses, software, darkroom overview, scanning, natural and artificial lighting, alternative processes as well as concepts such as selective focus, color temperature, composition. Short readings and in-class slide presentations on a diverse range of photographers will introduce students to the history of photography. This course will prepare students for upper level Photography classes at Brown and RISD.

Fall VISA0140 S01 18855 F 10:00-1:50 (M. Krinsky)

VISA 0150. Digital 2D Foundation.

This foundation studio course introduces the basic practices and concepts of two-dimensional digital media production including image acquisition, editing and manipulation, vector illustration, and preparation for online and offline viewing. Through studio exercises, readings, and assignments we will experiment with the production of electronic images. We will be looking at and producing work that is conscious and critical in nature, and which combines aspects of contemporary art, media, and technology. Collaboration and group work will be encouraged to share learning techniques and skill resources.

Fall VISA0150 S01 18586 T 1:00-4:50 (M. Cetilia)

Fall VISA0150 S02 18587 Th 1:00-4:50 (M. Cetilia)

VISA 0160. Foundation Painting.

Painting in acrylics for a variety of interests and aptitudes - basic instruction in media and painting procedure, emphasis on development of the image as a visual statement. Will cover basic color principles, painting techniques and concepts. Assignments cover a wide range of approaches including painting from observation, individual research, and imagination. Images, related books, and articles are discussed. Individual criticism is given; participation in group discussions is required.

Fall VISA0160 S01 18588 Th 1:00-4:50 (Z. Coc-Chang)

VISA 1110. Drawing.

This course focuses on drawing from models, observation, and imagination in a variety of media with an emphasis on creative work and classroom participation. A continuing series of outside assignments is emphasized. Visits to galleries, museums and pertinent exhibitions may be undertaken. The later part of this course will introduce ideas of conceptual and political art into the drawing process.

Fall VISA1110 S01 18583 TTh 9:00-10:50 (P. Myoda)

VISA 1210C. Investigating Collage.

This course will be an artistic and intellectual investigation of 2 dimensional collage, which is the juxtaposition or arrangement of multiple images or parts of images to create fresh meanings and narratives. We will be working mostly with scissors, paper, printing, painting, and glue, supplemented with slides and reading. Use of the computer to complete some assignments will be optional. Prerequisite: VISA 0100 or VISA 0110.

Fall VISA1210C S01 18589 TTh 2:00-4:50 (L. Bostrom)

VISA 1210J. Making Monotypes: The Painterly Print.

The aim of the course is to understand the variability, sequencing potential and the inherent luminosity of the monotype medium and to use these attributes to discover and advance one's own visual ideas. Monotype refers to the making of a single unique print through press and non-press means. Several rapid projects with themes will precede a longer series culminating in a final epic portfolio of independent content. Individual, peer, and small and large group critiques will occur weekly for feedback.

Fall VISA1210J S01 18653 MW 1:00-3:50 (S. Koetter)

VISA 1240. Art of the Book.

Will examine the book, structurally and conceptually, as artist's medium. Students will learn the materials, tools and techniques of making books, as they explore the expressive and narrative possibilities of the book form. Topics and projects may include digital imaging, combining text and image, traditional binding or digital publishing.

Fall VISA1240 S01 18590 TTh 1:00-4:50 (A. Bassuet)

VISA 1310. Painting I.

This painting course explores ideas and concepts in contemporary painting and emphasizes individual projects based on prompts. Students will experiment with materials, color and scale strengthening ideas through

individual investigations into content and context. Critiques, readings, writing assignments and final projects will be supplemented by research into artists and movements that have developed within the last several decades.

Fall VISA1310 S01 18591 MW 9:00-11:50 (L. Tarentino)

VISA 1320. Painting II.

This course is an in-depth investigation of contemporary painting practices and concepts, with a strong emphasis placed on critique. Experimentation and exploration of individual themes is emphasized. Affords an opportunity for in-depth investigations of painting techniques and ideas and the development of a series of works reflecting an individual creative vision.

Fall VISA1320 S01 18592 TTh 10:00-12:50 (L. Bostrom)

VISA 1410. Sculpture: Material Investigations.

This studio course addresses basic sculptural methods, i.e., additive + subtractive modeling, casting, and assemblage, and common sculptural materials, i.e., wood, metal, plaster, and found objects. Demos + workshops on a number of sculptural tools and materials form the foundation for this studio. Students develop sculptural solutions to a given set of problems. Contemporary issues raised in critiques and readings. Extensive outside work is expected.

Fall VISA1410 S01 18638 TTh 12:00-3:50 (P. Myoda)

VISA 1510. Black and White Photography.

This course offers introduction to traditional black and white 35mm darkroom techniques, including processing film, silver gelatin printing and related techniques. While the class is primarily a studio course, it will be supplemented by weekly slide presentations and discussions of assigned readings. Slide presentations will focus on individual photographers in the history of the medium. Topics of discussion will include photographic genres, the photo essay, editing and sequencing a body of work, personal visions, social and political context, documentary versus art photography.

Fall VISA1510 S01 18998 MW 9:00-11:50 'To Be Arranged'

VISA 1520. Digital Photography.

Over 1.8 billion photographs are uploaded to the Internet each day. Since everyone's a "photographer", what type are you? While we constantly produce images for ourselves and others in private and public, this course will ask students to critically rethink this tool. Image-making, from "capture" to "color-correction" and beyond will be consciously addressed, as we approach photography from the perspective of contemporary art practice and produce a final portfolio of prints. Class will be discussion, slideshow, studio and critique. Prior experience in photography preferred not required.

Fall VISA1520 S01 18593 MW 1:00-4:50 (R. Ross)

VISA 1750. Sonic Practice Studio.

This studio course provides an exploration of current practices in sonic arts and facilitates the development of sound-based creative work. Through production and critiques we will examine a number of overlapping areas of sonic practice and audio culture including phonography, sound installation, field recording and environmental audio, sonic narratives in language and other forms, mobile audio and soundwalks, and the materiality of noise. Students will develop sound-based pieces by working individually and in groups. The pieces will be developed for specific sites and situations and will function as creative research into the subjects areas of the course.

Fall VISA1750 S01 18254 W 1:00-3:50 (E. Osborn)

VISA 1800C. Honors Seminar.

Required for students who have been accepted as candidates for honors. The seminar meets weekly to discuss readings and for group critiques. Includes group trips to New York and Boston, to visit galleries, museums, and artists' studios. Instructor permission required. Must be accepted into Honors Program.

Fall VISA1800C S01 18594 TTh 1:00-3:50 (T. Ganz)

VISA 1800G. Junior Seminar in Visual Art.

Contemporary artists are makers, researchers, writers, curators. This is a hybrid seminar/ studio course on the global practice of contemporary art and how we can apply those lessons to our own artmaking. We will focus on questions such as "How do artists run their studios", "What is the place of history and identity?" and "How does art function as a commodity?" Class projects will include short writings and making objects. We will visit

artists studios and have artists come to talk to us. Department trips to New York will be a part of the curriculum.

Fall VISA1800G S01 18595 MW 1:00-2:50 (B. Davis)

VISA 1910. Individual Study Project in the Practice of Art.

Work on an approved project leading to the presentation of a portfolio, under supervision of an individual member of the staff. Project proposals must be filed with the department no later than the first week of the semester. Section numbers vary by instructor.

VISA 1990. Honors.

Section numbers vary by instructor.

VISA 2450. Exchange Scholar Program.

VISA XLIST. Courses of Interest to Visual Arts Concentrators.

Undergraduate Concentrations

Africana Studies

The concentration in Africana Studies critically examines the artistic, historical, literary, and theoretical expressions of the peoples and cultures of Africa and the African Diaspora. Central to the work of students and faculty in the concentration is the close collaboration of artists, scholars, and writers in examining relationships between academic and artistic knowledge about the world and human experience. Concentrators work closely with faculty members in developing new knowledge about the world and human existence through the critical and comprehensive study of the peoples and cultures of Africa and the African Diaspora. Concentrators are encouraged to study abroad in Africa, the Caribbean, and/or Latin America and to acquire language competency in a language other than English spoken in Africa and the diaspora.

Africana Studies presents a different conceptual paradigm that connects the global black experience. Africana Studies engages issues about historical and contemporary responses to local and global crises. It engages with how people of color create their own knowledge culturally and politically. It is oftentimes a critique of how forms of knowledge are produced. Concentrators acquire a host of interdisciplinary skills that allow them to ask questions about the world around them, and forms of knowledge production while developing critical analytical skills. Our concentrators deploy these skills in other classes, enriching their own general intellectual development.

In order to develop requisite competency in the discipline of Africana Studies, concentrators must complete nine (9) semester-long courses offered by or cross-listed with the Department. Seven (7) courses must have an AFRI prefix or be offered by Africana Studies core faculty. Two (2) courses can be cross-listed. In some cases, Concentrators may petition the Department to accept other appropriate courses. Of these 9 courses, the following Africana Studies courses are **required**:

- AFRI 0090 An Introduction to Africana Studies
- AFRI 1330 Africana Studies Junior Seminar
- AFRI 1360 Africana Studies: Knowledge, Texts and Methodology—Senior Capstone Seminar (Spring ONLY)

Students studying abroad during the second semester of their junior year will be required to take the seminar during their senior year. If there is a documented conflict with another concentration's senior seminar, students should consult with the DUS.

The Department strongly encourages foreign study in Africa, the Caribbean, and Latin America.

The Department also encourages the acquisition of language competencies, in addition to English, which are spoken in Africa and the diaspora. Since no continental African language is permanently offered at Brown (to date), concentrators who study abroad and acquire certified competency in any African language are welcome to petition the department for competency credit.

For more information about the concentration, please contact the Director of Undergraduate Studies.

Honors in Africana Studies

Africana Studies' concentrators with outstanding academic records (demonstration of excellent research and writing skills from course selections to grades) may be admitted to the department's Honors Program.

Students interested in pursuing honors should identify a faculty sponsor in Africana Studies (chosen from Core Faculty or affiliated faculty after Chair agreement) in their 6th semester and begin working on their thesis project during the summer before their senior year. By the end of the sixth semester, while working in consultation with a faculty advisor, the student must submit a rough draft of the project proposal. Please visit

the department website for proposal guidelines (<https://www.brown.edu/academics/africana-studies/sites/brown.edu/academics/africana-studies/files/uploads/Final-ProposalGuidelines.pdf>). This preliminary plan should include a timeline for completion of the thesis and is not to exceed one (1) typewritten page. This plan should also include a bibliography that students have developed with their thesis advisor to guide their summer reading.

By the end of the summer, the Honor's candidate should be familiar with the secondary works in the field. (Secondary readings should be extensive and be incorporated into the final proposal, due **Monday, September 26, 2022**.) The student should also identify a second reader at this point.

The final work plan/proposal, not to exceed three (3) typewritten pages, should incorporate the summer research findings and updates to the completion deadline. The final proposal must be approved and signed by a committee, comprised of the faculty advisor who is to direct the Honor's thesis, the second reader, and the concentration advisor. By the end of week three of the first senior semester, the thesis advisor should inform the Director of Undergraduate Studies by email that the proposal has been approved.

The Honor's candidate should complete at least one chapter of distinguished quality while enrolled in an independent study with their faculty advisor during the first semester of the senior year. Students must enroll in at least one, preferably two, semesters of independent study to work on their thesis.

For students completing graduation requirements by the end of **Semester I (Fall)**, a first complete draft of the thesis should be completed by **the last Friday in October**. Final drafts must be submitted by **the last Friday in November**. For students completing graduation requirements by **Semester II (Spring)**, a first complete draft of the thesis should be submitted by **the last Friday in February**. The final draft of the thesis should be submitted by **the last Friday in March**. Students must submit bound copies of the final thesis to the department and to each of their readers, along with an electronic copy of the completed thesis to the Academic Department Manager. All students are expected to formally present their thesis projects in the Department of Africana Studies in **early April** at a time to be determined. After this presentation, a department committee will make recommendations for honors to the Director of Undergraduate Studies and students will receive notification of the recommendation.

American Studies

The concentration in American Studies seeks to understand American society and cultures as emerging from historical and contemporary processes at work in local, national, and global contexts. Concentrators study four broad themes: social structure and the practices of identity, space and place, production and consumption of culture, and science, technology, and everyday life. The concentration is predicated on the ideal of scholarly engagement with the public, so students take junior seminars that engage some aspect of the public humanities such as public policy, memorialization, community studies or civic engagement. Study abroad is supported and encouraged.

Interested students may contact the director of undergraduate studies.

A concentrator in American Studies will be able to:

- Analyze texts, contexts, and data from multiple disciplinary and historical perspectives
- Synthesize research as verbal, visual and/or digital presentations
- Explore the theory and/or practice of the engagement of scholarship with a broader public
- Understand how American society and cultures have been and are being shaped by global flows of people, goods and ideas
- Experiment with new media as critical tools for scholarship

Concentrators have gone on to a vast variety of careers, including law, public humanities, politics, public service, academics, business, creative arts, and medicine.

Requirements for Students Who Declare Spring 2021 and After:

The concentration requires 10 classes.

Each concentrator must take at least 8 upper-level courses including a Junior Seminar (an AMST 1700 level course) and a Senior Seminar (AMST 1900 level course). Students may take as many AMST 1900 level courses as they wish, however, for the course to count as a senior seminar it must be taken during the senior year.

Students may count up to two lower-level classes (below 1000-level).

Each concentrator will create an individual FOCUS consisting of at least three courses in consultation with the Concentration Advisor. The focus is the flexible core of the concentration. Here each student builds a coherent and dynamic interdisciplinary cluster of related courses that develops his or her compelling interest in some aspect of American experience. Up to three courses from outside of AMST and ETHN can be counted for credit within the concentration if they relate to the concentrator's focus area.

Of the 10 required classes, four must be seminars, and two must be classes offered under the AMST or ETHN prefixes that have been tagged with a specific method. Each class must be tagged with a different method. These seminars and tagged classes can count for any other concentration requirement.

All seniors are required to do a capstone electronic portfolio.

Some concentrators may elect to do an Honors Thesis and are encouraged to take AMST 1800, the Honors Seminar, in the Spring of their Junior year. Students pursuing honors are required to take two independent study courses (AMST 1970) in their senior year, in addition to the regular concentration requirements (for a total of 12 credits), in order to write their honors thesis.

Requirements for the American Studies Concentration

Junior Seminar: A course from the AMST 1700 Series, for example: 1

AMST 1700B	Death and Dying in America
AMST 1700C	Slavery in American History, Culture and Memory
AMST 1700D	Race and Remembering
AMST 1700F	American Publics
AMST 1700I	Community Engagement with Health and the Environment

Senior Seminar: A course from the AMST 1900 series taken during the senior year, for example: 1

AMST 1900A	The Problem of Class in America
AMST 1900B	America and the Asian Pacific: A Cultural History
AMST 1900C	Narratives of Slavery
AMST 1900D	America as a Trans-Pacific Culture
AMST 1900F	Transnational Popular Culture
AMST 1900G	Movements, Morals, and Markets
AMST 1900I	Latina/o Cultural Theory
AMST 1900J	Race, Immigration and Citizenship
AMST 1900K	China in the American Imagination
AMST 1900L	Cold War Culture The American Culture in the Cold War
AMST 1900N	Ethnicity, Identity and Culture in 20th Century New York City
AMST 1900O	Filipino American Cultures
AMST 1900P	Essaying Culture
AMST 1900Q	From Perry to Pokemon: Japan in the United States, the United States in Japan
AMST 1900R	Gender, Race, and Class in the United States
AMST 1900S	Green Cities: Parks and Designed Landscapes in Urban America

AMST 1900U	Immigrant Radicals: Asian Political Movements in the Americas 1850-1970	
AMST 1900V	Immigrants, Exiles, Refugees, and Citizens in the Americas	
AMST 1900W	Latina Literature: The Shifting Boundaries of Identity	
AMST 1900X	Latina/o Religions: Encounters of Contestations and Transformations	
AMST 1900Y	Latino New York	
AMST 1900Z	Latinos and Film	
Two additional upper-level seminars taken from the AMST 1700, AMST 1800, or AMST 1900 series		2
Four upper-level lectures or seminars numbered between AMST 1000 and AMST 1900, including those AMST 1900s listed above. Some examples of past seminars include:		4
AMST 1250G	Topics in Material Culture Studies: The Arts and Crafts Movement in America 1880-1920	
AMST 1596	Education Beyond the Classroom Walls: Teaching and Learning in Cultural Institutions	
AMST 1600D	Sports in American Society	
AMST 1601	Health and Healing in American History	
AMST 1611M	Trauma and the Shame of the Unspeakable: The Holocaust, American Slavery, and Childhood Sexual Abuse	
AMST 1901D	Motherhood in Black and White	
AMST 1902Z	Radio: From Hams to Podcasts	
AMST 1904V	Decolonizing Minds: A People's History of the World	
AMST 1905N	War and the Mind in Modern America	
AMST 1905Q	Laboring Women: Work, Reproduction, and Leisure since Reconstruction	
AMST 1906H	Beauty Pageants in American Society	
AMST 1906I	Decolonizing Museums: Collecting Indigenous Culture in Taiwan and North America	
Two additional courses under the AMST or ETHN prefix		2
Ungraded Capstone ePortfolio		

Total Credits **10**

Requirements for Students Who Declare Prior to Spring 2021:

Each concentrator will take 10 upper-level courses, four of which must be seminars, including a Junior Seminar (an AMST 1700 level course) and a Senior Seminar (AMST 1900 level course). Students may take as many AMST 1900 level courses as they wish, however for the course to count as a senior seminar it must be taken during the senior year.

Each concentrator will create an individual FOCUS consisting of at least three courses in consultation with the Concentration Advisor. The focus is the flexible core of the concentration. Here each student builds a coherent and dynamic interdisciplinary structure of related courses that develops his or her compelling interest in some aspect of American experience. Courses from outside of AMST and ETHN can be counted for credit within the concentration if they relate to the concentrator's focus area.

All seniors are required to do a capstone electronic portfolio.

Some concentrators may elect to do an Honors Thesis and are encouraged to take AMST 1800, the Honors Seminar, in the Spring of their Junior year. Students pursuing honors are required to take two independent study courses (AMST 1970) in their senior year, in addition to the regular concentration requirements (for a total of 12 credits), in order to write their honors thesis.

Requirements for the American Studies Concentration

Junior Seminar: A course from the AMST 1700 Series, for example: 1

AMST 1700B	Death and Dying in America
AMST 1700C	Slavery in American History, Culture and Memory
AMST 1700D	Race and Remembering
AMST 1700F	American Publics
AMST 1700I	Community Engagement with Health and the Environment

Senior Seminar: A course from the AMST 1900 series taken during the senior year, for example: 1

AMST 1900A	The Problem of Class in America
AMST 1900B	America and the Asian Pacific: A Cultural History
AMST 1900C	Narratives of Slavery
AMST 1900D	America as a Trans-Pacific Culture
AMST 1900F	Transnational Popular Culture
AMST 1900G	Movements, Morals, and Markets
AMST 1900I	Latina/o Cultural Theory
AMST 1900J	Race, Immigration and Citizenship
AMST 1900K	China in the American Imagination
AMST 1900L	Cold War Culture The American Culture in the Cold War
AMST 1900N	Ethnicity, Identity and Culture in 20th Century New York City
AMST 1900O	Filipino American Cultures
AMST 1900P	Essaying Culture
AMST 1900Q	From Perry to Pokemon: Japan in the United States, the United States in Japan
AMST 1900R	Gender, Race, and Class in the United States
AMST 1900S	Green Cities: Parks and Designed Landscapes in Urban America
AMST 1900U	Immigrant Radicals: Asian Political Movements in the Americas 1850-1970
AMST 1900V	Immigrants, Exiles, Refugees, and Citizens in the Americas
AMST 1900W	Latina Literature: The Shifting Boundaries of Identity
AMST 1900X	Latina/o Religions: Encounters of Contestations and Transformations
AMST 1900Y	Latino New York
AMST 1900Z	Latinos and Film

Two additional upper-level seminars taken from the AMST 1700, AMST 1800, or AMST 1900 series 2

Six upper-level lectures or seminars numbered between AMST 1000 and AMST 1900, including those AMST 1900s listed above. Some examples of past seminars include: 6

AMST 1250G	Topics in Material Culture Studies: The Arts and Crafts Movement in America 1880-1920
AMST 1596	Education Beyond the Classroom Walls: Teaching and Learning in Cultural Institutions
AMST 1600D	Sports in American Society
AMST 1601	Health and Healing in American History
AMST 1611M	Trauma and the Shame of the Unspeakable: The Holocaust, American Slavery, and Childhood Sexual Abuse
AMST 1901D	Motherhood in Black and White
AMST 1902Z	Radio: From Hams to Podcasts

AMST 1904V	Decolonizing Minds: A People's History of the World
AMST 1905N	War and the Mind in Modern America
AMST 1905Q	Laboring Women: Work, Reproduction, and Leisure since Reconstruction
AMST 1906H	Beauty Pageants in American Society
AMST 1906I	Decolonizing Museums: Collecting Indigenous Culture in Taiwan and North America
Ungraded Capstone ePortfolio	

Total Credits 10

Honors

AMST 1970 Independent Reading and Research (Students pursuing honors in the concentration are required to take two semesters of Independent Study to produce the Honors Thesis)

WHAT we study

American Studies at Brown is concerned with four broad themes:

- **Social Structures and the Practices of Identity:** How do communities and individuals come to define themselves, and how do others define them, in terms of, among other categories, nation, region, class, race, ethnicity, gender, sex, religion, age and sexuality? How do organizations and institutions function socially and culturally? What are the roles of social movements, economic structures, politics and government?
- **Space and Place:** How is space organized, and how do people make place? This includes the study of natural and built environments; local, regional, national and transnational communities; and international and inter-regional flows of people, goods, and ideas.
- **Production and Consumption of Culture:** How do people represent their experiences and ideas as culture? How is culture transmitted, appropriated and consumed? What is the role of artists and the expressive arts, including literature, visual arts and performance?
- **Science, Technology, and Everyday Life:** How does work and the deployment of science and technology shape American culture? How do everyday social practices of work, leisure and consumption provide agency for people?

HOW we study

American Studies at Brown emphasizes four intersecting approaches that are critical tools for understanding these themes:

- **Cultural and Social Analysis:** Reading and analyzing different kinds of texts, including literary, visual, aural, oral, material objects and landscapes. Examining ethnic and racial groups, institutions, organizations and social movements.
- **Global/International Contextualization:** Comprehending the United States as a society and culture that has been shaped by the historical and contemporary flows of people, goods and ideas from around the world and in turn, learning about the various ways in which America has shaped the world.
- **New Media Understandings:** Understanding the creation of new forms of discourse, new ways of knowing and new modes of social organization made possible by succeeding media revolutions. Using new media as a critical tool for scholarship.
- **Publicly Engaged Scholarship:** Connecting the theory and the practice of publicly-engaged research, understanding and presentation, from community-based scholarship to ethnography, oral history, and museum exhibits. Civic engagement might include structured and reflective participation in a local community or communities or the application of general theoretical knowledge to understanding social issues.

Anthropology

Anthropology is the study of human beings from all times and all places, offering a holistic, comparative, international, and humanistic perspective. In studying and interpreting the vast range of similarities and differences in human societies and cultures, anthropologists also seek to understand how people themselves make sense of the world in which they live. The Department of Anthropology at Brown is a vibrant, award-winning group of scholars working primarily in the subfields of cultural anthropology, archaeology, and anthropological linguistics. Anthropology is a varied discipline and the Concentration at Brown University reflects that diversity. Students concentrating in Anthropology must declare one of six possible concentration tracks: sociocultural anthropology, archaeology, anthropological linguistics, biological anthropology, medical anthropology, or general anthropology.

The department also supports students involved in Engaged Scholarship through the Swearer Center, through which students may pursue an Engaged Scholarship Certificate. (<https://www.brown.edu/academics/college/swearer/programs/engaged-scholarship-certificate/254/>) Study abroad is also supported and encouraged. Interested students may contact the director of undergraduate studies.

Students who declared a concentration prior to fall 2019 can refer to concentration requirements here: (<https://bulletin.brown.edu/archive/2018-19/https://bulletin.brown.edu/archive/2018-19/the-college/concentrations/anth/>)

General Anthropology Track

Choose one foundational course in sociocultural, linguistic anthropology, or medical anthropology: 1

ANTH 0100	Introduction to Cultural Anthropology
ANTH 0300	Culture and Health
ANTH 0800	Sound and Symbols: Introduction to Linguistic Anthropology

Choose one foundational course in archaeology or biological anthropology: 1

ANTH 0310	Human Evolution
ANTH 0500	Past Forward: Discovering Anthropological Archaeology

Choose one of the following courses in anthropological methodology, to prepare students for further research: 1

ANTH 1201	Introduction to Geographic Information Systems and Spatial Analysis
ANTH 1621	Material Culture Practicum
ANTH 1720	The Human Skeleton
ARCH 1900	The Archaeology of College Hill
ANTH 1940	Ethnographic Research Methods

Five additional courses in anthropology of the student's choosing. At least three of these electives will need to be at the 1000-level to meet the requirements of the concentration. 5

Senior Seminar 1

ANTH 1990	Senior Seminar: (Re)Making Anthropology (Senior Seminar)

Total Credits 9

Medical Anthropology Track

Foundation course 1

ANTH 0300	Culture and Health

Two courses in at least two of the four major subfields of anthropology: 2

Choose one:

ANTH 0310	Human Evolution
ANTH 0500	Past Forward: Discovering Anthropological Archaeology

Choose any one 0000 or 1000-level course in socio-cultural anthropology or linguistic anthropology such as:

ANTH 0100	Introduction to Cultural Anthropology
ANTH 0800	Sound and Symbols: Introduction to Linguistic Anthropology
ANTH 1111	Anthropology of China
ANTH 1150	Middle East in Anthropological Perspective
ANTH 1255	Anthropology of Disasters
ANTH 1320	Anthropology and International Development: Ethnographic Perspectives on Poverty and Progress
ANTH 1848	Ethnography + Social Critique
Methods Course	1
ANTH 1940	Ethnographic Research Methods

At least one 1000-level course in medical anthropology such as: 1

ANTH 1242	Bioethics and Culture
ANTH 1300	Anthropology of Addictions and Recovery
ANTH 1301	Anthropology of Homelessness
ANTH 1310	Global Health: Anthropological Perspectives

An additional three anthropology courses of the student's choosing. At least two of the electives must be at the 1000-level to meet the general requirements of the concentration. 3

At least one non-anthropology course in the natural sciences, public health, or psychology that focuses on human health to give students basic exposure to the science of human physical and/or mental health. This course is in addition to the nine courses required in ANTH. 1

Senior Seminar 1

ANTH 1990	Senior Seminar: (Re)Making Anthropology

Total Credits 10

¹ Other appropriate anthropology courses may be used to fulfill this requirement with DUS approval

² Most qualifying courses will bear a BIOL, PHP, or CLPS designation but students can choose any appropriate course to fulfill this requirement with DUS approval.

Socio-Cultural Anthropology Track

Foundation course 1

ANTH 0100	Introduction to Cultural Anthropology

One course in archaeology or biological anthropology: 1

ANTH 0310	Human Evolution
ANTH 0500	Past Forward: Discovering Anthropological Archaeology

Research methods 1

ANTH 1940	Ethnographic Research Methods

At least two 1000-level courses that focus on specific aspects of sociocultural methods or theories, or in a particular region, such as: 2

ANTH 1111	Anthropology of China
ANTH 1150	Middle East in Anthropological Perspective

ANTH 1240	Religion and Culture
ANTH 1242	Bioethics and Culture
ANTH 1255	Anthropology of Disasters
ANTH 1300	Anthropology of Addictions and Recovery
ANTH 1301	Anthropology of Homelessness
ANTH 1310	Global Health: Anthropological Perspectives

ANTH 1320	Anthropology and International Development: Ethnographic Perspectives on Poverty and Progress	
ANTH 1515	Anthropology of Mental Health	
ANTH 1848	Ethnography + Social Critique	
ANTH 1911	Gender and Sexuality in the Middle East	
An additional three anthropology courses of the student's choosing. At least one of the electives must be at the 1000-level to meet the general requirements of the concentration.		3
Senior Seminar		1
ANTH 1990	Senior Seminar: (Re)Making Anthropology	
Total Credits		9

Linguistic Anthropology Track

Foundation course		1
ANTH 0800	Sound and Symbols: Introduction to Linguistic Anthropology	
One additional course in linguistic anthropology from the following:		1
ANTH 0805	Language and Migration	
ANTH 1311	Language and Medicine in Practice	
ANTH 1810	Language and Power	
Two other foundational courses in anthropology:		2
Choose one:		
ANTH 0100	Introduction to Cultural Anthropology	
ANTH 0300	Culture and Health	
Choose one:		
ANTH 0310	Human Evolution	
ANTH 0500	Past Forward: Discovering Anthropological Archaeology	
Research methods		1
ANTH 1940	Ethnographic Research Methods	
Senior Seminar		1
ANTH 1990	Senior Seminar: (Re)Making Anthropology	
An additional three anthropology courses of the student's choosing. At least two of the electives must be at the 1000-level to meet the requirements of the concentration.		3
At least one general course focusing on aspects of linguistic structure.		1
At least one language course (one semester) in any language other than English		1
Total Credits		11

¹ This course is in addition to the nine courses required in ANTH. Given the teaching commitments of departmental faculty, eligible courses will generally be offered only in departments other than Anthropology. Recommended courses include Introduction to Linguistics (LING 0100) or Sociolinguistics (SLAV 1300). Students may also choose another appropriate course to fulfill this requirement with DUS approval.

² This course is in addition to the nine courses required in ANTH. Students interested in studying a language not offered at Brown should consult with Linguistic Anthropology faculty and the DUS.

Anthropological Archaeology Track

Foundation course in anthropological archaeology		1
ANTH 0500	Past Forward: Discovering Anthropological Archaeology	
Foundation course in socio-cultural anthropology		1
ANTH 0100	Introduction to Cultural Anthropology	
Choose one course in anthropological archaeology methodology:		1
ANTH 1201	Introduction to Geographic Information Systems and Spatial Analysis	

ANTH 1621	Material Culture Practicum	
ARCH 1900	The Archaeology of College Hill	
Choose one course that involves detailed archaeological investigation of a geographic region:		1
ANTH 1031	Classic Mayan Civilization	
ANTH 1126	Ethnographies of Heritage: Community and Landscape of the Mediterranean and Beyond	
ANTH 1505	Vertical Civilization: South American Archaeology from Monte Verde to the Inkas	
ANTH 1624	Indians, Colonists, and Africans in New England	
ANTH 1640	Maize Gods and Feathered Serpents: Mexico and Central America in Antiquity	
ANTH 1650	Ancient Maya Writing	
ANTH 1692	Southwestern Archaeology	
One 1000-level course in anthropology with significant archaeological, material culture, and/or museum studies component. A second geographic area course from the list above may be used to meet this requirement. Other regularly offered courses that meet this requirement include:		1
ANTH 1125	Indigenous Archaeologies	
ANTH 1620	Global Historical Archaeology	
ANTH 1623	Archaeology of Death	
ANTH 1820	Lost Languages: The Decipherment and Study of Ancient Writing Systems	
Three anthropology courses of the student's choosing. At least one of the electives must be at the 1000-level to meet the general requirements of the concentration.		3
Senior Seminar		1
ANTH 1990	Senior Seminar: (Re)Making Anthropology	
Total Credits		9

¹ This requirement will be waived for students who have completed an archaeological field school. The field school must be approved in advance of its completion for the requirement to be waived. Per the broader requirements of the concentration, students must still complete nine anthropology credits at Brown or via transfer credits. Note that many field schools do not carry credit.

² Other anthropological archaeology courses with significant geographic focus may be used to fulfill this requirement with DUS approval.

³ Other anthropology courses with significant archaeological, material culture, or museum studies focus may be used to fulfill this requirement with DUS approval.

Biological Anthropology Track

Foundation course in biological anthropology		1
ANTH 0310	Human Evolution	
Choose one foundational course in cultural anthropology, medical anthropology, or linguistic anthropology:		1
ANTH 0100	Introduction to Cultural Anthropology	
ANTH 0300	Culture and Health	
ANTH 0800	Sound and Symbols: Introduction to Linguistic Anthropology	
Biological anthropology methodology		1
ANTH 1720	The Human Skeleton	
Five anthropology courses of the student's choosing. At least three of the electives must be at the 1000-level to meet the requirements of the concentration.		5

At least one non-anthropology course with a biological focus. Any course with a BIOL subject code can be used to fulfill this requirement. Students are especially encouraged to consider a course with a significant content devoted to genetics and/or evolutionary theory. This course is in addition to the nine courses required in ANTH.

1

Choose at least one course in statistics. This course is in addition to the nine courses required in ANTH. Possible courses include:

1

APMA 0650	Essential Statistics
BIOL 0495	Statistical Analysis of Biological Data
CLPS 0900	Statistical Methods
SOC 1100	Introductory Statistics for Social Research
PHP 1501	Essentials of Data Analysis
Senior Seminar	
ANTH 1990	Senior Seminar: (Re)Making Anthropology

1

Total Credits

11

¹ Other courses may be substituted to meet this requirement with the permission of the DUS.

Research Opportunities and Engaged Scholarship

Training in anthropology is not limited to the classroom. Students are urged to seek out extracurricular opportunities that will round out their anthropological studies. Such experiences might include internships, study abroad, field schools, faculty research apprenticeships, and independent projects. Interested students may contact the director of undergraduate studies.

Anthropology concentrators who are especially interested in making deeper connections between their concentration curriculum and long-term engagement with local communities in Providence and beyond may choose to pursue an Engaged Scholarship designation through the Swearer Center. Engaged scholars combine hands-on experiences such as internships, public service, humanitarian and development work with their academic learning in order to develop a deeper understanding of, and appreciation for, social engagement. While most anthropology courses have some sort of 'engaged' element, being an Engaged Scholar in Anthropology means making a commitment to engaging more actively and intensively with the communities in which a student is living.

All Anthropology tracks are compatible with the Engaged Scholarship Certificate.

Honors

Candidates for honors should apply to the concentration advisor by the end of their 6th semester, but no later than the 4th week of the 7th semester. An application consists of a thesis proposal of 2-3 pages, describing the major research questions and methods to be used. Candidates will prepare their proposals in close consultation with their primary advisor. Candidates for honors are required to:

1. Fulfill the standard concentration requirements.
2. Have completed at least two thirds of the concentration requirements by the end of the sixth semester.
3. Be in good standing
4. Have earned a majority of "A" grades in the concentration. Classes taken S/NC will count as qualifying towards that majority if they are marked "S*" with distinction" indicating that had the student taken the course for a grade, the grade would have been an "A."

Honors candidates will:

1. Take two half-credit Anthropology Thesis Workshop courses (ANTH 1930) and at least one additional independent study course (ANTH 1970) with the thesis advisor, usually in the student's final semester.
2. In consultation with the primary thesis advisor, identify a second reader by the start of the seventh semester.

3. Submit an approved honors thesis by the deadline stipulated each year.
4. Present the thesis in the Honors Theses Symposium in the Anthropology department.

More information on honors is available here: <https://www.brown.edu/academics/anthropology/honors> (<https://www.brown.edu/academics/anthropology/honors/>)

Applied Mathematics

Applied Mathematics has a profound impact on our daily lives. Whether it is search engines, climate modeling, weather forecasts, artificial intelligence, secure online shopping, brain imaging, or movie recommendations, none of these would work the way they do without algorithms and tools from the mathematical sciences. More generally, Applied Mathematics is an inherently interdisciplinary subject, covering problems arising in all areas of science, technology, and engineering. Our courses provide a broad qualitative and quantitative background for use in these fields.

Applied Mathematics appeals to people with a variety of different interests, ranging from those with a desire to obtain a good quantitative background for use in some future career, to those who wish to have a better understanding of the basic mathematical aspects of other fields, or to those who are interested in the fundamental mathematical techniques and approaches in themselves. The program stresses but is not limited to scientific computing, differential equations, probability, and statistics, which are areas of mathematics that are used most often in applications in science, society, and industry. Our curriculum is flexible enough to meet the goals and interests of a very wide range of students.

Students take courses in applied mathematics for many reasons, not necessarily with an applied mathematics concentration in mind. The value of learning about applied mathematics goes beyond a career opportunity. It provides an education in the use of quantitative methods in thinking about and solving problems, knowledge that is valuable in all walks of life.

We offer four concentrations for undergraduates: Applied Mathematics (A.B. & Sc.B.), Applied Mathematics-Biology (Sc.B.), Applied Mathematics-Computer Science (Sc.B.), Applied Mathematics-Economics (A.B. & Sc.B.). This page describes the concentration in Applied Mathematics.

The concentration in Applied Mathematics is the most flexible of all of our concentrations. Students are required to build a foundation in calculus, linear algebra, differential equations, and basic computer programming. Beyond these foundations, there is a great deal of flexibility as to which areas of mathematics and which areas of applications are pursued. Both the A.B. and the Sc.B. allow students to earn concentration credit by taking advanced courses in almost any of the STEM (Science, Technology, Engineering, Mathematics) disciplines. The purpose is to encourage students to develop expertise in both mathematics and an applied area that might be amenable to mathematical investigation.

Standard program for the A.B. degree.

Prerequisites - the equivalent of two semesters of single-variable calculus

Single-variable calculus is not an enforced requirement for our concentration, but it is a required prerequisite for many of our courses. At Brown, single-variable calculus consists of MATH 0090 followed by one of MATH 0100, MATH 0170, or MATH 0190.

Requirements - 10 courses ¹

MATH 0180	Multivariable Calculus	1
or MATH 0200	Multivariable Calculus (Physics/Engineering)	
or MATH 0350	Multivariable Calculus With Theory	
MATH 0520	Linear Algebra	1
or MATH 0540	Linear Algebra With Theory	
APMA 0350	Applied Ordinary Differential Equations ²	1
APMA 0360	Applied Partial Differential Equations I ³	1
One approved course on computer programming. ⁴		1

Three 1000-level or higher APMA courses. ⁵	3
One 1000-level or higher APMA or MATH course. ⁵	1
One 1000-level or higher course in a STEM discipline that demonstrates depth in an area amenable to mathematical investigation and that is approved by the concentration advisor. ⁶	1
Total Credits	10

¹ A required course may be replaced by a more advanced course with concentration advisor approval. No course may be used to satisfy multiple concentration requirements. Transfer credits and courses receiving placement credit notation can satisfy concentration credit as long as they appear on the Brown internal transcript. Pursuing honors will require 12 courses – these 10 plus two additional semesters of independent study courses for the honors research project. For students with multiple concentrations, calculus, linear algebra, and at most two additional courses can be used for concentration credit in the other concentration(s).

² APMA 0330 or MATH 1110 may be used in place of APMA 0350. If MATH 1110 is used, then the concentration must include at least four 1000-level or higher APMA courses (not including APMA 1910, APMA 1920, or research/independent study courses). These can appear anywhere in the declaration.

³ APMA 0340 or MATH 1120 may be used in place of APMA 0360. If MATH 1120 is used, then the concentration must include at least four 1000-level or higher APMA courses (not including APMA 1910, APMA 1920, or research/independent study courses). These can appear anywhere in the declaration.

⁴ Concentrators are encouraged to complete the computing requirement before the end of their sophomore year. The following courses are automatically approved: APMA 0160, APMA 0200, CSCI 0111, CSCI 0150, CSCI 0170, CSCI 0190, CSCI 0200, CLPS 0950, EEPS 0250.

⁵ APMA 1910, APMA 1920, and research/independent study courses cannot be used.

⁶ STEM = Science, Technology, Engineering, Mathematics. Most upper-level courses in APMA, CSCI, ECON, ENGN, MATH, or any of the sciences will be approved, including APMA 1910, APMA 1920. Upper-level courses in other areas may also be approved if the connection to applied mathematics is clear. Concentration advisors may approve a group of lower-level courses as a substitute for a single upper-level course if the group collectively demonstrates depth in a STEM area. Lower-level APMA, CSCI, and MATH courses and independent study/research courses cannot be used.

Standard program for the Sc.B. degree.

Prerequisites - the equivalent of two semesters of single-variable calculus

Single-variable calculus is not an enforced requirement for our concentration, but it is a required prerequisite for many of our courses. At Brown, single-variable calculus consists of MATH 0090 followed by one of MATH 0100, MATH 0170, or MATH 0190.

Requirements - 16 courses¹

MATH 0180	Multivariable Calculus	1
or MATH 0200	Multivariable Calculus (Physics/Engineering)	
or MATH 0350	Multivariable Calculus With Theory	
MATH 0520	Linear Algebra	1
or MATH 0540	Linear Algebra With Theory	
APMA 0350	Applied Ordinary Differential Equations ²	1
APMA 0360	Applied Partial Differential Equations I ³	1
One approved course on computer programming. ⁴		1
Four 1000-level or higher APMA courses. ⁵		4
Two 1000-level or higher APMA or MATH courses. ⁵		2
Four 1000-level or higher courses in one or more STEM disciplines that demonstrate depth in areas amenable to mathematical investigation and that are approved by the concentration advisor. ⁶		4

One approved capstone, senior seminar, or research-related course. ⁷	1
Total Credits	16

¹ A required course may be replaced by a more advanced course with concentration advisor approval. No course may be used to satisfy multiple concentration requirements. Transfer credits and courses receiving placement credit notation can satisfy concentration credit as long as they appear on the Brown internal transcript. Pursuing honors will require 17 courses – these 16 along with two semesters of independent study courses for the honors research project, one of which can be used to satisfy the capstone concentration requirement. For students with multiple concentrations: calculus, linear algebra, one intro CSCI course, and at most two additional courses can be used for concentration credit in the other concentration(s).

² APMA 0330 or MATH 1110 may be used in place of APMA 0350. If MATH 1110 is used, then the concentration must include at least five 1000-level or higher APMA courses (not including APMA 1910, APMA 1920, or research/independent study courses). These can appear anywhere in the declaration.

³ APMA 0340 or MATH 1120 may be used in place of APMA 0360. If MATH 1120 is used, then the concentration must include at least five 1000-level or higher APMA courses (not including APMA 1910, APMA 1920, or research/independent study courses). These can appear anywhere in the declaration.

⁴ Concentrators are encouraged to complete the computing requirement before the end of their sophomore year. The following courses are automatically approved: APMA 0160, APMA 0200, CSCI 0111, CSCI 0150, CSCI 0170, CSCI 0190, CSCI 0200, CLPS 0950, EEPS 0250.

⁵ APMA 1910, APMA 1920, and research/independent study courses cannot be used.

⁶ STEM = Science, Technology, Engineering, Mathematics. Most upper-level courses in APMA, CSCI, ECON, ENGN, MATH, or any of the sciences will be approved, including APMA 1910, APMA 1920. Upper-level courses in other areas may also be approved if the connection to applied mathematics is clear. Concentration advisors may approve a group of lower-level courses as a substitute for a single upper-level course if the group collectively demonstrates depth in a STEM area. Lower-level APMA, CSCI, and MATH courses and independent study/research courses cannot be used.

⁷ The following courses are automatically approved: APMA 1360, APMA 193*/194* (where * is any combination of numbers and letters; these are the APMA senior seminars), an independent study course used to satisfy the APMA honors requirement.

Professional Tracks

The requirements for the professional tracks include all those of each of the standard tracks, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience, to be approved by the student's concentration advisor, addressing these questions:

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?

- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Honors

Concentrators (A.B. or Sc.B.) that demonstrate excellence in grades and in undergraduate research can be awarded departmental honors. Complete guidelines, requirements, and deadlines for honors are published on the department website (<https://appliedmath.brown.edu/academics/undergraduate-program/honors/>). The first deadline is at the beginning of the student's senior year (i.e., the start of the penultimate semester). The main requirements include:

- Earning grades of A or S-with-distinction in at least 70% of the courses used for concentration credit, excluding calculus and linear algebra, by the end of the penultimate semester.
- Completion of an in-depth, original research project in a STEM discipline carried out under the guidance of a Brown-affiliated faculty advisor and documented with the completion of two semesters of independent study courses under the advisor's supervision.
- Completion of an honors thesis describing this research project that also demonstrates the use of mathematical methodology in the project. The honors thesis must be approved by the student's thesis advisor and a second reader, at least one of which must be faculty member in the Division of Applied Mathematics.

Applied Mathematics-Biology

Biology, the science of all life and living matter, is an incredibly diverse discipline offering students the opportunity to learn about topics ranging from the fundamental chemical reactions that fuel all living organisms to the population dynamics of entire ecosystems all the way to the question of how our brains give rise to the complexities of human cognition and experience. Applied mathematics is an increasingly important component of modern biological investigation. Modern technologies have enabled the creation of vast new biological data sets that often require sophisticated mathematical and statistical models for interpretation and analysis. Advances in computing have similarly enabled the simulation of biological phenomena at increasingly fine levels of detail. Entire subfields, such as bioinformatics and computational neuroscience, have developed around these new paradigms of biological investigation. The foundations of these new fields are inherently mathematical, with a focus on probability, statistical inference, and systems dynamics.

The Applied Mathematics – Biology concentration allows students to develop complementary expertise in biology and applied mathematics. Students will focus their advanced biological coursework in an area of particular interest to them. The applied math requirements emphasize those areas of mathematics that have found widespread use throughout all of the biological sciences. The program culminates in a senior capstone experience that enables students to participate in creative research collaborations with faculty.

Standard program for the Sc.B. degree

Prerequisites – the equivalent of two semesters of single-variable calculus

Single-variable calculus is not an enforced requirement for our concentration, but it is a required prerequisite for many of our courses. At Brown, single-variable calculus consists of MATH 0090 followed by one of MATH 0100, MATH 0170, or MATH 0190.

Requirements – 16 courses¹

Mathematical Requirements – 7 courses

MATH 0180	Multivariable Calculus	1
or MATH 0200	Multivariable Calculus (Physics/Engineering)	

or MATH 0350	Multivariable Calculus With Theory	
MATH 0520	Linear Algebra	1
or MATH 0540	Linear Algebra With Theory	
APMA 0350	Applied Ordinary Differential Equations ²	1
APMA 0360	Applied Partial Differential Equations I ³	1
APMA 1655	Honors Statistical Inference I	1
or APMA 1650	Statistical Inference I	
APMA 1070	Quantitative Models of Biological Systems	1
APMA 1080	Inference in Genomics and Molecular Biology	1
or NEUR 2110	Statistical Neuroscience	

Scientific Requirements – 7 courses

One approved course (or course grouping) covering Newtonian mechanics. ⁴		1
CHEM 0330	Equilibrium, Rate, and Structure	1
BIOL 0200	The Foundation of Living Systems ⁵	1
Two approved courses in the biological sciences. All four biological electives (two here and two in the next requirement) should form a cohesive grouping in a specific area of biological interest. ⁶		2
Two approved 1000-level or higher courses in the biological sciences. All four biological electives (two here and two in the previous requirement) should form a cohesive grouping in a specific area of biological interest. ⁶		2

Additional Requirements – 2 courses

One approved course in the mathematical, biological, or computational sciences. ⁷	1
One approved capstone, senior seminar, or research-related course in the mathematical or biological sciences. ⁸	1

Total Credits 16

¹ A required course may be replaced by a more advanced course with concentration advisor approval. No course may be used to satisfy multiple concentration requirements. Transfer credits and courses receiving placement credit notation can satisfy concentration credit as long as they appear on the Brown internal transcript. Pursuing honors will require 17 courses – these 16 along with two semesters of independent study courses for the honors research project, one of which can be used to satisfy the capstone concentration requirement. For students with multiple concentrations: calculus, linear algebra, one intro CSCI course, and at most two additional courses can be used for concentration credit in the other concentration(s).

² APMA 0330 or MATH 1110 may be used in place of APMA 0350. If MATH 1110 is used, then the concentration must include at least three 1000-level APMA courses (not including APMA 1910, APMA 1920 or research/independent study courses).

³ APMA 0340 or MATH 1120 may be used in place of APMA 0360. If MATH 1120 is used, then the concentration must include at least three 1000-level APMA courses (not including APMA 1910, APMA 1920 or research/independent study courses).

⁴ PHYS 0050 or PHYS 0070 are recommended. The following course(s) are automatically approved: PHYS 0030, PHYS 0050, PHYS 0070, ENGN 0031, ENGN 0030 + ENGN 0040, (one of ENGN 0030, ENGN 0040) + (one of PHYS 0040, PHYS 0060, a score of 3 or higher on any AP Physics, a score of 4 or higher on IB-HL Physics). When considering alternative course(s) a key criterion is whether both statics and dynamics are covered.

⁵ A BIOL placement test score of 30 or higher may be used in place of BIOL 0200. The placement test score can be found in ASK, in the advising detail view, under the test scores section. This will reduce by 1 credit the number of credits needed to complete the concentration.

⁶ A wide variety of areas are possible, such as, biochemistry, physiology, biotechnology, ecology, genetics, virology, evolution, neuroscience, immunopathology, molecular biology, etc. Courses in BIOL, NEUR, CHEM are quite common. An important consideration is that foundational biological knowledge is emphasized. If, for instance, most of the courses

were in biostatistics and the emphasis was more statistical than biological, then this would not be an approved collection.

⁷ 1000-level courses in APMA, BIOL, CSCI, MATH, NEUR are automatically approved, including APMA 1910, APMA 1920. Research/independent study courses cannot be used. Concentrators are strongly encouraged to use this requirement to develop their computer programming skills and to do so before the end of sophomore semester. Many upper-level APMA courses, including APMA 1080, require exposure to programming as a prerequisite. The following courses are automatically approved for this purpose: APMA 0160, APMA 0200, CSCI 0111, CSCI 0150, CSCI 0170, CSCI 0190, CSCI 0200, CLPS 0950, EEPS 0250.

⁸ The following options can be used to satisfy this requirement

- A pre-approved course that satisfies the APMA Sc.B. capstone requirement: currently APMA 1360, APMA 193*/194* (where * is any combination of numbers and letters; these are the APMA senior seminars).
- A pre-approved course that satisfies the Biology A.B. capstone requirement: currently BIOL 1100, BIOL 1250, BIOL 1515, BIOL 1555, BIOL 1565, BIOL 1575, BIOL 1600, BIOL 1820, BIOL 1970A.
- A directed research/independent study course from the APMA 1970/ APMA 1971, BIOL 1950/BIOL 1960, or NEUR 1970 series that is used for undergraduate research. For students pursuing honors in APMA-Bio, one of the two required semesters of independent study courses can be used.
- A directed research/independent study course in a related discipline (i.e. STEM disciplines, ENVS, PHP, etc.) if the project is relevant to the student's learning goals in the concentration and with approval from the concentration advisor.
- A non-research course related to the concentration in addition to a research experience equivalent in scope and scale to work the student would pursue in an Applied Math or Biology research-related independent study course. Examples include UTRAs, LINK awards, research programs at other institutions, etc. This requires approval from the concentration advisor and appropriate documentation that should be uploaded to ASK.
- Other equivalent opportunities not listed, with approval from the concentration advisor. Documentation should be uploaded to ASK.

Professional Tracks

The requirements for the professional tracks include all those of each of the standard tracks, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience, to be approved by the student's concentration advisor, addressing these questions:

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?
- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Honors

Concentrators that demonstrate excellence in grades and in undergraduate research can be awarded departmental honors. Honors students with primary advisors in Applied Math should follow the guidelines, requirements, and deadlines for honors as described in the bulletin for Applied Math concentrators (<https://bulletin.brown.edu/the-college/concentrations/apma/>) and as published on the APMA departmental website (<https://appliedmath.brown.edu/academics/undergraduate-program/honors/>). Honors students with primary advisors in Biomed should follow the guidelines, requirements, and deadlines for honors as described in the bulletin for Biology concentrators (<https://bulletin.brown.edu/the-college/concentrations/biol/>) and as published on the Biology departmental website (<https://bue.brown.edu/academics/honors/>). Students wishing to do honors research with a non-APMA or Biomed advisor should contact the Directors of Undergraduate Studies in APMA and Biology to discuss options.

Applied Mathematics-Computer Science

The Sc.B. concentration in Applied Math-Computer Science provides a foundation of basic concepts and methodology of mathematical analysis and computation and prepares students for advanced work in applied mathematics, computer science, and data science. Concentrators must complete courses in mathematics, applied math, computer science, and an approved English writing course. While the concentration in Applied Math-Computer Science allows students to develop the use of quantitative methods in thinking about and solving problems, knowledge that is valuable in all walks of life, students who have completed the concentration have pursued graduate study, computer consulting and information industries, and scientific and statistical analysis careers in industry or government. This degree offers a standard track and a professional track.

Standard Program for the Sc.B. degree.

Prerequisites – the equivalent of two semesters of single-variable calculus

A second semester of single-variable calculus is not an enforced requirement for our concentration, but it is a required prerequisite for many of our courses. At Brown, the second semester of calculus is taught in one of MATH 0100, MATH 0170, or MATH 0190.

Requirements – 17 courses ^{1,2}

Completion of one APMA pairing ³

Mathematical Requirements – 8 courses

MATH 0180	Multivariable Calculus	1
or MATH 0200	Multivariable Calculus (Physics/Engineering)	
or MATH 0350	Multivariable Calculus With Theory	
MATH 0520	Linear Algebra	1
or MATH 0540	Linear Algebra With Theory	
or CSCI 0530	Coding the Matrix: An Introduction to Linear Algebra for Computer Science	
or APMA 1170	Introduction to Computational Linear Algebra	
APMA 0350	Applied Ordinary Differential Equations ⁵	1
APMA 0360	Applied Partial Differential Equations I ⁶	1
APMA 1160	An Introduction to Numerical Optimization	1
or APMA 1170	Introduction to Computational Linear Algebra	
or APMA 1180	Introduction to Numerical Solution of Differential Equations	
or APMA 1690	Computational Probability and Statistics	
or APMA 1740	Recent Applications of Probability and Statistics	

Two approved 1000-level or higher APMA courses. The APMA pairing must be completed. ^{3,4}

One 1000-level or higher APMA or MATH course ⁴ 1

Computer Science Requirements – 8 courses ²

Select one of the following introductory course sequences	2
CSCI 0150 & CSCI 0200	Introduction to Object-Oriented Programming and Computer Science and Program Design with Data Structures and Algorithms
CSCI 0170 & CSCI 0200	Computer Science: An Integrated Introduction and Program Design with Data Structures and Algorithms
CSCI 0111 & CSCI 0200	Computing Foundations: Data and Program Design with Data Structures and Algorithms ²
CSCI 0190 and one CSCI course numbered 0200 or higher	
One course in each of three of the following four clusters:	3
a. Algorithms/Theory Foundations	
CSCI 0500	Data Structures, Algorithms, and Intractability: An Introduction
CSCI 1010	Theory of Computation
CSCI 1550	Probabilistic Methods in Computer Science
CSCI 1570	Design and Analysis of Algorithms
b. AI/Machine Learning/Data Science Foundations	
CSCI 1410	Artificial Intelligence
or CSCI 1420	Machine Learning
or CSCI 1430	Computer Vision
or CSCI 1460	Computational Linguistics
or CSCI 1470	Deep Learning
or CSCI 1850	Deep Learning in Genomics
or CSCI 1951R	Introduction to Robotics
c. Systems Foundations	
CSCI 0300	Fundamentals of Computer Systems
or CSCI 0330	Introduction to Computer Systems
d. Math Foundations	
APMA 1650	Statistical Inference I
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science
or MATH 1210	Probability
or another APMA/MATH course that features probability	
Three approved 1000-level or higher CSCI courses, which cannot include arts/policy/humanities courses ⁵	3
Additional Requirements – 1 course	1
One approved capstone in computer science or applied mathematics taken in the student's senior year. ⁶	
Total Credits	17

¹ A required course may be replaced by a more advanced course with concentration advisor approval. No course may be used to satisfy more than one of the required 17 concentration credits. Transfer credits and courses receiving placement credit notation can satisfy concentration credit as long as they appear on the Brown internal transcript. At most 3 post-matriculation transfer credits (such as study abroad courses or summer courses at another institution) can be used for concentration credit. Pursuing honors will require 18 courses – these 17 along with two semesters of independent study courses for the honors research project, one of which can be used to satisfy the capstone concentration requirement. For students with multiple concentrations: calculus, linear algebra, one intro CSCI course, and at most two additional courses can be used for concentration credit in the other concentration(s).

² Students who take the CSCI 0111, CSCI 0112, CSCI 0200 sequence will effectively need an additional course (CSCI 0112) to complete the concentration. Students wishing to go directly from CSCI 0111 to CSCI 0200 (without CSCI 0112) will need to successfully complete additional exercises to receive an instructor override code for CSCI 0200.

³ To complete an APMA pairing, students must complete two 1000-level or higher APMA courses that adhere to a common theme. These courses can appear anywhere in the declaration. APMA 1910, APMA 1920 and research/independent study courses are not allowed. Themes can be broadly defined and are subject to concentration advisor approval. Examples include:

- Probability and statistics: APMA 1080, APMA 1200, APMA 1650/APMA 1655, APMA 1660, APMA 1690, APMA 1710, APMA 1720, APMA 1740/APMA 2610, APMA 1860, APMA 1930V, APMA 1930W, , APMA 1941D, , APMA 2630, APMA 2640, APMA 2670, APMA 2680
- Differential equations and dynamical systems: APMA 1070, APMA 1180, APMA 1330, APMA 1360, APMA 1930P, , APMA 2070, APMA 2190, APMA 2200, APMA 2550, APMA 2560, APMA 2570, APMA 2580B
- Scientific computing and optimization: APMA 1210, APMA 1160, APMA 1170, APMA 1180, APMA 1940Y, APMA 2070, APMA 2560, APMA 2580B, APMA 2580C
- Operations research: APMA 1200, APMA 1210
- Applications in biology: APMA 1070, APMA 1080, APMA 1930P

⁴ APMA 1910, APMA 1920 and research/independent study courses are not allowed.

⁵ At most one arts, humanities, or social science CS course can be used for concentration credit (currently CSCI 1250, CSCI 1280, CSCI 1360, CSCI 1370, CSCI 1800, CSCI 1805, CSCI 1870, CSCI 1952B, CSCI 1952X, CSCI 2002, CSCI 2952S). Non-CSCI courses are not allowed, even if they are approved as part of a CS pathway or allowed as part of a pure CS concentration. CSCI 0500 cannot be used.

⁶ The capstone does not have to be part of the chosen CS pathway (unlike the pure CS concentration), but it can be used as one of the courses that completes a pathway or one of the courses that completes the APMA pairing. Completing a capstone prior to the senior year requires prior approval from the concentration advisor and the Director of Undergraduate Studies in CS. The following options can be used to satisfy this requirement:

- A pre-approved course that satisfies the APMA Sc.B. capstone requirement: currently APMA 1360, APMA 193*/194* (where * is any combination of numbers and letters; these are the APMA senior seminars).
- A directed research/independent study course from the APMA 1970/APMA 1971 series that is used for undergraduate research and is approved by the concentration advisor.
- Completion of a CS Sc.B. capstone as described in the CS Concentration Handbook at this link (<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-handbook/>). Usually, this involves taking one of the approved CS capstone courses at this link (<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-requirements-2020/capstone/>) and registering the capstone with the instructor of the course and with the CS department using the capstone registration form at this link (<https://drive.google.com/file/d/1YYK7u4ccB0II52yxXiEl6sMwA7LZMrGy/view/>). Depending on the course it may require the completion of an additional project.
- For students pursuing honors in APMA-CS, one of the two required semesters of independent study courses can be used to fulfill the capstone requirement.

Professional Tracks

The requirements for the professional tracks include all those of each of the standard tracks, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience, to be approved by the student's concentration advisor, addressing these questions:

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?
- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Honors

Concentrators that demonstrate excellence in grades and in undergraduate research can be awarded departmental honors. Honors students with primary advisors in Applied Math should follow the guidelines, requirements, and deadlines for honors as described in the bulletin for Applied Math concentrators (<https://bulletin.brown.edu/the-college/concentrations/apma/>) and as published on the APMA departmental website (<https://appliedmath.brown.edu/academics/undergraduate-program/honors/>). Honors students with primary advisors in Computer Science should follow the guidelines, requirements, and deadlines for honors as described in the bulletin for Computer Science concentrators (<https://bulletin.brown.edu/the-college/concentrations/comp/>) and as published on the CS departmental website (<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/honors/>). Students wishing to do honors research with a non-APMA or CS advisor should contact the Directors of Undergraduate Studies in APMA and CS to discuss options.

Applied Mathematics-Economics

The Applied Mathematics-Economics concentration is designed to reflect the mathematical and statistical nature of modern economic theory and empirical research. This concentration has two tracks. The first is the advanced economics track, which is intended to prepare students for graduate study in economics. The second is the mathematical finance track, which is intended to prepare students for graduate study in finance, or for careers in finance or financial engineering. Both tracks have A.B. degree versions and Sc.B. degree versions, as well as a Professional track option. If you are interested in declaring a concentration in Applied Mathematics-Economics, please refer to this page (<https://economics.brown.edu/academics/undergraduate/concentrations/declaring/>) for more information regarding the process.

Standard Program for the A.B. degree (Advanced Economics track):

Prerequisites:

MATH 0100	Single Variable Calculus, Part II
MATH 0520	Linear Algebra

Course Requirements:

Applied Mathematics Requirements

(a) ¹

APMA 0350 & APMA 0360	Applied Ordinary Differential Equations and Applied Partial Differential Equations	2

Select one of the following:

APMA 0160	Introduction to Scientific Computing (preferred)	1

APMA 0200	Introduction to Modeling	
CSCI 0111	Computing Foundations: Data	
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
CSCI 0170	Computer Science: An Integrated Introduction	
CSCI 0190	Accelerated Introduction to Computer Science	
Select one of the following:		1
APMA 1200 or APMA 1210	Operations Research: Probabilistic Models or Operations Research: Deterministic Models	
Select one of the following:		1
APMA 1650 or APMA 1655	Statistical Inference I or Honors Statistical Inference I	
(b) ¹		
Select one of the following:		1
APMA 1160	An Introduction to Numerical Optimization	
APMA 1180	Introduction to Numerical Solution of Differential Equations	
APMA 1200	Operations Research: Probabilistic Models	
APMA 1210	Operations Research: Deterministic Models	
APMA 1330	Applied Partial Differential Equations II	
APMA 1360	Applied Dynamical Systems	
APMA 1660	Statistical Inference II	
APMA 1690	Computational Probability and Statistics	
APMA 1670	Statistical Analysis of Time Series	
APMA 1680	Nonparametric Statistics	
APMA 1690	Computational Probability and Statistics	
APMA 1710	Information Theory	
APMA 1720	Monte Carlo Simulation with Applications to Finance	
APMA 1740	Recent Applications of Probability and Statistics	
APMA 1860	Graphs and Networks	
MATH 1010	Analysis: Functions of One Variable	
APMA 193X, 194X	Senior Seminar series, depending on topic	

Economics Requirements: 3

ECON 1130	Intermediate Microeconomics (Mathematical) ³	
ECON 1210	Intermediate Macroeconomics	
ECON 1630	Mathematical Econometrics I	

Two 1000-level courses from the "mathematical-economics" group: ⁴ 2

ECON 1170	Welfare Economics and Social Choice Theory	
ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies	
ECON 1255	Unemployment: Models and Policies	
ECON 1470	Bargaining Theory and Applications	
ECON 1490	Theory of Market Design	
ECON 1545	Topics in Macroeconomics, Development and International Economics	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1750	Investments II	
ECON 1770	Crisis Economics	

ECON 1805	Economics in the Laboratory	
ECON 1820	Theory of Behavioral Economics	
ECON 1860	The Theory of General Equilibrium	
ECON 1870	Game Theory and Applications to Economics	
One 1000-level course from the "data methods" group: ⁴		1
ECON 1301	Economics of Education I	
ECON 1310	Labor Economics	
ECON 1315	Health, Education, and Social Policy	
ECON 1340	Economics of Global Warming	
ECON 1355	Environmental Issues in Development Economics	
ECON 1360	Health Economics	
ECON 1375	Inequality of Opportunity in the US	
ECON 1385	Intergenerational Poverty in America	
ECON 1400	The Economics of Mass Media	
ECON 1430	The Economics of Social Policy	
ECON 1510	Economic Development	
ECON 1520	Culture, History and Comparative Development	
ECON 1530	Health, Hunger and the Household in Developing Countries	
ECON 1629	Applied Research Methods for Economists	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1825	Behavioral Economics and Public Policy	
ECON 1830	Behavioral Finance	
One additional 1000-level economics course: ⁵		1
Total Credits		13

¹ No course may be used to simultaneously satisfy (a) and (b).

² APMA 0330 and APMA 0340 may be substituted with advisor approval, but these are no longer being offered.

³ Or ECON 1110 with permission. For students matriculating at Brown in Fall 2021 or later, note that if ECON 1110 is used, then one additional course from the mathematical-economics group will be required

⁴ No course may be used to simultaneously satisfy the "mathematical economics," and "data methods" requirements.

⁵ Note that ECON 1620, ECON 1960, and ECON 1970 (independent study) cannot be used for concentration credit. However, 1620 and 1960 can be used for university credit and up to two 1970s may be used for university credit.

⁶ Requires written approval of the Director of Undergraduate Studies in Economics. APMA 1910 is not permitted.

Standard program for the Sc.B. degree (Advanced Economics track):

Prerequisites:

MATH 0100	Single Variable Calculus, Part II
MATH 0520	Linear Algebra

Course Requirements:

Applied Mathematics Requirements

(a) ¹		
APMA 0350 & APMA 0360	Applied Ordinary Differential Equations and Applied Partial Differential Equations I ²	2
Select one of the following:		1
APMA 0160	Introduction to Scientific Computing (preferred)	

APMA 0200	Introduction to Modeling	
CSCI 0111	Computing Foundations: Data	
CSCI 0190	Accelerated Introduction to Computer Science	
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
CSCI 0170	Computer Science: An Integrated Introduction	
Select one of the following:		1
APMA 1200 or APMA 1210	Operations Research: Probabilistic Models or Operations Research: Deterministic Models	
APMA 1650 or APMA 1655	Statistical Inference I or Honors Statistical Inference I	1
(b) ¹		
Select two of the following:		2
APMA 1160	An Introduction to Numerical Optimization	
APMA 1180	Introduction to Numerical Solution of Differential Equations	
APMA 1200	Operations Research: Probabilistic Models	
APMA 1210	Operations Research: Deterministic Models	
APMA 1330	Applied Partial Differential Equations II	
APMA 1360	Applied Dynamical Systems	
APMA 1660	Statistical Inference II	
APMA 1670	Statistical Analysis of Time Series	
APMA 1680	Nonparametric Statistics	
APMA 1690	Computational Probability and Statistics	
APMA 1710	Information Theory	
APMA 1720	Monte Carlo Simulation with Applications to Finance	
APMA 1740	Recent Applications of Probability and Statistics	
APMA 1860	Graphs and Networks	
MATH 1010	Analysis: Functions of One Variable	
APMA 193X, 194X	Senior Seminar series, depending on topic	

Economics Requirements:

ECON 1130	Intermediate Microeconomics (Mathematical) ³	1
ECON 1210	Intermediate Macroeconomics	1
ECON 1630	Mathematical Econometrics I	1
Three 1000-level courses from the "mathematical-economics" group: ⁴		3
ECON 1170	Welfare Economics and Social Choice Theory	
ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies	
ECON 1255	Unemployment: Models and Policies	
ECON 1470	Bargaining Theory and Applications	
ECON 1490	Theory of Market Design	
ECON 1545	Topics in Macroeconomics, Development and International Economics	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1750	Investments II	
ECON 1770	Crisis Economics	
ECON 1805	Economics in the Laboratory	
ECON 1820	Theory of Behavioral Economics	

ECON 1860	The Theory of General Equilibrium	
ECON 1870	Game Theory and Applications to Economics	
One 1000-level course from the "data methods" group: ⁴		1
ECON 1301	Economics of Education I	
ECON 1310	Labor Economics	
ECON 1315	Health, Education, and Social Policy	
ECON 1340	Economics of Global Warming	
ECON 1355	Environmental Issues in Development Economics	
ECON 1360	Health Economics	
ECON 1375	Inequality of Opportunity in the US	
ECON 1385	Intergenerational Poverty in America	
ECON 1400	The Economics of Mass Media	
ECON 1430	The Economics of Social Policy	
ECON 1510	Economic Development	
ECON 1520	Culture, History and Comparative Development	
ECON 1530	Health, Hunger and the Household in Developing Countries	
ECON 1629	Applied Research Methods for Economists	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1825	Behavioral Economics and Public Policy	
ECON 1830	Behavioral Finance	
Two additional 1000-level economics courses ⁵		2
Total Credits		16

¹ No course may be used to simultaneously satisfy (a) and (b).

² APMA 0330 and APMA 0340 may be substituted with advisor approval, but these are no longer being offered.

³ Or ECON 1110 with permission. For students matriculating at Brown in Fall 2021 or later, note that if ECON 1110 is used, then one additional course from the mathematical-economics group will be required.

⁴ No course may be used to simultaneously satisfy the "mathematical economics" and "data methods" requirements.

⁵ Students may apply, at most, one Economics course whose number is in the range of 1000 to 1099 toward the concentration. Note that ECON 1620, ECON 1960, and ECON 1970 (independent study) cannot be used for concentration credit. However, 1620 and 1960 can be used for university credit and up to two 1970s may be used for university credit.

⁶ Requires written approval of the Director of Undergraduate Studies in Economics. APMA 1910 is not permitted.

Standard program for the A.B. degree (Mathematical Finance track):

Prerequisites:

MATH 0100	Single Variable Calculus, Part II
MATH 0520	Linear Algebra

Course Requirements: 13 Courses: 6 Applied Math and 7 Economics

Applied Mathematics Requirements

(a)		
APMA 0350 & APMA 0360	Applied Ordinary Differential Equations and Applied Partial Differential Equations ¹	2
Select one of the following:		1
APMA 0160	Introduction to Scientific Computing (preferred)	

APMA 0200	Introduction to Modeling	
CSCI 0111	Computing Foundations: Data	
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
CSCI 0170	Computer Science: An Integrated Introduction	
CSCI 0190	Accelerated Introduction to Computer Science	
APMA 1200	Operations Research: Probabilistic Models	1
APMA 1650 or APMA 1655	Statistical Inference I or Honors Statistical Inference I	1
(b)		
Select one of the following:		1
APMA 1160	An Introduction to Numerical Optimization	
APMA 1180	Introduction to Numerical Solution of Differential Equations	
APMA 1210	Operations Research: Deterministic Models	
APMA 1330	Applied Partial Differential Equations II	
APMA 1360	Applied Dynamical Systems	
APMA 1660	Statistical Inference II	
APMA 1670	Statistical Analysis of Time Series	
APMA 1680	Nonparametric Statistics	
APMA 1690	Computational Probability and Statistics	
APMA 1710	Information Theory	
APMA 1720	Monte Carlo Simulation with Applications to Finance (preferred)	
APMA 1740	Recent Applications of Probability and Statistics	
APMA 1860	Graphs and Networks	
MATH 1010	Analysis: Functions of One Variable	
APMA 193X, 194X	Senior Seminar series, depending on topic ⁵	

Economics Requirements:

ECON 1130	Intermediate Microeconomics (Mathematical) ³	1
ECON 1210	Intermediate Macroeconomics	1
ECON 1630	Mathematical Econometrics I	1
Select two 1000-level courses from the "financial economics" group: ²		2
ECON 1710	Investments I	
ECON 1720	Corporate Finance	
ECON 1730	Venture Capital, Private Equity, and Entrepreneurship	
ECON 1750	Investments II	
ECON 1760	Financial Institutions	
ECON 1770	Crisis Economics	
ECON 1780	Advanced Topics in Corporate Finance	
ECON 1830	Behavioral Finance	
Select one 1000-level course from the "mathematical economics" group: ²		1
ECON 1170	Welfare Economics and Social Choice Theory	
ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies	
ECON 1255	Unemployment: Models and Policies	
ECON 1470	Bargaining Theory and Applications	
ECON 1490	Theory of Market Design	
ECON 1545	Topics in Macroeconomics, Development and International Economics	
ECON 1640	Mathematical Econometrics II	

ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1750	Investments II	
ECON 1770	Crisis Economics	
ECON 1805	Economics in the Laboratory	
ECON 1820	Theory of Behavioral Economics	
ECON 1860	The Theory of General Equilibrium	
ECON 1870	Game Theory and Applications to Economics	
Select one 1000-level course from the "data methods" group: ²		1
ECON 1301	Economics of Education I	
ECON 1310	Labor Economics	
ECON 1315	Health, Education, and Social Policy	
ECON 1340	Economics of Global Warming	
ECON 1355	Environmental Issues in Development Economics	
ECON 1360	Health Economics	
ECON 1375	Inequality of Opportunity in the US	
ECON 1385	Intergenerational Poverty in America	
ECON 1400	The Economics of Mass Media	
ECON 1430	The Economics of Social Policy	
ECON 1510	Economic Development	
ECON 1520	Culture, History and Comparative Development	
ECON 1530	Health, Hunger and the Household in Developing Countries	
ECON 1629	Applied Research Methods for Economists	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1825	Behavioral Economics and Public Policy	
ECON 1830	Behavioral Finance	

Total Credits **13**

¹ APMA 0330 and APMA 0340 may be substituted with advisor approval, but these are no longer being offered.

² No course may be used to simultaneously satisfy any two or more of the "financial economics," "mathematical economics," and "data methods" requirements.

³ Or ECON 1110 with permission. For students matriculating at Brown in Fall 2021 or later, note that if ECON 1110 is used, then one additional course from the mathematical-economics group will be required

⁴ Note that ECON 1620, ECON 1960, and ECON 1970 (independent study) cannot be used for concentration credit. However, 1620 and 1960 can be used for university credit and up to two 1970s may be used for university credit.

⁵ Requires written approval of the Director of Undergraduate Studies in Economics. APMA 1910 is not permitted.

Standard program for the Sc.B. degree (Mathematical Finance track):

Prerequisites:

MATH 0100	Single Variable Calculus, Part II
MATH 0520	Linear Algebra

Course Requirements: 16 courses: 7 Applied Math and 9 Economics

Applied Mathematics requirements:

(a)

APMA 0350 & APMA 0360	Applied Ordinary Differential Equations and Applied Partial Differential Equations I	2
Select one of the following:		1
APMA 0160	Introduction to Scientific Computing (preferred)	
APMA 0200	Introduction to Modeling	
CSCI 0111	Computing Foundations: Data	
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
CSCI 0170	Computer Science: An Integrated Introduction	
CSCI 0190	Accelerated Introduction to Computer Science	
APMA 1200	Operations Research: Probabilistic Models	1
APMA 1650 or APMA 1655	Statistical Inference I or Honors Statistical Inference I	1
(b) Select two of the following:		2
APMA 1160	An Introduction to Numerical Optimization	
APMA 1180	Introduction to Numerical Solution of Differential Equations	
APMA 1210	Operations Research: Deterministic Models	
APMA 1330	Applied Partial Differential Equations II	
APMA 1360	Applied Dynamical Systems	
APMA 1660	Statistical Inference II	
APMA 1670	Statistical Analysis of Time Series	
APMA 1680	Nonparametric Statistics	
APMA 1690	Computational Probability and Statistics	
APMA 1710	Information Theory	
APMA 1720	Monte Carlo Simulation with Applications to Finance (preferred)	
APMA 1740	Recent Applications of Probability and Statistics	
APMA 1860	Graphs and Networks	
MATH 1010	Analysis: Functions of One Variable	
APMA 193X, 194X	Senior Seminar series, depending on topic	5

Economics Requirements:

ECON 1130	Intermediate Microeconomics (Mathematical) ³	1
ECON 1210	Intermediate Macroeconomics	1
ECON 1630	Mathematical Econometrics I	1
Select three 1000-level courses from the "financial economics" group: ²		3
ECON 1710	Investments I	
ECON 1720	Corporate Finance	
ECON 1730	Venture Capital, Private Equity, and Entrepreneurship	
ECON 1750	Investments II	
ECON 1760	Financial Institutions	
ECON 1770	Crisis Economics	
ECON 1780	Advanced Topics in Corporate Finance	
ECON 1830	Behavioral Finance	
Select two 1000-level courses from the "mathematical economics" group: ²		2
ECON 1170	Welfare Economics and Social Choice Theory	
ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies	
ECON 1255	Unemployment: Models and Policies	

ECON 1470	Bargaining Theory and Applications
ECON 1490	Theory of Market Design
ECON 1545	Topics in Macroeconomics, Development and International Economics
ECON 1640	Mathematical Econometrics II
ECON 1660	Big Data
ECON 1670	Advanced Topics in Econometrics
ECON 1680	Machine Learning, Text Analysis, and Economics
ECON 1750	Investments II
ECON 1770	Crisis Economics
ECON 1805	Economics in the Laboratory
ECON 1820	Theory of Behavioral Economics
ECON 1860	The Theory of General Equilibrium
ECON 1870	Game Theory and Applications to Economics
Select one 1000-level course from the "data methods" group: ²	
ECON 1301	Economics of Education I
ECON 1310	Labor Economics
ECON 1315	Health, Education, and Social Policy
ECON 1340	Economics of Global Warming
ECON 1355	Environmental Issues in Development Economics
ECON 1360	Health Economics
ECON 1375	Inequality of Opportunity in the US
ECON 1385	Intergenerational Poverty in America
ECON 1400	The Economics of Mass Media
ECON 1430	The Economics of Social Policy
ECON 1510	Economic Development
ECON 1520	Culture, History and Comparative Development
ECON 1530	Health, Hunger and the Household in Developing Countries
ECON 1629	Applied Research Methods for Economists
ECON 1640	Mathematical Econometrics II
ECON 1660	Big Data
ECON 1670	Advanced Topics in Econometrics
ECON 1680	Machine Learning, Text Analysis, and Economics
ECON 1825	Behavioral Economics and Public Policy
ECON 1830	Behavioral Finance

Total Credits **16**

¹ APMA 0330 and APMA 0340 may be substituted with advisor approval, but these are no longer being offered.

² No course may be used to simultaneously satisfy any two or more of the "financial economics," "mathematical economics," and "data methods" requirements.

³ Or ECON 1110 with permission. For students matriculating at Brown in Fall 2021 or later, note that if ECON 1110 is used, then one additional course from the mathematical-economics group will be required

⁴ Note that ECON 1620, ECON 1960, and ECON 1970 (independent study) cannot be used for concentration credit. However, 1620 and 1960 can be used for university credit and up to two 1970s may be used for university credit.

⁵ Requires written approval of the Director of Undergraduate Studies in Economics. APMA 1910 is not permitted.

Honors

Applied Math-Economics concentrators who wish to pursue honors must find a primary faculty thesis advisor in either Economics or Applied Math. They will be held to the Honors requirements of their advisor's department. Joint concentrators in Applied Mathematics-Economics with an Economics

thesis advisor should follow the requirements published here (<https://economics.brown.edu/academics/undergraduate/honors-and-capstones/thesis/>), while concentrators with an Applied Math thesis advisor should follow the requirements published here (<https://www.brown.edu/academics/applied-mathematics/undergraduate-program/honors/>).

Professional Track

The requirements for the professional track include all those of the standard track, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience, to be approved by the student's concentration advisor.

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?
- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Archaeology and the Ancient World

The concentration in Archaeology and the Ancient World provides an opportunity to explore the multi-faceted discipline of archaeology while examining the critical early civilizations of the so-called 'Old World'— that is, the complex societies of the Mediterranean, Egypt, and the Near East. Students will learn about the art, architecture, and material culture of the ancient world, exploring things of beauty and power, as well as the world of the everyday. Concentrators will also learn "how to do" archaeology – the techniques of locating, retrieving, and analyzing ancient remains – and consider how material culture shapes our understanding of the past. Concentrators are encouraged to pursue research opportunities through summer fieldwork, museum experience, or independent study projects.

The undergraduate concentration in Archaeology and the Ancient World provides students with an opportunity to explore the multi-faceted discipline of archaeology, and encourages an interdisciplinary approach to engaging with the ancient world. While the core focus of Archaeology and the Ancient World at Brown University is archaeology and art of the ancient Mediterranean, Egypt, and the Near East, this concentration encourages students to reach beyond this geographic area, to engage with Brown's many strengths in history, epigraphy, art, ethics, engineering, religious studies, and the sciences – to name just a few. The concentration, with its three distinct but overlapping tracks, is intended to allow students flexibility in structuring their own path through this diverse field of study. All three tracks begin with the same foundation. Students are then expected to experiment with and define their own areas of specialty, establishing expertise in topics such as cultural heritage, archaeological theory, or materials analysis, or in particular regions or time periods. The concentration is also designed to allow students to build progressively upon what they have learned, moving from introductory courses to upper-level seminars.

It is expected that, in completing the requirements for this concentration, students will incorporate courses that offer new perspectives on the complex dynamics of social inequity, exclusion, and difference, and which encourage engagement with the community – both by enrolling in classes designated as Diverse Perspectives in Liberal Learning (DPLL) and through non-DPLL classes that explore similar themes. Research opportunities, through summer fieldwork, internships, museum experience, or independent study projects, are strongly encouraged.

Within this concentration, the three tracks are:

- **Archaeology and the Ancient World:** the most flexible of the concentration tracks, allowing students to explore any region or time period, and to develop their own areas of focus, such as museum studies, ethics and politics of the past, engineering and materials analysis, cultural heritage, or environmental studies.
- **Classical Archaeology:** for those interested chiefly in the 'classic' civilizations of the Mediterranean (especially Greece and Rome), as well as for those interested in both earlier (prehistoric) and later (medieval) periods in that geographic region.
- **Egyptian and Near Eastern Archaeology:** for those interested chiefly in the cultures of Egypt and the ancient 'Near East' – Anatolia, the Levant, Mesopotamia – from prehistoric through Islamic times.

Required Courses:

The student must take a total of 10 courses, including:

CORE REQUIREMENTS:

4

All three tracks share four Core Requirements: two introductory courses providing an overview of archaeology's two central aspects (field methodologies, and art history); and two introductory courses in the core geographical focus of the Joukowsky Institute (Classical/Mediterranean archaeology and Egyptian/Near Eastern archaeology).

One introductory course in archaeological methodology and/or scientific approaches, preferably:

ARCH 0100 Field Archaeology in the Ancient World
or a course that addresses similar methodological/scientific topics, which must be approved by the concentration advisor. Appropriate courses could include, for example:

ARCH 1900 The Archaeology of College Hill
ANTH 0500 Past Forward: Discovering Anthropological Archaeology

One introductory course in ancient art history, preferably:

ARCH 0030 Art in Antiquity: An Introduction
or an ancient art history course approved by the concentration advisor. Appropriate courses could include, for example:

ARCH 0150 Introduction to Egyptian Archaeology and Art
ARCH 0520 Roman Archaeology and Art

One introductory ARCH course in Egyptian or Near Eastern archaeology, art, and/or architecture, for example:

ARCH 0152 Egyptomania: Mystery of the Sphinx and Other Secrets of Ancient Egypt
ARCH 0360 East Meets West: Archaeology of Anatolia

One introductory ARCH course in Classical or Mediterranean archaeology, art, and/or architecture, for example:

ARCH 0270 Troy Rocks! Archaeology of an Epic
ARCH 0420 Archaeologies of the Greek Past

TRACK REQUIREMENTS:

In addition to the Core Requirements above, each of the three tracks requires six additional courses, which allow students to define their own areas of geographic and/or topical specialty.

Archaeology and the Ancient World: 6

One ARCH course, of any level, that focuses on a particular thematic or theoretical topic pertaining to archaeology, for example: 1

ARCH 0315 Heritage In and Out of Context: Museum and Archaeological Heritage

ARCH 1800 Contemporary Issues in Archaeological Theory

One ARCH course, of any level, that focuses on a part of the world OTHER than Mediterranean, Egyptian, or Near Eastern, for example: 1

ANTH 0066U An Archaeology of Native American Art

ARCH 0160 Buried History, Hidden Wonders: Discovering East Asian Archaeology

Two additional ARCH courses, on any aspect of archaeology and art, at the 1000 level (or above). Students are encouraged to use these upper-level courses to define a particular core specialty or track, such as a focus on archaeological theory, museum studies, archaeological ethics, materials analysis, cultural heritage, or climate change, for example: 2

ARCH 1550 Who Owns the Classical Past?

ANTH 1720 The Human Skeleton

Two non-ARCH courses which EITHER relate to the study of the ancient world OR to the discipline of archaeology. Outside courses are chosen with the approval of the Concentration Advisor from appropriate 1000 level (or above) offerings in other departments such as, but not limited to: Anthropology, Classics, Egyptology and Assyriology, Environmental Studies, Geological Sciences, History, History of Art and Architecture, Religious Studies. One term of language study, in any relevant (usually ancient) language, may also be counted toward this requirement. 2

Classical Archaeology: 6

One course in ancient Greek or Roman history, for example: 1

CLAS 1210 Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC

CLAS 1220 The Fall of Empires and Rise of Kings: Greek History 478 to 323 BC

CLAS 1310 Roman History I: The Rise and Fall of an Imperial Republic

CLAS 1320 Roman History II: The Roman Empire and Its Impact

One course in either Ancient Greek or Latin, at a level beyond the first year of study, for example: 1

GREK 0300/0400 Introduction to Greek Literature

LATN 0300/0400 Introduction to Latin Literature

Two courses in Mediterranean (prehistoric, Greek, Roman, medieval) archaeology and art, at the 1000 level (or above). 2

One ARCH course, of any level, that focuses on a part of the world OTHER than Mediterranean, Egyptian, or Near Eastern OR focuses on a particular thematic topic pertaining to archaeology, for example: 1

ARCH 1490 Ancient Central Asia in the Shadow of Alexander

ARCH 1540 Cultural Heritage: The Players and Politics of Protecting the Past

One non-ARCH course which EITHER relates to the study of the ancient world OR to the discipline of archaeology. Outside courses are chosen with the approval of the Concentration Advisor from appropriate 1000 level (or above) offerings in other departments such as, but not limited to: Anthropology, Classics, Egyptology and Assyriology, Environmental Studies, Geological Sciences, History, History of Art and Architecture, Religious Studies. 1

Egyptian and Near Eastern Archaeology: 6

Two courses in Egyptian and Near Eastern archaeology and art at the 1000 level (or above). 2

Two terms of course work in a pertinent ancient language (such as Akkadian, Coptic, Classical Hebrew, Middle Egyptian). 2

One ARCH course, of any level, that focuses on a part of the world OTHER than Mediterranean, Egyptian, or Near Eastern OR focuses on a particular thematic topic pertaining to archaeology, for example:

ARCH 0335	Archaeology of the Andes	1
ARCH 1170	Community Archaeology in Providence and Beyond	

One non-ARCH course which EITHER relates to the study of the ancient world OR to the discipline of archaeology. Outside courses are chosen with the approval of the Concentration Advisor from appropriate 1000 level (or above) offerings in other departments such as, but not limited to: Anthropology, Classics, Egyptology and Assyriology, Environmental Studies, Geological Sciences, History, History of Art and Architecture, Religious Studies.

TOTAL (including Core and Track Requirements): 10

¹ All formally cross-listed courses, regardless of home department, can be considered ARCH courses and can fulfill the relevant concentration requirement(s). There is no limit on the number of cross-listed courses that can count toward the completion of a concentration.

² Students who are doing a double concentration are allowed up to two courses that are also counted toward (i.e., overlap with) their second concentration to fulfill Archaeology concentration requirements.

Fieldwork, Study Abroad, and Capstone Experiences

Students are strongly encouraged to consider participating in a field project, most typically after sophomore or junior year. The Joukowsky Institute's Assistant Director and other faculty members can provide suggestions about how to explore and fund possible field projects. For each of the tracks, a capstone experience may be substituted for one of these required courses. With the permission of the Assistant Director or the Director of Undergraduate Studies, up to three successfully completed courses, from relevant and accredited study abroad programs, may be counted towards the concentration requirements. Field school courses that provide formal university transfer credit, and official transcripts, may also be used to fulfill concentration requirements.

Honors Concentrations

An Honors concentration in any of these tracks requires the successful completion of all the standard requirements with the addition of an Honors thesis. For the preparation of this thesis, students will ordinarily enroll in ARCH 1970 during the first semester of the senior year and ARCH 1990 during the second semester of the senior year (these courses may not be taken S/NC, nor may they be used to satisfy the standard requirements of the concentration). In order to qualify for honors, students must have received more A's than B's in concentration courses completed.

Honors concentrations are recommended for students considering graduate work in the discipline of archaeology. Any student interested in a course of graduate study should speak to the Joukowsky Institute's Assistant Director and faculty members as soon as possible, not least for advice about additional forms of preparation. Graduate work in the archaeology of the ancient world, for example, requires knowledge of appropriate ancient, as well as modern, languages. Students should start work on acquiring these skills as early as possible.

The Honors Thesis

The Honors thesis is an extended essay, usually of between 40 and 60 pages in length, researched and written under the supervision of a faculty advisor and second reader during the senior year (during which the student must be enrolled in ARCH 1970 in the Fall and ARCH 1990 in the Spring semester).

Where appropriate, the advisor or the reader, but not both of them, may be in a unit other than the Joukowsky Institute for Archaeology and the Ancient World. The specific topic and approach of the thesis are worked out between the student and the thesis advisor, with assistance from the

student's second reader. This process should begin in the latter part of the student's junior year.

A preliminary title and one page outline of the proposed Honors thesis is due to the Joukowsky Institute's Assistant Director and the thesis advisor by May 15th of the junior year.

The deadlines for thesis drafts, and for final thesis submission, will be agreed between the student and the faculty advisors. It is expected that students will have submitted at least one full chapter to their primary advisor by the end of the student's penultimate semester. The deadline for final thesis submission typically should be on or before April 15th, and must be no later than the first day of Reading Period in the final semester of senior year. Both a bound and an electronic version of the final thesis must be submitted to the Joukowsky Institute by May 1, via email to joukowsky_institute@brown.edu.

The completed thesis will be evaluated by the advisor and second reader, who will discuss its strengths and weaknesses in a joint meeting with the student; they will then make a recommendation concerning Honors, and also agree a grade for ARCH 1990.

The Honors concentrators will be asked to make a short public presentation about their work; this event will be organized by the Joukowsky Institute's Assistant Director, and usually occurs during or shortly after Reading Period.

Evaluation

The Director of Undergraduate Studies will review the student's overall record, in addition to the thesis evaluations. If all requirements have been successfully met, the recommendation will be made that the student graduates with Honors.

Architecture

The Architecture concentration introduces students to a broad understanding of concepts and methods for the planning and design of buildings and urban environments. It connects architectural education firmly to the humanities and provides a greater awareness of historical, global, environmental, social and economic issues in the built environment. This approach to the education of architects and urban planners aims to provide them with the tools needed in today's fractured urban society. Apart from training careful observation, critical analysis and problem solving, students will acquire skills in sketching, drafting, model-making, and digital rendering. By combining a carefully selected range of classes in architectural design, the humanities, engineering and technology, and urban life and theory, students will acquire necessary proficiency for pursuing a graduate degree in architecture after Brown.

Summary of Concentration Requirements ¹

1 Introduction to Design Studio	1
2 Practice Courses	2
1 Double-Credit Design Studio	2
4 History of Art and Architecture lecture or seminar courses bearing the A designation	4
1 Pathway Elective in Sciences	1
1 Pathway Elective on Social Sciences / Humanities	1
1 Capstone Course	1
Total Credits	12

HIAA 0100	Introduction to Architectural Design Studio	1
HIAA 0130	Architectural Projection	1
HIAA 0140	Structural and Architectural Analysis	1
HIAA 0150	Intermediate Architectural Design Studio	2
or HIAA 0190	Advanced Design Studio	

4 History of Art and Architecture lecture courses bearing the A designation. The courses should engage at least two different geographic regions (Africa, Americas, Asia, Europe) and two different periods (Ancient-Medieval, Early Modern, Modern-Contemporary). Individual courses can be used to fulfill either the geographic or temporal breadth requirement, but not both. Courses tagged as “Multiple Regions” and “Multiple Periods” can be used to fulfill one geographic and one temporal breadth requirement, respectively. A select number of A designated seminars may be used to fulfill this requirement.

Temporal Periods:

Ancient/Medieval:

HIAA 0022	The Art of Enlightenment
HIAA 0024	Arts of Asia: Beginnings to 1300
HIAA 0032	Art and Architecture of the Roman Empire
HIAA 0322	The Arts of Religion and Ritual in the Ancient World

Early Modern:

HIAA 0660	Giotto to Watteau: Introduction to the Art of Europe from Renaissance to French Revolution
HIAA 0063	Food and Art in the Early Modern World

Modern/Contemporary:

HIAA 0070	Introduction to American Art: The 19th Century
HIAA 0072	Introduction to American Art: The Twentieth Century
HIAA 0075	Introduction to the History of Art: Modern Photography
HIAA 0077	Revolutions, Illusions, Impressions: A History of Nineteenth-Century Art
HIAA 0084	Postwar to Postmodernism: Art Since 1945
HIAA 0087	Contemporary Art
HIAA 0089	Contemporary Photography
HIAA 0090	The Other History of Modern Architecture
HIAA 0820	Art and Technology from Futurism to Hacktivism
HIAA 0850	Modern Architecture
HIAA 0860	Contemporary Architecture
HIAA 0861	City and Cinema

Multiple Periods:

HIAA 0023	South Asian Art and Architecture
HIAA 0041	The Architectures of Islam
HIAA 0081	Architecture of the House Through Space and Time
HIAA 0770	Architecture and Urbanism of Africa

Geographic Regions:

Africa:

HIAA 0770	Architecture and Urbanism of Africa

Americas:

HIAA 0070	Introduction to American Art: The 19th Century
HIAA 0072	Introduction to American Art: The Twentieth Century
HIAA 0089	Contemporary Photography

Asia:

HIAA 0022	The Art of Enlightenment
HIAA 0023	South Asian Art and Architecture
HIAA 0024	Arts of Asia: Beginnings to 1300

Europe:

4	HIAA 0032	Art and Architecture of the Roman Empire
	HIAA 0075	Introduction to the History of Art: Modern Photography
	HIAA 0077	Revolutions, Illusions, Impressions: A History of Nineteenth-Century Art
	HIAA 0660	Giotto to Watteau: Introduction to the Art of Europe from Renaissance to French Revolution
	Multiple Regions:	
	HIAA 0041	The Architectures of Islam
	HIAA 0081	Architecture of the House Through Space and Time
	HIAA 0084	Postwar to Postmodernism: Art Since 1945
	HIAA 0087	Contemporary Art
	HIAA 0090	The Other History of Modern Architecture
	HIAA 0322	The Arts of Religion and Ritual in the Ancient World
	HIAA 0820	Art and Technology from Futurism to Hacktivism
	HIAA 0850	Modern Architecture
	HIAA 0860	Contemporary Architecture
	HIAA 0861	City and Cinema

Seminar Courses:

HIAA 1181	Prefabrication and Architecture
HIAA 1190	Spaces and Institutions of Modernity
HIAA 1202	Mountains and Waters: Art and Ecology in East Asia
HIAA 1212	The Pictured Text
HIAA 1213	The Bureaucracy of Hell: Envisioning Death in East Asian Art
HIAA 1307	Politics and Spectacle in the Arts of Ancient Rome
HIAA 1308	Arts of Memory in Ancient Rome
HIAA 1771	Eclectic Arts in the Global 19th Century
HIAA 1820	Abstraction in Theory and Practice

1 Pathway Elective in Sciences ² **1**

1 Pathway Elective in Social Sciences / Humanities ² **1**

1 Capstone course. Capstone projects are required for all concentrators. The Capstone is intended to challenge you with an opportunity to synthesize at a high level of achievement the knowledge and understanding you have gained by concentrating in Architecture. Capstone projects embrace many possibilities. You can perfect a studio project or seminar paper in which you have developed a strong interest. You can participate in a graduate seminar to which the instructor has admitted you. You can develop work that you do as a museum or gallery intern. You might work on an archaeological excavation. You can participate in the Honors Program. Beyond these opportunities, the Department is open to other approaches. Capstones are often completed under the auspices of an independent study course. But a capstone may be completed under the umbrella of an existing course. All capstone's must be discussed with and approved by a faculty sponsor and your concentration advisor. **1**

Total Credits

12

¹ A maximum of four credits may be allowed for courses taken at other universities (transfer credits or from study abroad) or courses on architectural subjects taken in other departments. No concentration credit will be granted for AP/A-level scores.

² Electives should be chosen in consultation with your concentration advisor.

Self-Assessment

All concentrators are required to write an essay when they file for the concentration that lays out what they expect to gain from the course of study they propose. All second-semester seniors will be required to write a final essay that takes measure of what they have learned from the concentration, including their capstone and other experiences relating to their study of architecture. The self-assessment should be submitted through ASK with a revised list of courses actually taken at least one month prior to graduation.

Honors

During the second semester of the junior year all concentrators will be invited to apply for admission to the Honors Program in Architecture. The honors program is an opportunity for you to mobilize what you have learned to make an original research contribution to the field.

There are two pathways to honors in the Architecture concentration: thesis and project-based.

Those pursuing the thesis option research and write a historical or theoretical essay on a topic of their choice over the course of their senior year. The thesis should be no more than 35 pages in length, plus bibliography and illustrations.

Those pursuing the project option further develop a design project that they initiated in an Intermediate or Advanced Studio in their junior year or in the first semester of their senior year. They devote a minimum of one additional semester further developing their project in regular consultation with a faculty advisor. (This can mean building an additional, more elaborate model, creating more renderings, or refining the concept.)

Students wishing to pursue Honors should have produced consistently excellent work and maintained a high level of achievement (i.e. a majority of "A" or "S with distinction" grades) in all concentration courses. Acceptance into the Honors program depends on the persuasiveness of the thesis topic and the availability of relevant faculty to advise the thesis. Students may refine their proposals by speaking in advance with potential advisors. No honors student may take more than four courses either semester of their senior year—with the honors seminar being considered one of the four courses. Students interested in honors who are expecting to graduate in the middle of the year should contact the concentration advisor no later than the beginning of their junior year.

During both fall and spring semesters you will participate in the monthly meetings of the Honors cohort, in which honors students in both HIAA concentrations share their work-in-progress with each other and with the faculty member who supervises the seminar. These monthly meetings, usually three per semester, are mandatory. Students must enroll in HIAA 1990 (Honors Thesis) in both semesters. Students are also expected to meet separately and regularly with their own thesis advisor.

Theses and projects will be due to the advisor and second reader by March 1 of the Spring semester or by November 1 of the Fall semester if you plan on graduating in December. Comments will be returned to the students for final corrections at that point. There will be a public presentation of Honors work at the end of the Spring semester.

Astronomy

Along with Greek, Latin, and Mathematics, Astronomy counts as one of the oldest continuously taught subjects in the Brown curriculum. It is the study of the properties of stars, galaxies, and the Universe, and as such combines elements from the disciplines of both Physics and Planetary Geology. Students pursuing this concentration complete introductory coursework in classical mechanics, relativity, and astrophysics, along with mathematics and electromagnetism. They go on to complete courses in stellar and extragalactic astrophysics as well as cosmology. Facilities available to concentrators include the historic Ladd Observatory.

Standard concentration for the A.B. degree

Eleven or twelve courses are required (depending on the satisfaction of prerequisites).

Prerequisites

PHYS 0070	Analytical Mechanics	1

PHYS 0160	Introduction to Relativity, Waves and Quantum Physics ¹	1
PHYS 0270	Astronomy and Astrophysics	1
Select one of the following Series:		1-2
MATH 0170 & MATH 0180	Single Variable Calculus, Part II (Accelerated) and Multivariable Calculus	
MATH 0190 & MATH 0200	Single Variable Calculus, Part II (Physics/Engineering) and Multivariable Calculus (Physics/Engineering)	
MATH 0350	Multivariable Calculus With Theory (or equivalent)	
PHYS 0470	Electricity and Magnetism	1
Program		
Select one of the following mathematics courses:		1
MATH 0520	Linear Algebra	
MATH 0540	Linear Algebra With Theory	
PHYS 0720	Methods of Mathematical Physics	
APMA 0330	Methods of Applied Mathematics I	
APMA 0340	Methods of Applied Mathematics II	
Select two of the following astrophysics courses:		2
PHYS 1100	General Relativity	
PHYS 1250	Stellar Structure and the Interstellar Medium	
PHYS 1270	Extragalactic Astronomy and High-Energy Astrophysics	
PHYS 1280	Introduction to Cosmology	
Three additional 1000- or 2000-level courses in physics or a related field, suggestions:		3
APMA 1670	Statistical Analysis of Time Series	
EEPS 0810	Planetary Geology	
EEPS 1710	Remote Sensing of Earth and Planetary Surfaces	
EEPS 1810	Physics of Planetary Evolution	
ENGN 1860	Advanced Fluid Mechanics	
MATH 1060	Differential Geometry	
PHYS 0500	Advanced Classical Mechanics	
PHYS 0560	Experiments in Modern Physics	
PHYS 1410	Quantum Mechanics A	
PHYS 1510	Advanced Electromagnetic Theory	
PHYS 1530	Thermodynamics and Statistical Mechanics	
PHYS 1560	Modern Physics Laboratory	
Total Credits		11-12

¹ PHYS 0050 and PHYS 0060 can be taken in lieu of PHYS 0160

Behavioral Decision Sciences

Leading to a Bachelor of Arts, the study of decision making at Brown covers descriptive questions like how people, institutions, and nations make judgments and decisions; normative questions about rationality, such as what constitutes the best judgments and decisions; and prescriptive questions, such as how the process of decision making can be improved to make actual decisions closer to optimal ones. By virtue of its broad interdisciplinary nature, the study of decision making covers work found in a variety of more traditional disciplines including psychology, cognitive science, economics, philosophy, computer science, and neuroscience. Professor Steven Sloman (steven_sloman@brown.edu?subject=Behavioral%20Decision%20Sciences) is the concentration advisor. Upon declaring, concentrators are also encouraged to speak with the appropriate area specialist from among those listed here (<https://cab.brown.edu>).

www.brown.edu/academics/cognitive-linguistic-psychological-sciences/behavioral-decision-sciences/).

Standard Program for the AB Degree

CLPS Classes:

CLPS 0220 Making Decisions 1

Choose one of the following: 1

CLPS 0400 Cognitive Neuroscience

CLPS 0200 Human Cognition

CLPS 0700 Social Psychology

Choose one of the following: 1

CLPS 1280B Special Topics in Cognition: Collective Cognition

CLPS 1280C Topics in Cognition: Information and Decision Making

CLPS 1470 Mechanisms of Motivated Decision Making

CLPS 1495 Affective Neuroscience

CLPS 1560 Visually-Guided Action and Cognitive Processes

CLPS 1730 Psychology in Business and Economics

CLPS 1750 Blame and Punishment

CLPS 1760 The Moral Brain

CLPS 0710 The Psychology and Philosophy of Happiness

Distribution Requirements:

Select one Introductory Course from the following: 1

ECON 0110 Principles of Economics

CSCI 0111 Computing Foundations: Data

CSCI 0150 Introduction to Object-Oriented Programming and Computer Science

CSCI 0170 Computer Science: An Integrated Introduction

CSCI 0180 Computer Science: An Integrated Introduction

CSCI 0190 Accelerated Introduction to Computer Science

Select Two Advanced Courses From: 2

CSCI 1410 Artificial Intelligence

CSCI 1420 Machine Learning

ECON 1090 Introduction to Game Theory

ECON 1110 Intermediate Microeconomics

ECON 1130 Intermediate Microeconomics (Mathematical)

ECON 1170 Welfare Economics and Social Choice Theory

ECON 1200 History of Economic Thought

ECON 1805 Economics in the Laboratory

ECON 1820 Theory of Behavioral Economics

ECON 1870 Game Theory and Applications to Economics

PHIL 1610 Decision Theory: Foundations and Applications

PHIL 1430 Moral Theories

SOC 1311 Micro-Organizational Theory: Social Behavior in Organizations

SOC 1315 Macro-Organizational Theory: Organizations in Social Context

Methods Classes:

Basic Probability and Statistics. Choose One From the Following: 1

APMA 0650 Essential Statistics

APMA 1650 Statistical Inference I

CLPS 0900 Statistical Methods

CSCI 1450 Advanced Introduction to Probability for Computing and Data Science

DATA 0200 Data Science Fluency

ECON 1620 Introduction to Econometrics

Plus One of the Following (Advanced Methods): 1

CLPS 0950 Introduction to programming

CSCI 0111 Computing Foundations: Data

CSCI 0150 Introduction to Object-Oriented Programming and Computer Science

CSCI 0170 Computer Science: An Integrated Introduction

CSCI 0190 Accelerated Introduction to Computer Science

CSCI 0200 Program Design with Data Structures and Algorithms

ECON 1630 Mathematical Econometrics I

ECON 1660 Big Data

SOC 1120 Market and Social Surveys

SOC 1260 Market Research in Public and Private Sectors

Plus Choose One From the Following (Research Design and Methods): 1

CLPS 1791 Laboratory in Social Cognition

CLPS 1890 Laboratory in Psycholinguistics

CLPS 1900 Research Methods And Design

CLPS 1901 Research Methods

ECON 1629 Applied Research Methods for Economists

ENVS 1920 Methods for Interdisciplinary Environmental Research

IAPA 1500A Ethnographic Research Methods

POLS 1600 Political Research Methods

SOC 1020 Methods of Social Research

Electives: 3

Students will choose three additional courses in consultation with a concentration advisor that will constitute an integrated specialization in some area of decision science. Any advanced course taught at Brown is eligible.

Capstone: 1

Fall seminar in which students write an integrative paper or do a project covering their areas of study in their senior year. The project will offer a novel discovery, either by collecting new data, offering a novel conceptual analysis, or developing a new computational or mathematical model. Reviews confined to existing literature, analyses or existing industries, and business plans are not appropriate.

Total Credits 13

¹ Students may not use the same course to satisfy both the Introductory and Methods course requirements.

Students will be expected to take no more than 6 courses below the 1000-level within the concentration. Students with multiple concentrations may not apply more than 2 courses from a second concentration to the AB in Behavioral Decision Sciences. Students are responsible for satisfying all prerequisites for courses they plan to take.

Honors

The Honors Program in BDS gives undergraduates a special opportunity to carry out a research project under the direction of a faculty member that they have developed a relationship with. The program also provides the opportunity for senior concentrators to receive their undergraduate degree with Honors. Participation in the program allows students to develop an understanding of research and acquire research skills and background.

Candidates for Honors in BDS must meet all of the requirements of the BDS concentration as described above. Candidates submit their application for the program at the beginning of semester 7. We encourage students to seek out a faculty mentor prior to semester 7 and to complete their methods courses and two of their three electives before semester 7. Please refer to the CLPS Honors Program page for detailed information about the specific requirements for the Honors Program in BDS.

Biochemistry & Molecular Biology

How does life work at the molecular level? This question is at the core of the concentration program Biochemistry and Molecular Biology. In earlier years of this discipline, the focus was on structure and function of proteins, nucleic acids, lipids, carbohydrates and small molecules such as vitamins. Today the logical approach and tools of biochemical science are being expanded to new areas in neuroscience, developmental biology, immunology, pharmacology and synthetic biology (the design of analogs of biological systems). Training in biochemistry begins with a foundation in mathematics, physics, chemistry and biology. Some courses offered in other departments, including engineering, geology and computer science, are also useful. A key component of this program is the year of hands-on research carried out in collaboration with a faculty member here at Brown. Faculty sponsors are drawn from both the Chemistry Department and the Division of Biology and Medicine, and include basic science and clinical faculty.

Standard program for the Sc.B. degree

Students must take twenty courses in biology, chemistry, mathematics, and physics, including the following core requirements, some of these may be fulfilled with AP credits.

Three courses in mathematics including two courses in MATH 0090/0100 or MATH 0170/0180 with a third class in statistics, math, or computer science ¹ 3

Options for statistics courses include: ¹

APMA 0650	Essential Statistics
APMA 1650	Statistical Inference I
APMA 1655	Honors Statistical Inference I ³
BIOL 0495	Statistical Analysis of Biological Data
CLPS 0900	Statistical Methods
PHP 1501	Essentials of Data Analysis
PHP 1510	Principles of Biostatistics and Data Analysis

Two courses in physics, typically: ¹ 2

PHYS 0030	Basic Physics A
or PHYS 0050	Foundations of Mechanics
or ENGN 0030	Introduction to Engineering
PHYS 0040	Basic Physics B
or PHYS 0060	Foundations of Electromagnetism and Modern Physics
or ENGN 0040	Engineering Statics and Dynamics

Three courses in physical and organic chemistry: 3

CHEM 0330	Equilibrium, Rate, and Structure
CHEM 0350/0360	Organic Chemistry I

One course in biophysical chemistry: 1

CHEM 0400	Biophysical and Bioinorganic Chemistry

Four courses in biochemistry: 4

BIOL 0280	Biochemistry
BIOL 0285	Inquiry in Biochemistry: From Gene to Protein Function

Plus two of three upper level biochemistry courses:

BIOL 1270	Advanced Biochemistry
or CHEM 1230	Chemical Biology
or CHEM 1240	Biochemistry

The two semester research requirement may be satisfied by any two of the following. Students should discuss alternative arrangements or special situations directly with their concentration advisor to obtain prior approval. 2

BIOL 1950	Directed Research/Independent Study
BIOL 1960	Directed Research/Independent Study
CHEM 0980	Undergraduate Research
CHEM 0980S	Undergraduate Research - Writing Designated and Mandatory S/NC
CHEM 0981	Undergraduate Research - Writing Designated

Select biology or chemistry COEX courses (BIOL 0190R, BIOL 0190S, BIOL 0440, BIOL 0600, BIOL 0940G, CHEM 0500)

A summer research experience with faculty in Biology or Chemistry at Brown equivalent or greater in scope and scale to work the student would pursue in a Biology or Chemistry independent study course to satisfy one semester of the research requirement.

Suggested Elective Courses:

Students are required to take five courses from the chart below or, with approval from a concentration advisor, from any science or mathematics course relevant to biochemistry, cell and molecular biology. 5

Applied Mathematics Electives:

APMA 0330	Methods of Applied Mathematics I
APMA 0410	Mathematical Methods in the Brain Sciences
APMA 0650	Essential Statistics

Biology Electives:

BIOL 0030	Principles of Nutrition
BIOL 0150D	Techniques in Regenerative Medicine: Cells, Scaffolds and Staining
BIOL 0170	Biotechnology in Medicine
BIOL 0190R	Phage Hunters, Part I
BIOL 0190S	Phage Hunters, Part II
BIOL 0200	The Foundation of Living Systems
BIOL 0380	The Ecology and Evolution of Infectious Disease
BIOL 0415	Microbes in the Environment
BIOL 0440	Inquiry in Plant Biology: Analysis of Plant Growth, Reproduction and Adaptive Responses
BIOL 0470	Genetics
BIOL 0500	Cell and Molecular Biology
BIOL 0510	Introductory Microbiology
BIOL 0530	Principles of Immunology
BIOL 0800	Principles of Physiology
BIOL 1050	Biology of the Eukaryotic Cell
BIOL 1090	Polymer Science for Biomaterials
BIOL 1100	Cell Physiology and Biophysics
BIOL 1110	Topics in Signal Transduction
BIOL 1120	Biomaterials
BIOL 1150	Stem Cell Engineering
BIOL 1200	Protein Biophysics and Structure
BIOL 1210	Synthetic Biological Systems
BIOL 1260	Physiological Pharmacology
BIOL 1290	Cancer Biology
BIOL 1300	Biomolecular Interactions: Health, Disease and Drug Design
BIOL 1310	Developmental Biology
BIOL 1330	Biology of Reproduction

BIOL 1520	Innate Immunity
BIOL 1540	Molecular Genetics
BIOL 1560	Virology
BIOL 1600	Development of Vaccines to Infectious Diseases
BIOL 2110	Drug and Gene Delivery
BIOL 2350	The Biology of Aging

Chemistry Electives:

CHEM 0500	Inorganic Chemistry
CHEM 1140	Physical Chemistry: Quantum Chemistry
CHEM 1150	Physical Chemistry: Thermodynamics and Statistical Mechanics
CHEM 1220	Computational Tools in Biochemistry and Chemical Biology
CHEM 1230	Chemical Biology
CHEM 1240	Biochemistry
CHEM 1450	Advanced Organic Chemistry
CHEM 2420	Organic Reactions

Computer Science Electives:

CSCI 0080	A First Byte of Computer Science
CSCI 0111	Computing Foundations: Data
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science
CSCI 0160	Introduction to Algorithms and Data Structures
CSCI 0170	Computer Science: An Integrated Introduction
CSCI 0180	Computer Science: An Integrated Introduction
CSCI 0190	Accelerated Introduction to Computer Science
CSCI 1810	Computational Molecular Biology

Engineering Electives:

ENGN 0410	Materials Science

Neuroscience Electives:²

NEUR 0010	The Brain: An Introduction to Neuroscience
NEUR 1020	Principles of Neurobiology
NEUR 1030	Neural Systems
NEUR 1040	Introduction to Neurogenetics
NEUR 1670	Neuropharmacology and Synaptic Transmission
NEUR 1740	The Diseased Brain: Mechanisms of Neurological and Psychiatric Disorders

Physics Electives:

PHYS 0160	Introduction to Relativity, Waves and Quantum Physics

Public Health Electives:

PHP 1501	Essentials of Data Analysis

Total Credits 20¹ Note that the mathematics and physics requirements may be satisfied by Advanced Placement credit.² or any NEUR course in Cell, Genetics, Molecular Biology, or Development.³ Students may opt to enroll in APMA 1655 for more in depth coverage of APMA 1650.**Honors Requirements for Biochemistry**

All ScB Biochemistry concentrators are candidates for Honors; no separate application is necessary.

The requirements for Honors in Biochemistry are:

* Students must have a majority of either As or S with distinction grades in concentration courses.

* Two semesters of Independent Study (CHEM 0980, CHEM 0980S, CHEM 0981, BIOL 1950, or BIOL 1960). Guidelines and requirements associated with Independent Study are in the Undergraduate Concentration Handbook which can be found at the department website (<http://www.brown.edu/academics/chemistry/undergraduate/>).

* A Thesis in a form approved by the research advisor, and recommended by the research advisor. Additional information about thesis guidelines will be provided by the Concentration Advisor in the first half of the fall semester.

* An oral presentation of the thesis in a fifteen-minute senior talk followed by a five-minute question and answer period.

Biology

The Biology concentration invites students to study, in depth and in breadth, the science of life and living matter. Whether pursuing the Bachelor of Arts (A.B.) or Science (Sc.B.) in biology, students can expect to learn broadly in the discipline through a selection of courses in three areas: cell and molecular biology, structure and function, and organismal biology. In addition, students pursuing the Sc.B. complete a thematic track through which they gain an in-depth understanding of a particular subfield such as, Immunopathology, Ecology and Evolutionary Biology, Physiology/Biotechnology, Cell and Molecular Biology, Physical Sciences. The concentration also emphasizes practical skills and experimental design. Concentrators are required to take at least 3 courses with a laboratory or fieldwork component. Within all of these requirements, students have a high degree of flexibility and choice. Broad research opportunities are also available across several departments within the basic sciences as well.

Standard program for the A.B. Biology

The concentration program for the A.B. in Biology consists of four prerequisite courses in math, chemistry, and a statistics course as well as ten courses in biological sciences, including at least one course in each of the following three areas: Area 1: Cell/Molecular Biology, Area 2: Structure/Function, and Area 3: Organismal Biology.

The Biology A.B. Concentration Worksheet (<https://bue.brown.edu/concentrations/biology-ab/>) may be a useful tool for course planning.

Prerequisites:¹

CHEM 0330	Equilibrium, Rate, and Structure
CHEM 0350	Organic Chemistry I
MATH 0090	Single Variable Calculus, Part I (or placement. MATH 0050/MATH 0060 may be substituted for MATH 0090.)

One of the following:

MATH 0100	Single Variable Calculus, Part II (or placement)
MATH 0170	Single Variable Calculus, Part II (Accelerated) (or equivalent placement)

Or a statistics course, to be approved by the concentration advisor.

Ten Core Courses:^{2,3,4}

BIOL 0200	The Foundation of Living Systems (Required course; AP credit or similar IB or A-levels accepted, placement test available.)	1

Area 1 (Cell/Molecular Biology) 1

BIOL 0280	Biochemistry
BIOL 0470	Genetics
BIOL 0500	Cell and Molecular Biology
BIOL 0510	Introductory Microbiology
BIOL 0530	Principles of Immunology
BIOL 1050	Biology of the Eukaryotic Cell
BIOL 1310	Developmental Biology

BIOL 1515	Conservation in the Genomics Age
BIOL 1810	21st Century Applications in Cell and Molecular Biology
BIOL 1865	Toxicology
NEUR 1020	Principles of Neurobiology

Area 2 (Structure/Function) 1

BIOL 0400	Biological Design: Structural Architecture of Organisms
BIOL 0410	Invertebrate Zoology
BIOL 0440	Inquiry in Plant Biology: Analysis of Plant Growth, Reproduction and Adaptive Responses
BIOL 0800	Principles of Physiology
BIOL 1120	Biomaterials
BIOL 1155	Hormones and Behavior
BIOL 1310	Developmental Biology
BIOL 1330	Biology of Reproduction
BIOL 1800	Animal Locomotion
BIOL 1865	Toxicology
NEUR 0010	The Brain: An Introduction to Neuroscience

Area 3 (Organismal Biology) 1

BIOL 0210	Diversity of Life
BIOL 0380	The Ecology and Evolution of Infectious Disease
BIOL 0410	Invertebrate Zoology
BIOL 0420	Principles of Ecology
BIOL 0430	The Evolution of Plant Diversity
BIOL 0450	Evolutionary Behavioral Ecology
BIOL 0480	Evolutionary Biology
BIOL 1480	Terrestrial Biogeochemistry and the Functioning of Ecosystems
BIOL 1515	Conservation in the Genomics Age
BIOL 1800	Animal Locomotion
ENVS 0490	Environmental Science in a Changing World

Six additional courses chosen from BIOL and/or NEUR offerings for concentrators. The Core may include up to two related sciences, with advisor approval. The Core must also include a Senior Capstone. 6

SENIOR CAPSTONE: *Only applies to students who have declared in Fall 2019 or later.* To be fulfilled via ONE of the following:

1. One of the following approved courses: BIOL 1100, 1250, 1515, 1555, 1565, 1575, 1600, 1820, 1970A.

2. One semester of independent research/independent study (BIOL 1950 or BIOL 1960).

Please visit the BUE webpage for more information.

Total Credits 10

¹ AP scores of 4 or 5 may substitute Math courses.

² Biology courses for concentration credit include those numbered between 0100 - 2999.

³ At least two biology and/or neuroscience courses must be at the advanced level (between 1000-2999). Senior Capstone can be used towards one advanced requirement or one lab requirement. At least three of the Biology and/or Neuroscience courses must include laboratory or fieldwork. BIOL 1950/BIOL 1960, (Directed Research) may be included, but is not required. If a lab project, a semester can count for one of the three lab course requirements.

⁴ No substitutions per above Area list. If a course is listed in more than one area, it may be used to fulfill one area only; the other area must be fulfilled by a different course.

Honors: Honors in biology requires a thesis and presentation based on a research project (conducted via BIOL 1950/BIOL 1960), and quality grades in the concentration. Guidelines and information on faculty research are available in the Office of Biology Undergraduate Education or found at <http://www.brown.edu/academics/biology/undergraduate-education/>.

Standard Program for the Sc.B. Biology

The concentration program for the Sc.B. in Biology consists of seven prerequisite courses in math, chemistry, and physics as well as fourteen courses in biological sciences, including courses in each of the following three areas: Area 1: Cell/Molecular Biology, Area 2: Structure/Function, and Area 3: Organismal Biology, and the three-course Track. The biological sciences requirement also requires research (BIOL 1950/BIOL 1960), which should reflect the advanced cluster.

Students pursuing a ScB in Biology have the option to substitute a course for CHEM 0360 (Organic Chemistry) in their background core. For students pursuing all tracks, BIOL 0280 (Introductory Biochemistry) may serve as the replacement course. Please note that approval from the concentration advisor is required for these background course substitutions. If the student has already declared, then a revised concentration plan must be submitted and approved via the ASK system. If BIOL 0280 is used as a substitute for CHEM 0360, it cannot be counted as a core course or as an Area 1 course. Students planning to apply to medical or graduate school should seek additional advising (such as from the Health Careers Office) in crafting their course plan.

The Biology Sc.B. Concentration Worksheet (<https://bue.brown.edu/concentrations/biology-scb/>) may be a useful tool for course planning.

Prerequisites: 1

MATH 0090	Single Variable Calculus, Part I (or placement. MATH 0050/MATH 0060 may be substituted for MATH 0090)

One of the following:

MATH 0100	Single Variable Calculus, Part II (or placement)
or MATH 0170	Single Variable Calculus, Part II (Accelerated)
or a statistics course to be approved by the concentration advisor	

Each of the following:

CHEM 0330	Equilibrium, Rate, and Structure (or IB credit)
CHEM 0350	Organic Chemistry I
CHEM 0360	Organic Chemistry II
or BIOL 0280	Biochemistry
PHYS 0030	Basic Physics A (or equivalent. PHYS 0050 PHYS 0070, or ENGN 0030 may be substituted for PHYS 0030.)
PHYS 0040	Basic Physics B (or equivalent. PHYS 0060 or ENGN 0040 may be substituted for PHYS 0040.)

Core Courses: 2,3,4

BIOL 0200	The Foundation of Living Systems (or placement)	1

Area 1 (Cell/Molecular Biology) 1

BIOL 0280	Biochemistry
BIOL 0470	Genetics
BIOL 0500	Cell and Molecular Biology
BIOL 0510	Introductory Microbiology
BIOL 0530	Principles of Immunology
BIOL 1050	Biology of the Eukaryotic Cell
BIOL 1310	Developmental Biology
BIOL 1515	Conservation in the Genomics Age
BIOL 1810	21st Century Applications in Cell and Molecular Biology
BIOL 1865	Toxicology

NEUR 1020	Principles of Neurobiology	
Area 2 (Structure/Function)		1
BIOL 0400	Biological Design: Structural Architecture of Organisms	
BIOL 0410	Invertebrate Zoology	
BIOL 0440	Inquiry in Plant Biology: Analysis of Plant Growth, Reproduction and Adaptive Responses	
BIOL 0800	Principles of Physiology	
BIOL 1120	Biomaterials	
BIOL 1155	Hormones and Behavior	
BIOL 1310	Developmental Biology	
BIOL 1330	Biology of Reproduction	
BIOL 1800	Animal Locomotion	
BIOL 1865	Toxicology	
NEUR 0010	The Brain: An Introduction to Neuroscience	
Area 3 (Organismal Biology)		1
BIOL 0210	Diversity of Life	
BIOL 0380	The Ecology and Evolution of Infectious Disease	
BIOL 0410	Invertebrate Zoology	
BIOL 0420	Principles of Ecology	
BIOL 0430	The Evolution of Plant Diversity	
BIOL 0450	Evolutionary Behavioral Ecology	
BIOL 0480	Evolutionary Biology	
BIOL 1480	Terrestrial Biogeochemistry and the Functioning of Ecosystems	
BIOL 1515	Conservation in the Genomics Age	
BIOL 1800	Animal Locomotion	
ENVS 0490	Environmental Science in a Changing World	
Six additional courses chosen from BIOL and/or NEUR offerings for concentrators. The Core may include up to two related sciences, with advisor approval. The Core must also include research.		6
RESEARCH:		
The two semester research requirement may be satisfied by any two of the opportunities listed below. Students may find the following resources useful in planning for research: the annual BUE-PLME Finding, Securing and Succeeding in Research workshop, the BUE Research webpage, and the Sheridan Center's Undergraduate Research & Experiential Opportunities webpage. Following conversation and agreement with the advisor, students articulate the research plan in the ASK declaration (in the designated text box) which is submitted for review and approval by the advisor.		
Choose two:		
BIOL 1950	Directed Research/Independent Study	
BIOL 1960	Directed Research/Independent Study	
NEUR 1970	Independent Study	
Independent study course in a related discipline (i.e. STEM disciplines, ENVS, PHP, etc.) if the project is relevant to the student's learning goals and interests in the concentration.		
The following COEX courses: BIOL 0285, BIOL 0440, BIOL 0600, BIOL 0940G, BIOL 1515, BIOL 1555; NEUR 1630, CLPS 1195. New COEX courses will be considered as they are developed and offered at Brown, and as relevant to the concentration.		

A summer research experience equivalent in scope and scale to work the student would pursue in a Biology independent study course. Examples include UTRAs, LINK awards, approved research programs at other institutions, etc. These experiences do not count as a course in the 10 course core requirement, but they can be used to satisfy the one semester of the research requirement. Advisors will work with students to review these experiences - drawing on a range of potential materials including a written summary of the experience, formal work plans, materials produced (i.e. presentations/papers), and in some cases a letter from the supporting advisor.

Other equivalent opportunities not listed - with approval from the concentration advisor and Dean Achilli.

Students are encouraged to pursue research related to their track

TRACK:

The advanced thematic track consists of three additional biological sciences courses (not including BIOL 1950/1960 research) that form a Track. Tracks include: Immuno/Pathobiology; Ecology, Evolution and Organismal Biology; Physiology and Biotechnology; Neurobiology; Physical Sciences; Cell and Molecular Biology; Biomedical Informatics. At least two track courses, and preferably all three, must be above 1000-level. Track courses should form a cohesive grouping approved by the concentration advisor.

Biomedical Informatics - BIOL 1565 is required for this track along with 2 additional courses from the following (Additional advanced courses will be considered w/ advisor approval):

BIOL 1555	Methods in Informatics and Data Science for Health
BIOL 1575	Evaluation of Health Information Systems
BIOL 1595	Artificial Intelligence in Biomedicine

Cell and Molecular Biology

BIOL 1050	Biology of the Eukaryotic Cell
BIOL 1270	Advanced Biochemistry
BIOL 1300	Biomolecular Interactions: Health, Disease and Drug Design
BIOL 1310	Developmental Biology
BIOL 1330	Biology of Reproduction
BIOL 1540	Molecular Genetics
BIOL 1545	Human Genetics and Genomics
BIOL 1810	21st Century Applications in Cell and Molecular Biology
BIOL 1820	Environmental Health and Disease
BIOL 1865	Toxicology
BIOL 1970A	Stem Cell Biology

Ecology, Evolution and Organismal Biology

BIOL 1430	Foundations of Population Genetics
BIOL 1435	Computational Methods for Studying Demographic History with Molecular Data
BIOL 1440	Coral Reef Ecology
BIOL 1465	Human Population Genomics
BIOL 1470	Conservation Biology
BIOL 1480	Terrestrial Biogeochemistry and the Functioning of Ecosystems
BIOL 1515	Conservation in the Genomics Age
BIOL 1545	Human Genetics and Genomics
BIOL 1800	Animal Locomotion
BIOL 1880	Comparative Biology of the Vertebrates
BIOL 1885	Human Anatomy and Biomechanics

Immunobiology

BIOL 1250	Host-microbiome Interactions in Health and Disease
BIOL 1290	Cancer Biology
BIOL 1520	Innate Immunity
BIOL 1550	Parasitism: Biology and Disease
BIOL 1560	Virology
BIOL 1600	Development of Vaccines to Infectious Diseases
Neurobiology	
BIOL 1100	Cell Physiology and Biophysics
BIOL 1110	Topics in Signal Transduction
BIOL 1190	Synaptic Transmission and Plasticity
BIOL 1260	Physiological Pharmacology
BIOL 1650	Structure of the Nervous System
BIOL 1610	Experimental Neurobiology
NEUR listings 1000 level or above	
Physiology and Biotechnology	
BIOL 1070	Biotechnology and Global Health
BIOL 1090	Polymer Science for Biomaterials
BIOL 1100	Cell Physiology and Biophysics
BIOL 1110	Topics in Signal Transduction
BIOL 1120	Biomaterials
BIOL 1140	Tissue Engineering
BIOL 1150	Stem Cell Engineering
BIOL 1160	Principles of Exercise Physiology
BIOL 1190	Synaptic Transmission and Plasticity
BIOL 1260	Physiological Pharmacology
BIOL 1300	Biomolecular Interactions: Health, Disease and Drug Design
BIOL 1810	21st Century Applications in Cell and Molecular Biology
BIOL 1820	Environmental Health and Disease
BIOL 1865	Toxicology
Physical Sciences	
Must be a coherent set of courses drawn from the Physical Sciences; courses must be above the introductory level and approved by advisor	

Total Credits 13

¹ AP scores of 4 or 5 may substitute Math courses.

² Biology courses for concentration credit include those numbered between 0100-2999.

³ At least two biology and/or neuroscience courses must be at the advanced level (between 1000-2999). At least three of the biology and/or neuroscience courses must include laboratory or fieldwork. BIOL 1950/BIOL 1960 can count for one of the three lab course requirements and one advanced course.

⁴ No substitutions per above Area list. If a course is listed in more than one area, it may be used to fulfill one area only; the other area must be fulfilled by a different course.

Honors: Honors in biology requires a thesis and presentation based on a research project (usually conducted via BIOL 1950/BIOL 1960), and quality grades in the concentration. Guidelines and information on faculty research are available in the Office of Biology Undergraduate Education or at <http://www.brown.edu/academics/biology/undergraduate-education/>.

Stipulations for Biology Programs:

- For double concentrations, no more than two courses may overlap (i.e., be used to meet requirements of both concentrations) with a few specific exceptions (<https://college.brown.edu/sites/g/files/dprerj916/files/2022-04/2-Course-Overlap-Exceptions-list-and-rule-for-web.docx>).
- No more than two semesters of directed research may be used as concentration credits. Each does count as an individual core course

towards the program, but only carry one lab credit or one 1000-level credit towards the three required.

- A limited number of transfer or study abroad courses may be used within the program, subject to approval of advisor, and Associate Dean of Biology, Toni-Marie Achilli.

Biomedical Engineering

Biomedical engineering is a dynamic and growing field based upon the application of the tools of engineering to the subject matter of biology and medicine. The undergraduate program in biomedical engineering is an independent concentration structured as a joint program between the Division of Biology and Medicine and the School of Engineering. Students can take courses from and do research with faculty from engineering, the various departments of biology, and the Brown-affiliated hospitals in Rhode Island. The Biomedical Engineering concentration shares much of the core with the other engineering programs, but the program's primary emphasis is on the fundamentals of biomedical engineering, while also allowing students to personalize their curriculum. Biomedical engineers design new drugs, genetically engineer organisms, and devise new medical and medical instruments. They also use their understanding of biology to reinvent man-made materials and products. BME students learn to apply the principles of engineering and science, along with problem solving skills and critical thinking to a broad spectrum of engineering problems. Further, BME is a sound foundation for lifelong education with its emphasis on the use of teamwork, effective communication skills, and an understanding of broad social, ethical, economic and environmental consequences. The biomedical engineering curriculum at Brown prepares students for careers in biomedical engineering and biotechnology, as well as careers in diverse areas such as medicine, law, business, and health care delivery.

The Sc.B. program in Biomedical Engineering is accredited by the Engineering Accreditation Commission of ABET <http://www.abet.org/>. It is jointly offered by the School of Engineering and the Division of Biology and Medicine as an interdisciplinary concentration designed for students interested in applying the methods and tools of engineering to the subject matter of biology and the life sciences. Alumni of the Biomedical Engineering (BME) program will achieve one or more of these program educational objectives (PEOs) within five (5) years of graduation: (1) Serve society through work or advanced study in a broad range of fields including, but not limited to, medicine, healthcare, industry, government, and academia; (2) Apply their deeply creative and versatile biomedical engineering education to solve a broad spectrum of engineering and societal challenges; and (3) Contribute as role models, mentors, or leaders in their fields. The student outcomes of this program are the ABET (1) - (7) Student Outcomes as defined by the ABET Criteria for Accrediting Engineering Programs, available online at <http://www.abet.org/accreditation-criteria-policies-documents/>. The Biomedical Engineering concentration shares much of the core with the other engineering programs, but is structured to include more courses in biology and chemistry, and a somewhat different emphasis in mathematics.

The requirements regarding Mathematics, Advanced Placement, Transfer Credit, Substitutions for Required Courses, and Humanities and Social Science Courses are identical to those of the Sc.B. degree programs in Engineering. Please refer to the Engineering section of the University Bulletin (<https://bulletin.brown.edu/engineering/>) for explicit guidelines.

The Biomedical Engineering concentration shares much of the core with the other engineering programs, but is structured to include more courses in biology and chemistry, and a somewhat different emphasis in mathematics.

Standard program for the Sc.B. degree

1. Core Courses

ENGN 0030	Introduction to Engineering	1
or ENGN 0031	Honors Introduction to Engineering	
or ENGN 0032	Introduction to Engineering: Design	
ENGN 0040	Engineering Statics and Dynamics	1
ENGN 0510	Electricity and Magnetism	1
or ENGN 0520	Electrical Circuits and Signals	

ENGN 0720	Thermodynamics	1
ENGN 0810	Fluid Mechanics	1
CHEM 0330	Equilibrium, Rate, and Structure	1
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
or MATH 0100	Single Variable Calculus, Part II	
CHEM 0350	Organic Chemistry I	1
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
or MATH 0180	Multivariable Calculus	
or MATH 0350	Multivariable Calculus With Theory	
APMA 0350	Applied Ordinary Differential Equations ¹	1
APMA 1650	Statistical Inference I	1
or BIOL 0495	Statistical Analysis of Biological Data	
or PHP 1510	Principles of Biostatistics and Data Analysis	
or APMA 1655	Honors Statistical Inference I	

2. Upper Level Biomedical Engineering Curriculum

ENGN 1110	Transport and Biotransport Processes	1
ENGN 1210	Biomechanics	1
ENGN 1230	Instrumentation Design	1
ENGN 1490	Biomaterials	1
BIOL 0800	Principles of Physiology	1

3. Additional Biomedical Engineering Electives: Complete at least 3 courses from the following groups; other upper-level courses are subject to Concentration Advisor approval.

Select one or two of the following:		
CSCI 1810	Computational Molecular Biology	
or CSCI 1820	Algorithmic Foundations of Computational Biology	
ENGN 0500	Digital Computing Systems	
ENGN 1220	Neuroengineering	
ENGN 1510	Nanoengineering and Nanomedicine	
ENGN 1520	Cardiovascular Engineering	
ENGN 1550	Recent Advances in Biomedical Engineering	
ENGN 1740	Computer Aided Visualization and Design	
ENGN 1930B	Biomedical Optics	
ENGN 2625	Optical Microscopy: Fundamentals and Applications	
ENGN 2910S	Cancer Nanotechnology	
ENGN 2911R	Analytical Modeling for Biomechanical and Biomedical Systems	
ENGN 2912R	Implantable Devices	
BIOL 1140	Tissue Engineering	
BIOL 1150	Stem Cell Engineering	
BIOL 2110	Drug and Gene Delivery	

At least one or two more courses from:

BIOL 0280	Biochemistry	
BIOL 0470	Genetics	
BIOL 0500	Cell and Molecular Biology	
BIOL 0510	Introductory Microbiology	
BIOL 0530	Principles of Immunology	
BIOL 1090	Polymer Science for Biomaterials	
BIOL 1100	Cell Physiology and Biophysics	
BIOL 1555	Methods in Informatics and Data Science for Health	
APMA 1070	Quantitative Models of Biological Systems	
CHEM 0360	Organic Chemistry II	
ENGN 2910G	Topics in Translational Research and Technologies	
NEUR 1020	Principles of Neurobiology	

NEUR 1440	Mechanisms and Meaning of Neural Dynamics	
PHYS 1610	Biological Physics	
BIOL 1810	21st Century Applications in Cell and Molecular Biology	

4. Capstone Design ²

ENGN 1930L	Biomedical Engineering Design and Innovation I	1
ENGN 1931L	Biomedical Engineering Design and Innovation II	1

5. General Education Requirement: At least four approved courses must be taken in the humanities and social sciences.

Total Credits **21**

¹ Students who completed APMA 0330 and/or APMA 0340 prior to academic year 2021-22 may count these as satisfying the APMA 0350 and/or APMA 0360 requirements.

² In some **rare cases**, Independent Study may be substituted, subject to Concentration Advisor approval.

Biophysics

Biophysics is a quantitative science at the intersection of the life and physical sciences. It requires a significant level of competence in physics, chemistry, biology and math as reflected in the concentration requirements. Students should work with their concentration advisor to develop a focused academic plan that complements the required research component of the concentration and allows students to develop analytical and quantitative skills.

Student Goals:

Students in this concentration will:

- Explore the relationship between biological and physical principles by successfully completing foundational courses in biology, physics, math and chemistry
- Gain an in-depth knowledge of the interdisciplinary nature of life and physical sciences by selecting and successfully completing advanced courses in biology, physics, math, chemistry or related fields
- Develop skills to identify and analyze critical questions central to biophysics
- Apply quantitative methods to problems at the interface of life and physical sciences
- Complete a research project with a faculty advisor that focuses on a particular theme or problem in the field of biophysics where students apply knowledge gained throughout the curriculum.

Additional detailed information about the field of Biophysics may be found at: <https://www.brown.edu/academics/biology/undergraduate-education/undergraduate/biophysics> (<https://www.brown.edu/academics/biology/undergraduate-education/undergraduate/biophysics/>)

Standard program for the Sc.B. degree

Requirements

Physics

One of the following series: **2**

PHYS 0030 & PHYS 0040	Basic Physics A and Basic Physics B ¹	
PHYS 0050 & PHYS 0060	Foundations of Mechanics and Foundations of Electromagnetism and Modern Physics	
PHYS 0070 & PHYS 0160	Analytical Mechanics and Introduction to Relativity, Waves and Quantum Physics	
PHYS 0470	Electricity and Magnetism	1

Chemistry

CHEM 0330	Equilibrium, Rate, and Structure	1
CHEM 0350	Organic Chemistry I	1

Select one other advanced Chemistry Course	1
Math	
MATH 0090 Single Variable Calculus, Part I (or equivalent)	1
MATH 0100 Single Variable Calculus, Part II (or equivalent)	1
MATH 0180 Multivariable Calculus (or equivalent)	1
Biology	
BIOL 0200 The Foundation of Living Systems (or equivalent)	1
Select four additional biology or neuroscience courses chosen with approval of the advisor.	4
Directed Research: Students must take two semesters of research which may be satisfied by any of the opportunities listed below:	2
Directed Research in Biology (BIOL 1950/BIOL 1960), Chemistry (CHEM 0970/CHEM 0980), or Physics (PHYS 1980)	
COEX courses	
A summer research experience in equivalent scope and scale to an independent study, but this would not count as course credit toward the concentration	
Electives: Four electives in biology, physics, math/applied math, chemistry, neuroscience, engineering or computer science; at least 2 courses must be above the introductory level²	4
Total Credits	20

¹ The PHYS 0050/0060 or 0070/0160 sequences are preferred to PHYS 0030/0040.

² Sample electives can be found on the Biology Undergraduate Education page (<https://www.brown.edu/academics/biology/undergraduate-education/undergraduate/biophysics/>).

Chemical Engineering

The Sc.B. program in Chemical Engineering prepares students for any field in the chemical sciences. The program emphasizes a molecular engineering approach to problem-solving. Students will learn how engineering at the atomic scale can be used to solve some of the most pressing technical challenges facing society. The program provides a rigorous foundation in engineering fundamentals and space for students to craft a program for their desired goals. Our students go on to work in industry, start-ups, consulting, graduate and professional schools, and many other fields.

The Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET: <http://www.abet.org> (<http://www.abet.org/>). The objectives of the Brown University Chemical Engineering Sc.B. Program are to produce graduates who will: (1) apply their knowledge of engineering, science, mathematics, and liberal arts to successful careers and leadership roles in industry, government, or academia; (2) apply independent, critical, and integrative thinking to a broad range of complex, multidisciplinary problems, and effectively communicate their solutions to broad audiences of diverse backgrounds; and (3) show a lifelong commitment to technical approaches that address the needs of society in an ethical, safe, sustainable, and environmentally responsible manner. The student outcomes of this program are the ABET (1)- (7) Student Outcomes as defined by the "ABET Criteria for Accrediting Engineering Programs" available online at <http://www.abet.org/accreditation-criteria-policies-documents/>

Note: For students still enrolled with the prior ScB in Engineering with tracks structure please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Please note that all students concentrating in Engineering need to file a concentration declaration using the University's ASK advising system. This declaration must be first reviewed by the relevant Concentration Advisor and then approved by the Director of Undergraduate Studies

after assuring compliance with all relevant program and accreditation requirements.

Standard Program for the Sc.B. degree Mathematics Requirements

As mathematics is a cornerstone of all engineering programs, significant attention is given to early preparation in mathematics in engineering concentrations. It is recognized that students entering Brown will have different levels of mathematics preparation, and the following is offered as general guidance, though the actual choices of courses should be made in consultation with an exploratory advisor. MATH 0190 (or MATH 0100), followed by MATH 0200 (or MATH 0180) is the preferred sequence of courses to be taken in the freshman year. MATH 0100 and MATH 0180 offer content like that in MATH 0190 and MATH 0200, respectively, but the latter courses are highly recommended for future engineering students because they offer more examples of relevance to the field. Students who would prefer, or require, a more introductory level calculus course may start the sequence with MATH 0090. They may then take MATH 0200 (or MATH 0180) in the subsequent semester and in that case, would receive engineering concentration credit equivalent to that which they would have received having taken MATH 0190 and MATH 0200. However, students who find that the step up from MATH 0090 to MATH 0200 is too challenging, have a choice to take MATH 0190 (or MATH 0100) upon completion of MATH 0090, but in this case, MATH 0090 would not carry engineering concentration credit and the student would then need to take MATH 0200 (or MATH 0180) in the sophomore year.

Students who have taken Advanced Placement (AP) calculus courses in high school and/or have shown proficiency through AP examinations may start the calculus sequence at a higher level than that suggested above. If a student has AP credit and accepts to use it, it then allows the student to place out of MATH 0190 (or MATH 0100). These students should enroll in the appropriate higher-level math course, e.g., MATH 0200 (or MATH 0180) or possibly MATH 0350 (a more theoretical course that covers similar material). Although it is impossible to place out of MATH 0200 or MATH 0350 with AP credit, we recognize that some students enter with an even higher level of preparation. Those students are advised to enroll in MATH 0520 (Linear Algebra), or MATH 0540 (Honors Linear Algebra), and take their second freshman mathematics course at a higher level, for example, MATH 1460 (Complex Analysis), MATH 1210 (Probability), or MATH 1220 (Mathematical Statistics). Alternatively, for some engineering concentrations, this second MATH credit requirement may be satisfied by taking a course from the Applied Mathematics Department, such as APMA 0350 (Applied Ordinary Differential Equations), APMA 0360 (Applied Partial Differential Equations), APMA 1650 (Statistical Inference) or APMA 1210 (Operations Research: Deterministic Models) if one of those courses listed is not taken for two APMA concentration credits. Details regarding the mathematics requirement for each concentration are listed in the corresponding programs.

Advanced Placement

Courses that have been taken at the secondary school level are typically only used for placement into the appropriate course level at Brown. The examples of how this can be done in mathematics are given above, and there are other instances (such as in selection of the appropriate introductory chemistry course) where AP credit is considered. It should be noted, however, that advanced placement credits cannot be used to substitute for any Engineering concentration requirements; they are instead used to ensure that students are placed into the correct level of courses.

Transfer Credits

Some students will also complete courses at other universities during the time they are Brown students (sometimes during summers while they are not in residence at Brown; sometimes during a junior semester abroad). Students who have successfully completed college courses elsewhere may apply to the University for transfer credit. (See the "Study Elsewhere" section of the University Bulletin for procedures). In addition to the general

rules governing such transfers, there are specific rules governing courses that will be offered as satisfying Engineering concentration requirements.

If the course proposed for transfer credit is offered by another department at Brown (i.e., that it carries a course number that does not start with ENGN), then the equivalent of the course must be established by that other department. This is done by submitting a formal request through the ASK system (https://ask.brown.edu/transfer_credits/information/index). Once this approval has been received from the other department, the student's internal transcript will show the equivalence and the course in question can be shown in the Engineering concentration declaration as having been completed elsewhere. If the equivalence to a Brown course is not approved, then there may still be "unassigned credit" given for the course. In this case, the situation relative to how it does or does not count for concentration credit needs to be discussed with the Concentration Advisor. In rare cases, students may petition the Engineering Concentration Committee to use courses that do not have an equivalent offered at Brown in order to meet a concentration requirement. Substitutions of this nature can only be approved if the student's overall program meets published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses to meet relevant accreditation requirements. Students should consult their Concentration Advisor for assistance with drafting a petition. The decision whether to award concentration credit is made by majority vote of the Engineering Concentration Committee.

If the student wishes to transfer a course taken outside of Brown that would normally carry an Engineering course number, the sequence is a bit different. First, the student needs to fill out an Engineering Transfer Credit Approval Request (see <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad/>)). This routes the request to the relevant Brown Engineering faculty member for approval. Once this has been obtained, then transfer approval is requested through the ASK system, as described above. This process ensures that the transcript will capture the equivalence of the externally completed course.

Substitutions for Required Courses

Students may petition the Engineering Concentration Committee to substitute a course in place of a defined concentration requirement. Such substitutions can only be approved if the student's modified program continues to meet the published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses needed to meet accreditation requirements. If the substitution involves taking an equal or higher level course in substantially the same area, whether at Brown or elsewhere, it can be approved by the Concentration Advisor without requiring a formal petition to the Concentration Committee. (For courses taken elsewhere, the credit must be officially transferred as described above.) Students wishing to make substitutions of a broader nature should consult their Concentration Advisor for assistance in drafting their petition to the Engineering Concentration Committee. Such petitions may be approved by a majority vote of the Committee.

1. Core Courses:

ENGN 0030	Introduction to Engineering	1
or ENGN 0031	Honors Introduction to Engineering	
or ENGN 0032	Introduction to Engineering: Design	
ENGN 0040	Engineering Statics and Dynamics	1
ENGN 0150	Principles of Chemical and Atomistic Engineering	1
or BIOL 0200	The Foundation of Living Systems	
ENGN 0410	Materials Science	1
ENGN 0510	Electricity and Magnetism	1
ENGN 0520	Electrical Circuits and Signals	1
or ENGN 0500	Digital Computing Systems	
ENGN 0720	Thermodynamics	1
ENGN 0810	Fluid Mechanics	1
CHEM 0330	Equilibrium, Rate, and Structure	1

MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
or MATH 0100	Single Variable Calculus, Part II	
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
or MATH 0180	Multivariable Calculus	
or MATH 0350	Multivariable Calculus With Theory	
APMA 0350	Applied Ordinary Differential Equations ¹	1
APMA 0360	Applied Partial Differential Equations I ¹	1
or APMA 1650	Statistical Inference I	
or APMA 1655	Honors Statistical Inference I	
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science	

2. Upper-Level Chemical Engineering Curriculum

ENGN 1110	Transport and Biotransport Processes	1
ENGN 1120	Reaction Kinetics and Reactor Design ²	1
ENGN 1130	Chemical Engineering Thermodynamics ²	1
ENGN 1710	Principles of Heat Transfer	1
CHEM 0350	Organic Chemistry I	1

Advanced Chemistry elective course ³		
CHEM 0360	Organic Chemistry II	1
or CHEM 0400	Biophysical and Bioinorganic Chemistry	
or CHEM 0500	Inorganic Chemistry	
or CHEM 1140	Physical Chemistry: Quantum Chemistry	

Advanced Engineering or Natural Sciences elective course ⁴		

3. Capstone Design Course

ENGN 1140	Chemical Process Design	1

*In addition to program requirements above, students must take four courses in the humanities and social sciences.

Total Credits	21

¹ Students who completed APMA 0330 and/or APMA 0340 prior to academic year 2021-22 may count these as satisfying the APMA 0350 and/or APMA 0360 requirements.

² ENGN 1120 and ENGN 1130 are only offered in alternate years.

³ An advanced chemistry course approved by Concentration Advisor; the courses listed have been preapproved for this requirement.

⁴ An advanced course in the natural sciences approved by the Concentration Advisor. For suggestions of acceptable courses that fulfill this requirement, please see the Concentration Advisor.

Special Sc.B. Concentrations (non-accredited):

In addition to the standard program described above, students may also petition the Engineering Concentration Committee to pursue a special engineering Sc.B. degree of their own design. Such special Sc.B. programs are not ABET-accredited. Students with a special concentration will receive an Sc.B. degree in engineering, but a specific area of specialization will not be noted on their transcript. A special Sc.B. concentration is intended to prepare graduates for advanced study in engineering or for professional practice, but in an area that is not covered by one of the existing Sc.B. programs. Accordingly, special concentration programs are expected to consist of a coherent set of courses with breadth, depth and rigor comparable to an accredited degree. A total of 21 engineering, mathematics, and basic science courses are required. The program must include at least 3 courses in mathematics, at least 2 courses in physical or life sciences; and at least 12 courses in engineering. At least five of the engineering courses must be upper level courses, and one must be a capstone design course or independent study, which must be advised or co-advised by a member of the regular engineering faculty. Note that not all Engineering courses may be used to meet Sc.B. requirements: for example, the courses not allowed to count toward the A.B. will not qualify. Petitions should be prepared in consultation with an engineering faculty advisor, who will submit the petition to the Engineering Concentration Committee. Petitions must include: (i) a statement of the objectives of the degree program, and an explanation of how the courses in the program meet these objectives; (ii) course descriptions for any

courses in the program that are not part of standard Sc.B. Engineering concentrations; (iii) a detailed description of any independent study courses used for concentration credit, signed by the faculty advisor for this course; and (iv) an up-to-date internal transcript.

Professional Track

While we do not give course credit for internships, we officially recognize their importance via the optional Professional Tracks. The requirements for the professional tracks include all those of the standard tracks, as well as the following: Students must complete full-time professional experiences (or part-time experiences of equivalent total effort) doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts:

- Describe the organization you worked in and the nature of your responsibilities.
- Which courses were put to use in your work?
- Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your work experience?
- What are the topics from these courses that would have helped you if you had been more familiar with them?
- What topics would have been helpful in preparation for this work experience that you did not learn at Brown?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did something you would like to continue doing once you graduate? Explain.
- Would you recommend your work experience to other Brown students? Explain.

The reflective essays are subject to the approval of the student's Concentration Advisor.

Entry to the Professional Track requires a simple application form to be completed by the student and approved by the Concentration Advisor at the time of the concentration declaration. If the student has not yet declared a concentration, the form may be approved by the Chair of the Concentration Committee. The Concentration Advisor will certify that all Professional Track students have completed the necessary internships and will grant approval for the associated reflective essays. All other requirements remain identical to those in the standard tracks in the concentrations.

Degrees with Honors in Engineering

Honors are granted by the University to students whose work in a field of concentration has demonstrated superior quality and culminated in an 'Honors Thesis of Distinction.' Honors recipients in the School of Engineering must meet the following criteria: (1) Demonstrate a strong academic record (60% A's or "S with Distinction" in their concentration through the seventh semester); (2) Propose and execute an independent research project under the guidance of a faculty member; (3) Complete a written thesis to the satisfaction of the Honors Program Committee; (4) Give a scientific/technical presentation at the Undergraduate Research Symposium in the spring semester; and (5) Fulfill all deadlines for applying for or completing honors to the satisfaction of his/her research advisor and the Honors Program Committee.

Chemical Physics

Chemical Physics is an interdisciplinary field at the crossroads of chemistry and physics and is administered jointly by the two departments. The concentration provides students with a broad-based understanding in fundamental molecular sciences, as well as a background for graduate studies in physical chemistry, chemical physics, or molecular engineering. Concentrators are required to take twenty courses in chemistry, physics,

and mathematics, although approved courses in applied mathematics, biology, computer science, geological sciences, or engineering may be substitutes. Chemical Physics concentrators are also advised to take at least six courses in the humanities and social sciences. Chemical Physics concentrators at all levels (first-year through seniors) are actively involved in research with faculty members in both departments.

Standard program for the Sc.B. degree

Twenty-one semester courses¹ in chemistry, physics, and mathematics, with a minimum of four semester courses in mathematics. The expectation is that courses required for a concentration in Chemical Physics will be taken for a letter grade. Core courses are:

CHEM 0330	Equilibrium, Rate, and Structure	1
CHEM 0350	Organic Chemistry I	1
CHEM 0500	Inorganic Chemistry	1
CHEM 1140	Physical Chemistry: Quantum Chemistry	1
PHYS 0070	Analytical Mechanics	1
PHYS 0160	Introduction to Relativity, Waves and Quantum Physics	1
PHYS 0470	Electricity and Magnetism	1
Select one of the following laboratory courses:		1
CHEM 1160	Physical Chemistry Laboratory	
PHYS 0560	Experiments in Modern Physics	
PHYS 1560	Modern Physics Laboratory	
Select one course in statistical mechanics:		1
CHEM 1150	Physical Chemistry: Thermodynamics and Statistical Mechanics	
PHYS 1530	Thermodynamics and Statistical Mechanics	
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
MATH 0520	Linear Algebra	1
Seven courses, primarily at the 1000 or 2000 level, in chemistry or physics.		7
Select two semesters of independent study:		2
PHYS 1990	Senior Conference Course	
CHEM 0980	Undergraduate Research	

Total Credits 21

¹ Other approved courses in applied mathematics, biology, computer science, geological sciences, or engineering may be substituted for some of the twenty-one.

Students are advised to take at least six courses in the humanities and social sciences.

Honors Requirements for Chemical Physics

All Chemical Physics concentrators who have grades of A or S with distinction in a majority of their concentration courses will be considered for Honors; no separate application is necessary.

The requirements for Honors in Chemical Physics are:

* Grades of A or S with distinction in a majority of courses taken for the concentration.

* Two semesters of Independent Study (CHEM 0980 or equivalent). Guidelines and requirements associated with Independent Study are in the Undergraduate Concentration Handbook which can be found at the department website (<http://www.brown.edu/academics/chemistry/undergraduate/>).

* A Thesis in a form approved and recommended by the research advisor. Additional information about thesis guidelines will be provided to seniors by the Concentration Advisor.

* A Poster presentation at the chemistry department's spring undergraduate poster session.

Chemistry

The Chemistry concentration offers courses and research opportunities that range from fundamental studies involving the characterization and preparation of synthetic and naturally occurring molecules, to interdisciplinary studies at the interfaces of chemistry with biology, medicine, physics, engineering, and nanoscience. As early as their first year, undergraduates are able to work with faculty members on cutting edge research projects. The Sc.B. degree provides a thorough foundation for further graduate study or for entry-level technical positions in the molecular sciences. Students seeking the Sc.B. may either pursue the standard Chemistry concentration or one of two possible tracks: Chemical Biology or Materials Chemistry. Students may also pursue an A.B. degree in Chemistry, which provides a core education in the discipline.

Standard program for the A.B. degree

CHEM 0330	Equilibrium, Rate, and Structure	1
CHEM 0350	Organic Chemistry I	1
CHEM 0360	Organic Chemistry II	1
CHEM 0500	Inorganic Chemistry	1
CHEM 0600	Preparative Chemistry Lab	.5
CHEM 1140	Physical Chemistry: Quantum Chemistry ¹	1
CHEM 1150	Physical Chemistry: Thermodynamics and Statistical Mechanics ¹	1
CHEM 1160	Physical Chemistry Laboratory ¹	1
One upper level CHEM elective. ²		1
Total Credits		8.5

¹ Note that the physical chemistry courses (CHEM 1140, CHEM 1150, CHEM 1160) have mathematics and physics prerequisites.

² Upper level chemistry course are any 1000- and 2000- CHEM course.

BIOL 0280 is credited as an upper level chemistry elective for chemistry concentration purposes. You should discuss your elective choices with your Concentration Advisor to craft a course of study that is appropriate for your interests.

Standard program for the Sc.B. degree

The Chemistry Department offers three options for the Sc.B. Chemistry Concentration – a straight Chemistry option, a Chemical Biology track and a Materials Chemistry track. These tracks are not separate concentrations – your degree will still be an Sc.B. in Chemistry. The Chemical Biology track is designed for students who have a strong interest in the interface of chemistry with biology. The Materials Chemistry track is designed for students who have a strong interest in the interface of chemistry with nanoscience and materials science. It is recommended that courses in the concentration be taken for a letter grade, and any decision to take a concentration course S/NC should be made after consultation with a concentration advisor.

Concentrating in Chemistry – Three tracks

The required/recommended courses for the three tracks are given below.

ScB Chemistry:

CHEM 0330	Equilibrium, Rate, and Structure	1
CHEM 0350	Organic Chemistry I	1
CHEM 0360	Organic Chemistry II	1
CHEM 0500	Inorganic Chemistry	1
CHEM 0600	Preparative Chemistry Lab	.5
Two semesters of independent study:		2
CHEM 0980	Undergraduate Research ¹	
or CHEM 0981	Undergraduate Research - Writing Designated	
CHEM 1140	Physical Chemistry: Quantum Chemistry	1
CHEM 1150	Physical Chemistry: Thermodynamics and Statistical Mechanics	1
CHEM 1160	Physical Chemistry Laboratory	1
MATH 0180 or equivalent ²		1

Two Physics courses, typically 0030/0040 or 0050/0060	2
Six electives (at least three must be upper level CHEM courses)	6

Total Credits **18.5**

ScB Chemistry - Chemical Biology Track:

CHEM 0330	Equilibrium, Rate, and Structure	1
CHEM 0350	Organic Chemistry I	1
CHEM 0360	Organic Chemistry II	1
CHEM 0400	Biophysical and Bioinorganic Chemistry	1
or CHEM 0500	Inorganic Chemistry	
CHEM 0600	Preparative Chemistry Lab	.5
Two semesters of independent study:		2
CHEM 0980	Undergraduate Research ¹	
or CHEM 0981	Undergraduate Research - Writing Designated	
CHEM 1140	Physical Chemistry: Quantum Chemistry	1
CHEM 1230	Chemical Biology	1
CHEM 1240	Biochemistry	1
BIOL 0280	Biochemistry	1
MATH 0180 or equivalent ²		1
Two Physics courses, typically 0030/0040 or 0050/0060		2
Select three of the following: ⁴		3
BIOL 0470	Genetics	
BIOL 0500	Cell and Molecular Biology	
BIOL 0510	Introductory Microbiology	
BIOL 0530	Principles of Immunology	
BIOL 0800	Principles of Physiology	
NEUR 1020	Principles of Neurobiology	
Two other electives ³		2

Total Credits **18.5**

ScB Chemistry - Materials Chemistry Track:

CHEM 0330	Equilibrium, Rate, and Structure	1
CHEM 0350	Organic Chemistry I	1
CHEM 0360	Organic Chemistry II	1
CHEM 0500	Inorganic Chemistry	1
CHEM 0600	Preparative Chemistry Lab	.5
Two semesters of independent study:		2
CHEM 0980	Undergraduate Research ¹	
or CHEM 0981	Undergraduate Research - Writing Designated	
CHEM 1060	Advanced Inorganic Chemistry ⁵	1
CHEM 1140	Physical Chemistry: Quantum Chemistry	1
CHEM 1150	Physical Chemistry: Thermodynamics and Statistical Mechanics ⁵	1
CHEM 1700	Nanoscale Materials: Synthesis and Applications	1
MATH 0180 or equivalent ²		1
Two Physics courses, typically 0030/0040 or 0050/0060 ⁵		2
One of the following courses		1
BIOL 1090	Polymer Science for Biomaterials (or)	
BIOL 1120/	Biomaterials (or)	
BIOL 1140	Tissue Engineering (or)	
ENGN 1470	Composite Materials (or)	
ENGN 1490	Biomaterials (or)	
Four electives, at least two must be upper level CHEM courses. ³		4

Total Credits **18.5**

¹ Two semesters of undergraduate research are required for the concentration. Chem0980 and 0981 are courses which may be repeated for credit.

² NOTE: MATH 0180 has additional prerequisites.

³ Upper level chemistry courses are any 1000- and 2000-level CHEM course. BIOL 0280 is credited as an upper level chemistry elective for the chemistry concentration. Non CHEM electives are typically foundational courses or upper level science/math courses with a significant molecular focus or those that cover tools/techniques that are of utility to a chemist. You should discuss your elective choices with your Concentration Advisor to craft a course of study that is appropriate for your interests.

⁴ NOTE: Many of the BIOL courses have BIOL 0200 as a prerequisite.

⁵ For students with a more Engineering bent, the following substitutions can be made - ENGN 0030/ENGN 0040 can be substituted for PHYS; ENGN 0410 can be substituted for CHEM 1060; ENGN 0720 for CHEM 1150.

In each of these cases, /CHEM 0980 /CHEM 0981 should be carried out with a faculty member with an appointment in the Chemistry Department. Research with faculty advisors outside the Chemistry Department is also possible after consultation with a Concentration Advisor.

Honors Requirements for Chemistry

All Chemistry concentrators who have grades of A or S with distinction in a majority of their concentration courses after their seventh semester are eligible for Honors; no separate application is necessary.

The requirements for Honors in Chemistry are:

* Grades of A or S with distinction in a majority of courses taken for the concentration.

* Two semesters of Undergraduate Research CHEM 0980, CHEM 0981 or equivalent. Guidelines and requirements associated with Undergraduate Research are in the Undergraduate Concentration Handbook which can be found at the department website (<http://www.brown.edu/academics/chemistry/undergraduate/>).

* A Senior Thesis in a form approved and recommended by the research advisor. Additional information about thesis guidelines will be provided to seniors by the Director of Undergraduate Studies.

* A Senior Poster presentation at the chemistry department's spring undergraduate poster session.

Classics

The study of Classics focuses on the languages, literature, history, culture, and legacy of Greco-Roman antiquity. An undergraduate concentration in Classics furnishes students with a broad liberal education, and provides specialized training for those students intending to enter graduate school. Students may choose to study Ancient Greek, Latin, Sanskrit, and/or Modern Greek, and to explore courses in literature, mythology, history, philosophy, and religion. Students may either pursue the standard Classics concentration – the most popular choice – or one of several optional tracks: Greek, Latin, Greek and Latin, South Asian Classics, Sanskrit, Greek and Sanskrit, or Latin and Sanskrit. Concentrators who pursue an honors degree write a senior thesis, typically over the course of two semesters during their senior year.

Beginning with declarations submitted after September 1, 2018, all tracks except "Greek and Latin," "Greek and Sanskrit," and "Latin and Sanskrit" require the satisfactory completion of nine courses as described below. The introductory courses in Greek and Latin may not usually be counted toward a concentration, but those in Sanskrit may be counted toward the concentration requirement in some of the tracks. Students should always consult with the Director of Undergraduate Studies regarding their path toward fulfilling requirements and choosing electives.

Classics

One course in Greek or Latin on the 1000-level or above.	¹ 1
Select any two of the four ancient history courses:	2
CLAS 1210 Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC	
CLAS 1220 The Fall of Empires and Rise of Kings: Greek History 478 to 323 BC	

or HIST 1200B The Fall of Empires and Rise of Kings: Greek History to 478 to 323 BCE	
CLAS 1310 Roman History I: The Rise and Fall of an Imperial Republic	
CLAS 1320 Roman History II: The Roman Empire and Its Impact	
or HIST 1201B Roman History II: The Empire	
Five other courses in classics, including classical archaeology, Greek (excluding GREK 0100, 0200, 0110), Latin (excluding LATN 0100, 0200, 0110), Sanskrit, or related areas to be approved by the concentration advisor. At least three of these five courses must be offered through the Department of Classics.	5
One further course offered by the Department of Classics and designated "Classics and Beyond," OR a DIAP course offered by the Department of Classics.	1

Total Credits 9

¹ Options include, but are not limited to: GREK 1110B, GREK 1110S, GREK 1111B, GREK 1150, GREK 1810, LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, LATN 1930B, and with instructor permission for those who are very advanced in Greek or Latin: GREK 2020E, GREK 2110K, and LATN 2080F LATN 2090I.

² Options offered by the Department of Classics include, but are not limited to: CLAS 0150, CLAS 0660, CLAS 0765, CLAS 0780, CLAS 0855, CLAS 0900, CLAS 1120G, CLAS 1120Q, CLAS 1120U, CLAS 1145, CLAS 1310, CLAS 1320, CLAS 1750H, GREK 0100, GREK 1110H, GREK 1110B, GREK 1110S, GREK 1150, GREK 1810, LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, LATN 1930B, SANS 0100 and SANS 0200.

³ Options offered by the Department of Classics include, but are not limited to: CLAS 0660, CLAS 0765, CLAS 0855, CLAS 1120G, CLAS 1120U, CLAS 1145, CLAS 1750H, LATN 1110H, and with instructor permission for those who are very advanced in Latin: LATN 2080F and LATN 2090I.

Greek

Four Greek courses on the 1000-level or above, at least one of which is to be:

GREK 1810 Greek Literature Survey to 450 BCE	
or GREK 1820 Greek Literature Survey after 450 BCE	
CLAS 1210 Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC	1
CLAS 1220 The Fall of Empires and Rise of Kings: Greek History 478 to 323 BC	1

Two additional courses in classics, including classical archaeology, Greek (excluding GREK 0100, 0200, 0110), Latin (excluding LATN 0100, 0200, 0110), or related areas to be approved by the concentration advisor. At least one of these two courses must be offered through the Department of Classics.

One further course offered by the Department of Classics and designated "Classics and Beyond," OR a DIAP course offered by the Department of Classics.

Total Credits 9

¹ Options include, but are not limited to: GREK 1110B, GREK 1110S, GREK 1111B, GREK 1150, GREK 1810, and with instructor permission for those who are very advanced in Greek: GREK 2020E and GREK 2110K.

² Options offered by the Department of Classics include, but are not limited to:

CLAS 0150, CLAS 0660, CLAS 0765, CLAS 0780, CLAS 0855, CLAS 0900, CLAS 1120U, CLAS 1145, CLAS 1310, CLAS 1320, CLAS 1750H, LATN 0300, LATN 0400, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, LATN 1930B, SANS 0100, and SANS 0200

³ Options offered by the Department of Classics include, but are not limited to: CLAS 0660, CLAS 0765, CLAS 0855, CLAS 1120G,

CLAS 1120U, CLAS 1145, CLAS 1750H, LATN 1110H, and with instructor permission for those who are very advanced in Latin : LATN 2080F and LATN 2090I.

Latin

Four Latin courses on the 1000-level or above, at least one of which is to be:

LATN 1810	Survey of Republican Literature	
or LATN 1820	Survey of Roman Literature II: Empire	
CLAS 1310	Roman History I: The Rise and Fall of an Imperial Republic	1
CLAS 1320	Roman History II: The Roman Empire and Its Impact	1
or HIST 1201B	Roman History II: The Empire	
Two additional courses in classics, including classical archaeology, Greek (excluding GREK 0100, 0200, 0110), Latin (excluding LATN 0100, 0200, 0110), or related areas to be approved by the concentration advisor. At least one of these two courses must be offered through the Department of Classics.		2
One further course offered by the Department of Classics and designated "Classics and Beyond," OR a DIAP course offered by the Department of Classics.		1

Total Credits

9

¹ Options include, but are not limited to: LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, LATN 1930B, and with instructor permission for those who are very advanced in Latin: LATN 2080F and LATN 2090I.

² Options offered by the Department of Classics include, but are not limited to: CLAS 0150, CLAS 0660, CLAS 0765, CLAS 0771, CLAS 0780, CLAS 0855, CLAS 0900, CLAS 1120G, CLAS 1120Q, CLAS 1120U, CLAS 1145, CLAS 1750H, CLAS 1750U, GREK 0300, GREK 0400, GREK 1110B, GREK 1110S, GREK 1110B, GREK 1150, GREK 1810, SANS 0100 and SANS 0200.

³ Options offered by the Department of Classics include, but are not limited to: & CLAS 0660, & CLAS 0765, & CLAS 0855, & CLAS 1120G, & CLAS 1120U, & CLAS 1145, & CLAS 1750H, & LATN 1110H, and with instructor permission for those who are very advanced in Latin: & LATN 2080F & and LATN 2090I.

Greek and Latin

Ancient Language A (Either Latin or Ancient Greek) requires four (4) courses on the 1000-level. Typically Ancient Language A will be the one in which a survey course will be taken.

Ancient Language B (Either Ancient Greek or Latin, respectively) requires four ancient language courses of which two can be 0300 and 0400 and the other two at 1000-level or above.

One of the survey courses in Ancient Language A:

LATN 1810	Survey of Republican Literature	
or LATN 1820	Survey of Roman Literature II: Empire	
GREK 1810	Greek Literature Survey to 450 BCE	
or GREK 1820	Greek Literature Survey after 450 BCE	
Any THREE of the FOUR Ancient History courses:		3
CLAS 1210	Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC	
CLAS 1220	The Fall of Empires and Rise of Kings: Greek History 478 to 323 BC	
or HIST 1200B	The Fall of Empires and Rise of Kings: Greek History to 478 to 323 BCE	
CLAS 1310	Roman History I: The Rise and Fall of an Imperial Republic	
CLAS 1320	Roman History II: The Roman Empire and Its Impact	
or HIST 1201B	Roman History II: The Empire	

One further course offered by the Department of Classics and designated "Classics and Beyond," OR a DIAP course offered by the Department of Classics.

1

Total Credits

13

¹ Options offered include, but are not limited to: LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, LATN 1930B, and with instructor permission for those who are very advanced in Latin: LATN 2080F and LATN 2090I.

² Options include, but are not limited to: , GREK 1110B, GREK 1110S, GREK 1111B, GREK 1150, GREK 1810 and with instructor permission for those who are very advanced in Greek: GREK 2020E and GREK 2110K.

South Asian Classics

At least one Sanskrit course above Sanskrit 0300	1
Three of the Sanskrit Classics Courses in Translation	3
Four other courses in Classics or related areas (such as Comparative Literature, Religious Studies, South Asian Studies, Early Cultures, etc., including SANS 0100, 0200, 0300) to be approved by the concentration advisor	4
One further course offered by the Department of Classics and designated "Classics and Beyond," OR a DIAP course offered by the Department of Classics.	1

Total Credits

9

¹ Options offered include: SANS 0400, SANS 1080 and SANS 1600.

² Options offered include: CLAS 0855 and CLAS 1145.

³ Options offered by the Department of Classics include, but are not limited to: CLAS 0150, CLAS 0660, CLAS 0765, CLAS 0771, CLAS 0780, CLAS 0855, CLAS 0900, CLAS 1120G, CLAS 1120Q, CLAS 1120U, CLAS 1145, CLAS 1310, CLAS 1320, CLAS 1750H, CLAS 1750U, GREK 0100, GREK 0110, GREK 0200, GREK 0300, GREK 0400, GREK 1110B, GREK 1110S, GREK 1111B, GREK 1150, GREK 1810, LATN 0100, LATN 0110, LATN 0200, LATN 0300, LATN 0400, LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, and LATN 1930B.

⁴ Options offered by the Department of Classics include, but are not limited to: & CLAS 0660, & CLAS 0765, & CLAS 0855, & CLAS 1120G, & CLAS 1120U, & CLAS 1145, & CLAS 1750H, & LATN 1110H, and with instructor permission for those who are very advanced in Latin: & LATN 2080F & and LATN 2090I.

Sanskrit

Two Sanskrit courses at the 1000-level or above	2
Two of the Sanskrit Classics Courses in Translation	2
Four other courses in Classics or related areas (such as Comparative Literature, Religious Studies, South Asian Studies, Early Cultures, etc., including SANS 0300 and SANS 0400) to be approved by the concentration advisor	4
One further course offered by the Department of Classics and designated "Classics and Beyond," OR a DIAP course offered by the Department of Classics.	1

Total Credits

9

¹ Options offered include: SANS 1080 and SANS 1600.

² Options offered include: CLAS 0855 and CLAS 1145.

³ Options offered by the Department of Classics include, but are not limited to: CLAS 0150, CLAS 0660, CLAS 0765, CLAS 0771, CLAS 0780, CLAS 0855, CLAS 0900, CLAS 1120G, CLAS 1120Q, CLAS 1120U, CLAS 1145, CLAS 1310, CLAS 1320, CLAS 1750H, CLAS 1750U, GREK 0100, GREK 0110, GREK 0200, GREK 0300, GREK 0400, GREK 1110B, GREK 1110S, GREK 1111B, GREK 1150, GREK 1810, LATN 0100, LATN 0110, LATN 0200, LATN 0300, LATN 0400, LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, and LATN 1930B.

⁴ Options offered by the Department of Classics in 2018/2019 include, but are not limited to: CLAS 0660, CLAS 0765, CLAS 0855, CLAS 1120G, CLAS 1120U,

CLAS 1145, CLAS 1750H, LATN 1110H, and with instructor permission for those who are very advanced in Latin: LATN 2080F and LATN 2090I.

Greek and Sanskrit

Four Sanskrit courses at any level ¹	4
Four Greek courses on the 1000-level or above, at least one of which is to be: ²	4
GREK 1810 Greek Literature Survey to 450 BCE or GREK 1820 Greek Literature Survey after 450 BCE	
One of the two Ancient Greek History Courses: Either	1
CLAS 1210 Mediterranean Culture Wars: Archaic Greek History, c. 1200 to 479 BC	
or	
CLAS 1220 The Fall of Empires and Rise of Kings: Greek History 478 to 323 BC or HIST 1200B The Fall of Empires and Rise of Kings: Greek History to 478 to 323 BCE	
Two additional courses in Classics (including GREK 0300 and GREK 0400) or related areas (such as Comparative Literature, Religious Studies, South Asian Studies, Early Cultures, etc.) to be approved by the concentration advisor. ³	2
One further course offered by the Department of Classics and designated "Classics and Beyond" or a DIAP course offered by the department of Classics.	1
Total Credits	12

¹ Options offered include: SANS 0100, SANS 0200, SANS 0300, SANS 0400, SANS 1080 and SANS 1600.

² Options offered include, but are not limited to: GREK 1110B, GREK 1110S, GREK 1111B, GREK 1150, GREK 1810 and with instructor permission for those who are very advanced in Greek: GREK 2020E and GREK 2110K.

³ Options offered by the Department of Classics include, but are not limited to: CLAS 0150, CLAS 0660, CLAS 0765, CLAS 0771, CLAS 0780, CLAS 0855, CLAS 0900, CLAS 1120G, CLAS 1120Q, CLAS 1120U, CLAS 1145, CLAS 1310, CLAS 1320, CLAS 1750H, CLAS 1750U, LATN 0100, LATN 0110, LATN 0200, LATN 0300, LATN 0400, LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, and LATN 1930B.

Latin and Sanskrit

Four Sanskrit courses at any level ¹	4
Four Latin courses on the 1000-level or above, at least one of which is to be: ²	4
LATN 1810 Survey of Republican Literature or LATN 1820 Survey of Roman Literature II: Empire	
One of the two Roman Ancient History courses Either	1
CLAS 1310 Roman History I: The Rise and Fall of an Imperial Republic	
Or	
CLAS 1320 Roman History II: The Roman Empire and Its Impact or HIST 1201B Roman History II: The Empire	
Two additional courses in Classics (including LATN 0300 and LATN 0400) or related areas (such as Comparative Literature, Religious Studies, South Asian Studies, Early Cultures, etc.) to be approved by the concentration advisor ³	2
One further course offered by the Department of Classics and designated "Classics and Beyond" or a DIAP course offered by the department of Classics.	1
Total Credits	12

¹ Options offered include: SANS 0100, SANS 0200, SANS 0300, SANS 0400, SANS 1080 and SANS 1600.

² Options offered include, but are not limited to: LATN 1020D, LATN 1040B, LATN 1060G, LATN 1110F, LATN 1110H, LATN 1110P, LATN 1820, LATN 1930B, and with instructor permission for those who are very advanced in Latin: LATN 2080F and LATN 2090I.

³ Options offered by the Department of Classics include, but are not limited to: CLAS 0150, CLAS 0660, CLAS 0765, CLAS 0771, CLAS 0780, CLAS 0855, CLAS 0900, CLAS 1120G, CLAS 1120Q, CLAS 1120U, CLAS 1145, CLAS 1750H, CLAS 1750U, GREK 0100, GREK 0110, GREK 0200, GREK 0300, GREK 0400, GREK 1110H, GREK 1110B, GREK 1110S, GREK 1111B, GREK 1150, and GREK 1810.

Honors

Students may earn honors in the concentration by presenting a satisfactory thesis, for the preparation of which they will ordinarily enroll in the relevant 1990 courses; these courses may not be used to satisfy the standard requirements for a concentration. In order to qualify, the candidate for honors in the Department of Classics ordinarily will be entering his/her seventh semester of study and must have an "A" average (3.50 or higher on a 4.00 scale) in the concentration.

Cognitive Neuroscience

Cognitive neuroscience is the study of higher cognitive functions in humans and their underlying neural bases. It is an integrative area of study drawing primarily from cognitive science, psychology, neuroscience, and linguistics. There are two broad directions that can be taken in this concentration - one is behavioral/experimental and the other is computational/modeling. In both, the goal is to understand the nature of cognition from a neural perspective. The standard concentration for the Sc.B. degree requires courses on the foundations, systems level, and integrative aspects of cognitive neuroscience as well as laboratory and elective courses that fit within a particular theme or category such as general cognition, perception, language development or computational/modeling. Concentrators must also complete a senior seminar course or an independent research course. Students may also participate in the work of the Brown Institute for Brain Science, an interdisciplinary program that unites ninety faculty from eleven departments.

Standard Program for the AB degree (Effective Class of 2019)

The A.B. concentration requires 12 courses. The Sc.B concentration additionally requires 1 laboratory course and 4 approved science courses, totaling to a total of 17 required courses.

Common Core

The introductory course, "CLPS 0010 Mind, Brain, and Behavior," surveys the broad territory of the scientific study of the mind, as uniquely represented by our department. The course maps the breadth of the science of the mind, focusing on fascinating questions, garnered insights, common commitments, and successful techniques and approaches. The course could be taken by students interested in the CLPS concentrations or as an introductory survey course at the beginning of one's college career. AP Psychology is not an acceptable equivalent for CLPS 0010.

Careers in Cognitive Neuroscience and related fields requires familiarity with statistics. Therefore, the Cognitive Neuroscience concentration requires a course in Quantitative Methods (CLPS 0900). CLPS 0900 is a prerequisite for most of the laboratory courses, so concentrators should plan to take this course by their fourth semester. The department does not grant concentration credit of AP Statistics, regardless of score. Students who feel that CLPS 0900 is too elementary can complete an approved alternative course (e.g., APMA 1650, CLPS 2906, PHP 1501, ECON 1629, APMA 1660).

Foundation

To provide students with a solid foundation of knowledge in their area of concentration and to minimize redundancy, the Cognitive Neuroscience

concentration requires four foundation courses in Neuroscience, Cognitive Neuroscience, Cognitive Neuropsychology, and Computational Methods.

Electives

Each concentrator will take four additional courses that allow the student to go into depth in some of the relevant topics. Three of these courses must be 1000-level courses. Some courses designed to count as electives will often have foundation courses as prerequisites and may include laboratory courses, content courses, or seminars.

Research Methods

Another element in the Cognitive Neuroscience concentration is a research methods course that builds on the introductory statistics course (which will be a prerequisite) but exposes students to a variety of topics in research of the mind: to empirical methods (e.g., surveys, chronometry, eye tracking, brain imaging), to common designs (e.g., factorial experimental, correlational, longitudinal), to research ethics, and to best practices of literature review. Alternatively, students may take an approved laboratory course.

Capstone

Concentrators will additionally take either a seminar course or an independent research course to serve as their capstone experience.

Additional requirements for Sc.B.

In line with university expectations, the Sc.B. requirements include a greater number of courses and especially science courses. The definition of "science" is flexible. A good number of these courses will be outside of CLPS, but several CLPS courses might fit into a coherent package as well. In addition, the Sc.B. degree also requires a lab course to provide these students with in-depth exposure to research methods in a particular area of the science of the mind.

Honors Requirement

An acceptable upper level Research Methods, for example CLPS 1900 or an acceptable Laboratory course (see below) will serve as a requirement for admission to the Honors program in Cognitive Neuroscience.

FOR DETAILED UPDATES, PLEASE REFER TO THE COGNITIVE, LINGUISTIC, AND PSYCHOLOGICAL SCIENCES (CLPS) UNDERGRADUATE PAGE.

Requirements for the A.B. degree

STANDARD PROGRAM FOR THE A.B. DEGREE

CLPS 0010	Mind, Brain and Behavior: An Interdisciplinary Approach	1
CLPS 0900	Statistical Methods	1
One approved course	in Cognitive Neuroscience, such as:	1
CLPS 0150	Behavioral Neuroscience: Introduction to Biological Psychiatry	
CLPS 0400	Cognitive Neuroscience	
CLPS 0450	Brain Damage and the Mind	
One approved course	in Neuroscience, such as:	1
NEUR 0010	The Brain: An Introduction to Neuroscience	
NEUR 1020	Principles of Neurobiology	
NEUR 1030	Neural Systems	
One approved course	in Cognitive Neuropsychology, such as:	1
CLPS 0200	Human Cognition	
CLPS 0450	Brain Damage and the Mind	
CLPS 1420	Cognitive Neuropsychology	
One approved course	in Computational Methods, such as:	1
CLPS 0950	Introduction to programming	
CLPS 1291	Computational Methods for Mind, Brain and Behavior	
CLPS 1492	Computational Cognitive Neuroscience	

CLPS 1950	Deep Learning in Brains, Minds
CSCI 0111	Computing Foundations: Data
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science
NEUR 1440	Mechanisms and Meaning of Neural Dynamics
NEUR 1630	Big Data Neuroscience Ideas Lab
NEUR 1680	Computational Neuroscience

Four Approved Electives: 4

Any 1000-level course in CLPS or NEUR that is not being used to fulfill another requirement and fits with a unified theme is acceptable. Themes could be any of the foundation areas or some other theme that has three available 1000-level courses, for example, language, developmental or decision-making. Courses outside CLPS and NEUR may also be acceptable if they fit with the unified theme.

One Independent Study or Approved Seminar, such as: 1

Acceptable Independent Research Courses: CLPS 1980 or NEUR 1970

Acceptable seminars: Any 1000-level seminar in CLPS or NEUR

Research Methods: 1

CLPS 1900 Research Methods And Design

CLPS 1901 Research Methods

Acceptable Laboratory courses: Any 1000-level course in CLPS or NEUR. Laboratory courses outside of CLPS or NEUR are not acceptable

Total Credits 12

Requirements for the Sc.B. degree

The Sc.B. requires all twelve of the courses required by the AB, above. 12

Plus five additional courses as outlined, below:

One Approved Laboratory Course, such as: 1

Any 1000-level laboratory course in CLPS

NEUR 1600 Experimental Neurobiology

NEUR 1650 Structure of the Nervous System

Laboratory courses outside of CLPS or NEUR are not acceptable

Four Approved Science Courses, such as: 4

Any 1000-level course in CLPS or NEUR

Any course that is acceptable for concentrations in APMA, BIOL, CHEM, CSCI, MATH or PHYS is acceptable as a science course

Total Credits 17

Cognitive Science

The field of Cognitive Science uses scientific methods of experimentation, computational modeling, and brain imaging to study mental abilities such as perception, action, memory, cognition, speech, and language, as well as the development and evolution of those processes. Students must become knowledgeable in four areas of emphasis: perception, cognition, language, and computational methods, as well as a set of methods relevant to Cognitive Science research. Students then create their own focus area of study, potentially integrating coursework from the Cognitive, Linguistic, and Psychological Sciences department with a diverse subset of fields including Computer Science, Neuroscience, Philosophy, Anthropology, Applied Math and Education. The A.B. program is primarily for students interested in studying human mental processes and acquiring a research orientation to the study of the mind. The Sc.B. program is designed for students who wish to develop a stronger background in Cognitive Science and requires students to engage in a specific research project in the focus area of their choosing. We

recommend that prospective concentrators register for one of the gateway courses and at least one other core course in their first or second year.

Concentration Requirements (Effective, Class of 2019)

The A.B. concentration requires 12 courses. The Sc.B. concentration additionally requires 1 laboratory course and 4 approved science courses, totaling to a total of 17 required courses.

Common Core

The introductory course, "CLPS 0010 Mind, Brain, and Behavior," surveys the broad territory of the scientific study of the mind, as uniquely represented by our department. The course maps the breadth of the science of the mind, focusing on fascinating questions, garnered insights, common commitments, and successful techniques and approaches. The course could be taken by students interested in the CLPS concentrations or as an introduction at the beginning of one's college career or as an integration after having completed a number of specialized courses in a particular concentration.

Careers in Cognitive Science and related fields requires familiarity with statistics. Therefore, the Cognitive Science concentration requires a course in Quantitative Methods (CLPS 0900). CLPS 0900 is a prerequisite for most of the laboratory courses, so concentrators should plan to take this course by their fourth semester. The department does not grant concentration credit of AP Statistics, regardless of score. Students who feel that CLPS 0900 is too elementary can complete an approved alternative course (e.g., APMA 1650, CLPS 2906).

Foundation

To provide students with a solid foundation of knowledge in their area of concentration and to minimize redundancy, the Cognitive Science concentration requires four foundation courses in Human Cognition, Perception, Language, and Computational Methods.

Electives

Each concentrator will take four additional courses that allow the student to go into depth in some of the relevant topics. These electives must include at least two courses in one of the four foundation topics (i.e., Human Cognition, Perception, Language, and Computational Methods).

The courses designed to count as electives will often have foundation courses as prerequisites and may include laboratory courses, content courses, or seminars.

Research Methods and Capstone

Another element in the Cognitive Science concentration is a research methods course that builds on the introductory statistics course (which will be a prerequisite) but exposes students to a variety of topics in research of the mind: to empirical methods (e.g., surveys, chronometry, eye tracking, brain imaging), to common designs (e.g., factorial experimental, correlational, longitudinal), to research ethics, and to best practices of literature review. Concentrators will additionally take either a seminar course or an independent research course to serve as their capstone experience.

Additional requirements for Sc.B.

In line with university expectations, the Sc.B. requirements include a greater number of courses and especially science courses. The definition of "science" is flexible. A good number of these courses will be outside of CLPS, but several CLPS courses might fit into a coherent package as well. In addition, the Sc.B. degree also requires a lab course to provide these students with in-depth exposure to research methods in a particular area of the science of the mind.

Honors Requirement

The Honors Program in Cognitive Science gives undergraduates a special opportunity to carry out a research project under the direction of a faculty member. The program also provides the opportunity for outstanding senior concentrators to receive their undergraduate degree with Honors.

Participation in the program allows students to develop an understanding of research and acquire research skills and background.

Candidates for Honors in Cognitive Science must meet all of the requirements of the concentration as described above. Candidates submit their application for the program in semester 7. We encourage students to seek out a faculty mentor prior to semester 7 as well as complete certain course requirements before semester 7.

FOR DETAILED UPDATES, PLEASE REFER TO THE COGNITIVE, LINGUISTIC, AND PSYCHOLOGICAL SCIENCES (CLPS) UNDERGRADUATE PAGE.

Requirements for the A.B. degree

STANDARD PROGRAM FOR THE A.B. DEGREE

Two Common Core Courses		
CLPS 0010	Mind, Brain and Behavior: An Interdisciplinary Approach	1
CLPS 0900	Statistical Methods	1
Four Approved Foundation Courses ¹		
One approved course in Human Cognition, such as:		1
CLPS 0200	Human Cognition	
CLPS 0220	Making Decisions	
One approved course in Perception:		1
CLPS 0500	Perception and Mind	
One approved course in Language, such as:		1
CLPS 0800	Language and the Mind	
LING 0100	Introduction to Linguistics	
One approved course in Computational Methods, such as:		1
CLPS 0950	Introduction to programming	
CLPS 1291	Computational Methods for Mind, Brain and Behavior	
Four Approved Electives related to Cognitive Science, such as: ²		4
APMA 1690	Computational Probability and Statistics	
BIOL 0480	Evolutionary Biology	
CLPS 0540	Simulating Reality: The (Curious) History and Science of Immersive Experiences	
CLPS 0550	Science of Consciousness	
CLPS 1100	Animal Cognition	
CLPS 1150	Memory and the Brain	
CLPS 1210	Human Memory and Learning	
CLPS 1470	Mechanisms of Motivated Decision Making	
CLPS 1500	Perception and Action	
CLPS 1610	Cognitive Development	
CLPS 1660	Learning Compositional Language	
CLPS 1800	Language Processing	
CLPS 1850	Language Processing in Humans and Machines	
CSCI 1010	Theory of Computation	
CSCI 1480	Building Intelligent Robots	
ENGN 1580	Communication Systems	
PHIL 1800	Philosophy of Mind	
One Independent Study or Approved Seminar, such as: ³		1
CLPS 1400	The Neural Bases of Cognition	
CLPS 1480B	Cognitive Aging and Dementia	
CLPS 1480C	Cognitive Control Functions of the Prefrontal Cortex	
CLPS 1495	Affective Neuroscience	
CLPS 1560	Visually-Guided Action and Cognitive Processes	
One Research Methods Course		1
CLPS 1900	Research Methods And Design	

CLPS 1901	Research Methods	
Total Credits		12

Requirements for the Sc.B. degree

STANDARD PROGRAM FOR THE Sc.B. DEGREE

Two Common Core Courses		
CLPS 0010	Mind, Brain and Behavior: An Interdisciplinary Approach	1
CLPS 0900	Statistical Methods	1
Four Approved Foundation Courses ¹		
One approved course in Human Cognition, such as:		1
CLPS 0200	Human Cognition	
CLPS 0220	Making Decisions	
One approved course in Perception		1
CLPS 0500	Perception and Mind	
One approved course in Language, such as:		1
LING 0100	Introduction to Linguistics	
CLPS 0800	Language and the Mind	
One approved course in Computational Methods, such as:		1
CLPS 0950	Introduction to programming	
CLPS 1291	Computational Methods for Mind, Brain and Behavior	
Four Approved Electives, such as: ²		4
APMA 1690	Computational Probability and Statistics	
BIOL 0480	Evolutionary Biology	
CLPS 0540	Simulating Reality: The (Curious) History and Science of Immersive Experiences	
CLPS 0550	Science of Consciousness	
CLPS 1100	Animal Cognition	
CLPS 1150	Memory and the Brain	
CLPS 1210	Human Memory and Learning	
CLPS 1470	Mechanisms of Motivated Decision Making	
CLPS 1500	Perception and Action	
CLPS 1610	Cognitive Development	
CLPS 1660	Learning Compositional Language	
CLPS 1800	Language Processing	
CLPS 1850	Language Processing in Humans and Machines	
CSCI 1010	Theory of Computation	
CSCI 1480	Building Intelligent Robots	
ENGN 1580	Communication Systems	
PHIL 1800	Philosophy of Mind	
One Independent Study or Approved Seminar, such as: ³		1
CLPS 1400	The Neural Bases of Cognition	
CLPS 1480C	Cognitive Control Functions of the Prefrontal Cortex	
CLPS 1495	Affective Neuroscience	
CLPS 1560	Visually-Guided Action and Cognitive Processes	
CLPS 1990	Senior Seminar in Cognitive Science	
One Research Methods Course		1
CLPS 1900	Research Methods And Design	
CLPS 1901	Research Methods	
One Approved Laboratory Course, such as: ⁴		1
CLPS 1192	Experimental Analysis of Animal Behavior and Cognition	
CLPS 1193	Laboratory in Genes and Behavior	
CLPS 1492	Computational Cognitive Neuroscience	
CLPS 1510	Laboratory in Auditory Perception	

CLPS 1591	Experimental Analysis of Vision for Action and Vision for Perception: Are There Separate Mechanisms?	
CLPS 1791	Laboratory in Social Cognition	
CLPS 1890	Laboratory in Psycholinguistics	
Four Approved Science Courses, such as: ⁵		4
BIOL 0200	The Foundation of Living Systems	
BIOL 0800	Principles of Physiology	
CHEM 0350	Organic Chemistry I	
CSCI 1430	Computer Vision	
ENGN 1220	Neuroengineering	
MATH 0100	Single Variable Calculus, Part II	
NEUR 1030	Neural Systems	
NEUR 1040	Introduction to Neurogenetics	
PHYS 0030	Basic Physics A	
Total Credits		17

¹ See the current list of approved [Foundation courses](#) on CLPS Cognitive Neuroscience page.

² See the current list of approved [Electives](#) on CLPS Cognitive Neuroscience page.

³ See the current list of approved [Seminars](#) on the CLPS Cognitive Neuroscience page.

⁴ See the current list of approved [Laboratory courses](#) on the CLPS Cognitive Neuroscience page.

⁵ See sample [Science courses sets](#) on the CLPS Cognitive Neuroscience page.

Comparative Literature

The concentration in Comparative Literature enables students to study an illustrative range of literary topics and to develop a focused critical understanding of how cultures differ from one another and what those differences mean. Our courses provide opportunities to engage with literary works across linguistic and cultural boundaries, exploring the traditions and innovations of the literatures of the world.

In the spirit of Brown's Open Curriculum, a concentration in Comparative Literature affords great academic freedom. Advanced literature courses from any literature department at Brown count for concentration credit. Any language—ancient or modern—supported at Brown may form part of a Comparative Literature concentration program. All students take a course in literary theory and have the opportunity to complete a senior essay.

There are three concentration tracks and requirements:

- Track 1: Comparative Literature in Two Languages
- Track 2: Comparative Literature in Three Languages
- Track 3: Literary Translation

Genre and Period Requirements for all concentrators:

- One course in each literary genre (poetry, narrative, and drama/film)
- Courses must cover at least three different historical periods (such as, Antiquity; Middle Ages; Renaissance/Early Modern; Enlightenment; Modern: 19th-21st centuries).

Track 1: Concentration in Comparative Literature in two languages

Requirements

COLT 1210	Introduction to the Theory of Literature	1
TWO literature courses taught above the 1000-level in the first chosen literature. (Courses may be taken in any literature department, and may fall under such courses codes as COLT, ENGL, FREN, HISP, CHIN, RUSS, GRMN, etc.)		2

TWO literature courses taught above the 1000-level in the second chosen literature. (Courses may be taken in any literature department, and may fall under such courses codes as COLT, ENGL, FREN, HISP, CHIN, RUSS, GRMN, etc.)

FIVE electives. Courses taught in Comparative Literature and other literature courses at any level (below or above 1000) may satisfy this requirement.

Total Credits

2

5

10

Examples of courses that may fulfill the requirements, above, include but are not limited to the following. Students are encouraged to discuss class choices with their advisor.

COLT 0510C	The World of Lyric Poetry
COLT 0510F	Fidel Castro and Che Guevara, The Men and the Myths
COLT 0510K	The 1001 Nights
COLT 0510P	Reading the Renaissance
COLT 0610D	Rites of Passage
COLT 0610Q	Before Wikipedia
COLT 0710C	Introduction to Scandinavian Literature
COLT 0710I	New Worlds: Reading Spaces and Places in Colonial Latin America
COLT 0710N	A Comparative Introduction to the Literatures of the Americas
COLT 0710X	Fan Fiction
COLT 0710Z	Comedy from Athens to Hollywood
COLT 0711H	The Arabic Novel
COLT 0711O	Off the Beaten Path: The Diversity of Modern Japanese Literature
COLT 0711Q	Writing Love in Korean Literature
COLT 0810H	How Not to Be a Hero
COLT 0810I	Tales and Talemakers of the Non-Western World
COLT 0810L	The Pursuit of Happiness
COLT 0810M	Uncanny Tales: Narratives of Repetition and Interruption
COLT 0811I	Classical Mythology and the Western Tradition
COLT 0812O	Reading Art in Literature
COLT 0812W	The Epic Tradition: from Homer to Milton
COLT 1210	Introduction to the Theory of Literature
COLT 1310G	Silk Road Fictions
COLT 1310J	The Arab Renaissance
COLT 1310N	Global Modernism and Crisis
COLT 1410S	Classical Tragedy
COLT 1420E	The Nineteenth-Century Novel (ENGL 1561I)
COLT 1420F	Fantastic and Existentialist Literatures of Argentina, Uruguay and Brazil
COLT 1420O	Proust, Joyce and Faulkner
COLT 1421V	Modernisms North and South: Ulysses in Dublin, Paris, and Buenos Aires
COLT 1422L	The Modernist Novel: Alienation and Narration
COLT 1422M	Reading the Short Story
COLT 1430B	Art and Exemplarity in Medieval and Early Modern Literature
COLT 1430D	Critical Approaches to Chinese Poetry
COLT 1430I	Poetry of Europe: Montale, Celan, Hill
COLT 1431B	Modern Arabic Poetry
COLT 1431C	Poets, Poetry, and Politics
COLT 1431F	Reading Modernist Poetry

COLT 1431H	Women Writing Epic (CLAS 1930F)
COLT 1440P	Nationalism and Transnationalism in Film and Fiction
COLT 1440U	The Listener (Literature, Theory, Film)
COLT 1440X	Shéhérazades : Depicting the "Orientale" in Modern French Culture
COLT 1610B	Irony
COLT 1610K	Literature and Multilingualism (GRMN 1340N)
COLT 1610V	The Promise of Being: Heidegger for Beginners
COLT 1710C	Literary Translation Workshop
COLT 1710D	Exercises in Literary Translation
COLT 1810G	Fiction and History
COLT 1810N	Freud: Writer and Reader
COLT 1810P	Literature and Medicine
COLT 1811L	Travel, Tourism, Trafficking through the Ages
COLT 1812A	Literatures of Immigration
COLT 1813M	Making a List
COLT 1813N	Early Modern Women's Writing
COLT 1814S	The Balkans, Europe's Other?: Literature, Film, History
COLT 1814U	Politics of Reading
COLT 1815R	Germans and Jews (GRMN 1340Y)
COLT 1815U	Encountering Monsters in Comparative Literature
COLT 1815W	How to Do Things with Modernism (HMAN 1976F)
COLT 2650W	Vision and Visualization in Literature: The Rhetoric of Enargeia (CLAS 2110K)
COLT 2720C	Literary Translation
COLT 2720D	Translation: Theory and Practice
COLT 2820A	New Directions for Comparative Literature
COLT 2820M	Discourses of the Senses
COLT 2821S	Historical Form
COLT 2822O	Literature and Philosophy: Case Studies of a Vexed Relationship (GRMN 2662Q)

Track 2: Concentration in Comparative Literature in three languages

Requirements

COLT 1210	Introduction to the Theory of Literature	1
TWO literature courses taught above the 1000-level in the first chosen literature. (Courses may be taken in any literature department, and may fall under such courses codes as COLT, ENGL, FREN, HISP, CHIN, RUSS, GRMN, etc.)		2
TWO literature courses taught above the 1000-level in the second chosen literature. (Courses may be taken in any literature department, and may fall under such courses codes as COLT, ENGL, FREN, HISP, CHIN, RUSS, GRMN, etc.)		2
TWO literature courses taught above the 1000-level in the third chosen literature. (Courses may be taken in any literature department, and may fall under such courses codes as COLT, ENGL, FREN, HISP, CHIN, RUSS, GRMN, etc.)		2
THREE electives. Courses taught in Comparative Literature and other literature courses at any level (below or above 1000) may satisfy this requirement.		3

Total Credits

10

Examples of courses that may fulfill the requirements, above, include but are not limited to the following. Students are encouraged to discuss class choices with their advisor.

COLT 0510C	The World of Lyric Poetry
COLT 0510F	Fidel Castro and Che Guevara, The Men and the Myths
COLT 0510K	The 1001 Nights
COLT 0510P	Reading the Renaissance
COLT 0610D	Rites of Passage
COLT 0610Q	Before Wikipedia
COLT 0710C	Introduction to Scandinavian Literature
COLT 0710I	New Worlds: Reading Spaces and Places in Colonial Latin America
COLT 0710N	A Comparative Introduction to the Literatures of the Americas
COLT 0710X	Fan Fiction
COLT 0710Z	Comedy from Athens to Hollywood
COLT 0711H	The Arabic Novel
COLT 0711O	Off the Beaten Path: The Diversity of Modern Japanese Literature
COLT 0711Q	Writing Love in Korean Literature
COLT 0810H	How Not to Be a Hero
COLT 0810I	Tales and Talemakers of the Non-Western World
COLT 0810L	The Pursuit of Happiness
COLT 0810M	Uncanny Tales: Narratives of Repetition and Interruption
COLT 0811I	Classical Mythology and the Western Tradition
COLT 0812O	Reading Art in Literature
COLT 0812W	The Epic Tradition: from Homer to Milton
COLT 1210	Introduction to the Theory of Literature
COLT 1310G	Silk Road Fictions
COLT 1310J	The Arab Renaissance
COLT 1310N	Global Modernism and Crisis
COLT 1410S	Classical Tragedy
COLT 1420E	The Nineteenth-Century Novel (ENGL 1561I)
COLT 1420F	Fantastic and Existentialist Literatures of Argentina, Uruguay and Brazil
COLT 1420O	Proust, Joyce and Faulkner
COLT 1421V	Modernisms North and South: Ulysses in Dublin, Paris, and Buenos Aires
COLT 1422L	The Modernist Novel: Alienation and Narration
COLT 1422M	Reading the Short Story
COLT 1430B	Art and Exemplarity in Medieval and Early Modern Literature
COLT 1430D	Critical Approaches to Chinese Poetry
COLT 1430I	Poetry of Europe: Montale, Celan, Hill
COLT 1431B	Modern Arabic Poetry
COLT 1431C	Poets, Poetry, and Politics
COLT 1431F	Reading Modernist Poetry
COLT 1431H	Women Writing Epic (CLAS 1930F)
COLT 1440P	Nationalism and Transnationalism in Film and Fiction
COLT 1440U	The Listener (Literature, Theory, Film)
COLT 1440X	Shéhérazades : Depicting the "Orientale" in Modern French Culture
COLT 1610B	Irony
COLT 1610K	Literature and Multilingualism (GRMN 1340N)
COLT 1610V	The Promise of Being: Heidegger for Beginners

COLT 1710C	Literary Translation Workshop
COLT 1710D	Exercises in Literary Translation
COLT 1810G	Fiction and History
COLT 1810N	Freud: Writer and Reader
COLT 1810P	Literature and Medicine
COLT 1811L	Travel, Tourism, Trafficking through the Ages
COLT 1812A	Literatures of Immigration
COLT 1813M	Making a List
COLT 1813N	Early Modern Women's Writing
COLT 1814S	The Balkans, Europe's Other?: Literature, Film, History
COLT 1814U	Politics of Reading
COLT 1815F	Memory, Commemoration, Testimony
COLT 1815R	Germans and Jews (GRMN 1340Y)
COLT 1815U	Encountering Monsters in Comparative Literature
COLT 1815W	How to Do Things with Modernism (HMAN 1976F)
COLT 2650W	Vision and Visualization in Literature: The Rhetoric of Enargeia (CLAS 2110K)
COLT 2720C	Literary Translation
COLT 2720D	Translation: Theory and Practice
COLT 2820A	New Directions for Comparative Literature
COLT 2820M	Discourses of the Senses
COLT 2821S	Historical Form
COLT 2822O	Literature and Philosophy: Case Studies of a Vexed Relationship (GRMN 2662Q)

Track 3: Concentration in Literary Translation Requirements

COLT 1210	Introduction to the Theory of Literature	1
Literary Translation (COLT 1710)		1
At least one course in linguistics (including COLT 2720 Literary Translation and history of the language courses). This may be taken at any level.		1
At least one workshop in Literary Arts. This may be taken at any level.		1
TWO literature courses taught above the 1000-level in the first chosen literature. (Courses may be taken in any literature department, and may fall under such courses codes as COLT, ENGL, FREN, HISP, CHIN, RUSS, GRMN, etc.)		2
TWO literature courses taught above the 1000-level in the second chosen literature. (Courses may be taken in any literature department, and may fall under such courses codes as COLT, ENGL, FREN, HISP, CHIN, RUSS, GRMN, etc.)		2
TWO electives. Courses taught in Comparative Literature and other literature courses at any level (below or above 1000) may satisfy this requirement.		2
A senior thesis, eligible for Honors, consisting of substantial work in translation with a critical introduction. Completing a thesis is required of all Track 3 students but does not guarantee departmental honors.		

Total Credits 10

Examples of courses that may fulfill the requirements, above, include but are not limited to the following. Students are encouraged to discuss class choices with their advisor.

COLT 0510C	The World of Lyric Poetry
COLT 0510F	Fidel Castro and Che Guevara, The Men and the Myths
COLT 0510K	The 1001 Nights
COLT 0510P	Reading the Renaissance

COLT 0610D	Rites of Passage
COLT 0610Q	Before Wikipedia
COLT 0710C	Introduction to Scandinavian Literature
COLT 0710I	New Worlds: Reading Spaces and Places in Colonial Latin America
COLT 0710N	A Comparative Introduction to the Literatures of the Americas
COLT 0710X	Fan Fiction
COLT 0710Z	Comedy from Athens to Hollywood
COLT 0711H	The Arabic Novel
COLT 0711O	Off the Beaten Path: The Diversity of Modern Japanese Literature
COLT 0711Q	Writing Love in Korean Literature
COLT 0810H	How Not to Be a Hero
COLT 0810I	Tales and Talemakers of the Non-Western World
COLT 0810L	The Pursuit of Happiness
COLT 0810M	Uncanny Tales: Narratives of Repetition and Interruption
COLT 0811I	Classical Mythology and the Western Tradition
COLT 0812O	Reading Art in Literature
COLT 0812W	The Epic Tradition: from Homer to Milton
COLT 1210	Introduction to the Theory of Literature
COLT 1310G	Silk Road Fictions
COLT 1310J	The Arab Renaissance
COLT 1310N	Global Modernism and Crisis
COLT 1410S	Classical Tragedy
COLT 1420E	The Nineteenth-Century Novel (ENGL 1561I)
COLT 1420F	Fantastic and Existentialist Literatures of Argentina, Uruguay and Brazil
COLT 1420O	Proust, Joyce and Faulkner
COLT 1421V	Modernisms North and South: Ulysses in Dublin, Paris, and Buenos Aires
COLT 1422L	The Modernist Novel: Alienation and Narration
COLT 1422M	Reading the Short Story
COLT 1430B	Art and Exemplarity in Medieval and Early Modern Literature
COLT 1430D	Critical Approaches to Chinese Poetry
COLT 1430I	Poetry of Europe: Montale, Celan, Hill
COLT 1431B	Modern Arabic Poetry
COLT 1431C	Poets, Poetry, and Politics
COLT 1431F	Reading Modernist Poetry
COLT 1431H	Women Writing Epic (CLAS 1930F)
COLT 1440P	Nationalism and Transnationalism in Film and Fiction
COLT 1440U	The Listener (Literature, Theory, Film)
COLT 1440X	Shéhérazades : Depicting the "Orientale" in Modern French Culture
COLT 1610B	Irony
COLT 1610K	Literature and Multilingualism (GRMN 1340N)
COLT 1610V	The Promise of Being: Heidegger for Beginners
COLT 1710C	Literary Translation Workshop
COLT 1710D	Exercises in Literary Translation
COLT 1810G	Fiction and History
COLT 1810N	Freud: Writer and Reader
COLT 1810P	Literature and Medicine

COLT 1811L	Travel, Tourism, Trafficking through the Ages
COLT 1812A	Literatures of Immigration
COLT 1813M	Making a List
COLT 1813N	Early Modern Women's Writing
COLT 1814S	The Balkans, Europe's Other?: Literature, Film, History
COLT 1814U	Politics of Reading
COLT 1815F	Memory, Commemoration, Testimony
COLT 1815R	Germans and Jews (GRMN 1340Y)
COLT 1815U	Encountering Monsters in Comparative Literature
COLT 1815W	How to Do Things with Modernism (HMAN 1976F)
COLT 2650W	Vision and Visualization in Literature: The Rhetoric of Enargeia (CLAS 2110K)
COLT 2720C	Literary Translation
COLT 2720D	Translation: Theory and Practice
COLT 2820A	New Directions for Comparative Literature
COLT 2820M	Discourses of the Senses
COLT 2821S	Historical Form
COLT 2822O	Literature and Philosophy: Case Studies of a Vexed Relationship (GRMN 2662Q)

Notes:

Prerequisites in languages:

Students must demonstrate proficiency in the languages of their selected literatures. We recommend that prerequisite(s) for taking 1000-level courses in their languages be completed by Semester V.

Students working in non-European languages may be allowed more latitude; be sure to be sure to consult a concentration advisor about constructing an individualized plan.

Selecting literature courses in your language areas:

Readings must normally be in the original language. If English is one of your languages, courses need to be devoted chiefly to literature originally written in English.

Honors in Comparative Literature

Students in all tracks may earn honors in the concentration by successfully completing a thesis that is granted honors upon submission. Completing a thesis in any track does not guarantee departmental honors. Honors are granted upon the recommendation of the two thesis readers.

Tracks 1 & 2. Theses are analytical studies of literary topics, comparative in nature, based upon research, and usually between 50 and 100 pages. They are usually composed of 3 chapters, with an introduction and a conclusion. Students are expected to choose a topic that involves work in each of the literatures of their concentration in the original language.

Track 3. Theses consist of a substantial work in translation with a critical introduction outlining the method used and specific problems encountered, and commenting on the history of the original work together with other translations, if any.

(See detailed Guidelines for Honors Theses (<http://www.brown.edu/academics/comparative-literature/undergraduate-program/honors-thesis/>) in Comparative Literature on Departmental website).

Capstone option

Students in Tracks 1 & 2 not taking Honors are urged, but not required, to complete a senior essay, which may be less extensive in scope and length than the Honors thesis but which should constitute an integration of some aspect of their study.

Transfer of Credits:

Two courses per semester of study abroad may be applied to the concentration, up to a total of four courses (for two semesters abroad). A maximum of five courses from external venues (study abroad; transfer credits from other institutions, including summer study) may be applied to the concentration.

Joint or Double Concentration:

Joint or double concentration programs may also be arranged. Students may also combine a concentration in Comparative Literature with a teaching certificate in English or a modern language. A student interested in such a program should consult the advisor in the Education Department (<http://www.brown.edu/academics/education/>) and the advisor in Comparative Literature as early as possible (preferably by Semester V). In accordance with University policy, double concentrators are allowed a maximum overlap of two courses between concentrations.

Computational Biology

Computational biology involves the analysis and discovery of biological phenomena using computational tools, and the algorithmic design and analysis of such tools. The field is widely defined and includes foundations in computer science, applied mathematics, statistics, biochemistry, molecular biology, genetics, ecology, evolution, anatomy, neuroscience, and visualization.

Students may pursue a Bachelor of Arts or a Bachelor of Science. Students pursuing the ScB have the option of electing a concentration in Computational Biology with one of three focus areas: Computer Sciences, Biological Sciences, or Applied Mathematics & Statistics. Both programs require a senior capstone experience that pairs students and faculty in creative research collaborations.

Standard program for the A.B. degree

Please see the bottom of the page for more information regarding the University Writing Requirement, the Capstone Experience, and the Computational Biology Honors Program.

Prerequisites: 2

MATH 0100	Single Variable Calculus, Part II
or MATH 0170	Single Variable Calculus, Part II (Accelerated)
BIOL 0200	The Foundation of Living Systems

General Core Requirements: Biology 2

BIOL 0470	Genetics
BIOL 0280	Biochemistry
or BIOL 0500	Cell and Molecular Biology

General Core Requirements: Chemistry 1

CHEM 0330	Equilibrium, Rate, and Structure
or CHEM 0350	Organic Chemistry I

General Core Requirements: Computer Science 2-3

Choose one of the following groupings of introductory courses:

Group A

CSCI 0111 & CSCI 0112 & CSCI 0200	Computing Foundations: Data and Computing Foundations: Program Organization and Program Design with Data Structures and Algorithms

Group B

CSCI 0150 & CSCI 0200	Introduction to Object-Oriented Programming and Computer Science and Program Design with Data Structures and Algorithms

Group C

CSCI 0170 & CSCI 0200	Computer Science: An Integrated Introduction and Program Design with Data Structures and Algorithms

Group D

CSCI 0190	Accelerated Introduction to Computer Science (and any full-credit computer science course above CSCI 0190)

General Core Requirements: Probability & Statistics 1

APMA 1650	Statistical Inference I

OR

CSCI 1450	Advanced Introduction to Probability for Computing and Data Science

OR

MATH 1210	Probability

Comp Bio Core Course Requirements 4

CSCI 1810	Computational Molecular Biology
APMA 1080	Inference in Genomics and Molecular Biology

AND two of the following:

APMA 1660	Statistical Inference II
APMA 1690	Computational Probability and Statistics
BIOL 1430	Foundations of Population Genetics
BIOL 1435	Computational Methods for Studying Demographic History with Molecular Data
BIOL 1465	Human Population Genomics
BIOL 1555	Methods in Informatics and Data Science for Health
CSCI 1420	Machine Learning
CSCI 1470	Deep Learning
CSCI 1820	Algorithmic Foundations of Computational Biology

Additional course with Director approval

Capstone Experience

Students enrolled in the computational biology concentration will complete a research project in their senior year under faculty supervision (i.e: BIOL 1950/1960, CSCI 1970, APMA 1970). The themes of such projects evolve with the field and the technology, but should represent a synthesis of the various specialties of the program. The requirements are either one semester of reading and research with a CCMB Faculty member or approved advisor, or a 2000-level Computational Biology course.

Total Credits 12-13

Standard program for the Sc.B. degree

Please see the bottom of the page for more information regarding the University Writing Requirement, the Capstone Experience, and the Computational Biology Honors Program.

Prerequisites 2

MATH 0100	Single Variable Calculus, Part II (or equivalent)
or MATH 0170	Single Variable Calculus, Part II (Accelerated)
BIOL 0200	The Foundation of Living Systems (or equivalent)

General Core Course Requirements: Biology 2

BIOL 0470	Genetics (prerequisite BIOL 0200 or equivalent)
BIOL 0280	Biochemistry
or BIOL 0500	Cell and Molecular Biology

General Core Requirements: Chemistry 1

CHEM 0330	Equilibrium, Rate, and Structure
or CHEM 0350	Organic Chemistry I

General Core Requirements: Computer Science 3-4

CSCI 0220	Introduction to Discrete Structures and Probability

AND complete one of the following groupings of introductory courses:

Group A	
CSCI 0111 & CSCI 0112 & CSCI 0200	Computing Foundations: Data and Computing Foundations: Program Organization and Program Design with Data Structures and Algorithms ¹
Group B	
CSCI 0150 & CSCI 0200	Introduction to Object-Oriented Programming and Computer Science and Program Design with Data Structures and Algorithms
Group C	
CSCI 0170 & CSCI 0200	Computer Science: An Integrated Introduction and Program Design with Data Structures and Algorithms
Group D	
CSCI 0190	Accelerated Introduction to Computer Science (and any full-credit computer science course above CSCI 0190.)

General Core Requirements: Probability & Statistics 1

APMA 1650	Statistical Inference I
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science
or MATH 1210	Probability

General Core Requirements: Computational Biology

CSCI 1810	Computational Molecular Biology	1
APMA 1080	Inference in Genomics and Molecular Biology	1

Capstone Experience 1

Students enrolled in the computational biology concentration will complete a research project in their senior year under faculty supervision (i.e: BIOL 1950/1960, CSCI 1970, APMA 1970). The themes of such projects evolve with the field and the technology, but should represent a synthesis of the various specialties of the program. The requirements are either one semester of reading and research with a CCMB Faculty member or approved advisor, or a 2000-level Computational Biology course.

Six Courses in one of the following 3 tracks 6

Computer Science Track:

Three of the following:

CSCI 1230	Introduction to Computer Graphics
CSCI 1270	Database Management Systems
CSCI 1410	Artificial Intelligence
CSCI 1420	Machine Learning
CSCI 1470	Deep Learning
CSCI 1550	Probabilistic Methods in Computer Science
CSCI 1570	Design and Analysis of Algorithms

or other Computer Science courses approved by the concentration advisor.

AND three of the following:

APMA 1660	Statistical Inference II
APMA 1690	Computational Probability and Statistics
BIOL 1430	Foundations of Population Genetics
BIOL 1435	Computational Methods for Studying Demographic History with Molecular Data
BIOL 1465	Human Population Genomics
CSCI 0320 & CSCI 0330	Introduction to Software Engineering and Introduction to Computer Systems

CSCI 1820	Algorithmic Foundations of Computational Biology

PHP 2620	Statistical Methods in Bioinformatics, I

Biological Sciences track

At least four courses comprising a coherent theme in one of the following areas: Biochemistry, Ecology, Evolution, or Neurobiology.

AND two courses from the following:

APMA 1660	Statistical Inference II
APMA 1690	Computational Probability and Statistics
BIOL 1430	Foundations of Population Genetics
BIOL 1435	Computational Methods for Studying Demographic History with Molecular Data
BIOL 1465	Human Population Genomics
CSCI 1420	Machine Learning
CSCI 1470	Deep Learning
CSCI 1820	Algorithmic Foundations of Computational Biology
PHP 2620	Statistical Methods in Bioinformatics, I

Applied Mathematics & Statistics Track:

At least three courses from the following:

APMA 1660	Statistical Inference II
APMA 1690	Computational Probability and Statistics
CSCI 1410	Artificial Intelligence
APMA 0330 & APMA 0340	Methods of Applied Mathematics I and Methods of Applied Mathematics II
APMA 0350 & APMA 0360	Applied Ordinary Differential Equations and Applied Partial Differential Equations I
At least three of the following:	
APMA 1070	Quantitative Models of Biological Systems
BIOL 1430	Foundations of Population Genetics
BIOL 1435	Computational Methods for Studying Demographic History with Molecular Data
BIOL 1465	Human Population Genomics
CSCI 1420	Machine Learning
CSCI 1470	Deep Learning
CSCI 1820	Algorithmic Foundations of Computational Biology
PHP 2620	Statistical Methods in Bioinformatics, I

Total Credits 18-19

University Writing Requirement:

As part of Brown's writing requirement, all students must demonstrate that they have worked on their writing both in their general studies and their concentration. There are a number of ways for Computational Biology concentrators to fulfill these requirements:

- Enrolling in an independent study: CSCI 1970, BIOL 1950, APMA 1970
- Writing an Honors Thesis
- Taking a "WRIT" course in the final two years

Capstone Experience:

Students enrolled in the computational biology concentration will complete a research project in their senior year under faculty supervision. The themes of such projects evolve with the field and the technology, but should represent a synthesis of the various specialties of the program. The requirements are either one semester of reading and research with a CCMB Faculty member or approved advisor, or a 2000-level Computational Biology course.

Honors:

In order to be considered a candidate for honors, students will be expected to maintain an outstanding record, with no "C's" in concentration

courses and with a minimum of an "A-" average in concentration courses. In addition, students should take at least one semester, and are strongly encouraged to take 2 semesters, of reading and research with a CCMB faculty member or approved advisor. Students must submit to a public defense of their theses to be open to the CCMB community.

- Students seeking honors are advised to choose a Thesis Advisor prior to the end of their Junior year
- Students must complete the Registration form for Comp Bio and submit it to CCMB@BROWN.EDU

Any deviation from these rules must be approved by the director of undergraduate studies, in consultation with the student's advisor.

Computer Engineering

Computer engineers design computer hardware (from chips to servers), communication and network systems, and the smart digital devices that continue to revolutionize how we live and work. They also write the software to run these systems, constantly innovating to improve performance to meet our growing technological needs. They are at the forefront of cybersecurity, machine intelligence, networking, embedded systems, and robotics. They are proficient in both electrical engineering and computer science and are employed in every industry or field that requires computer hardware.

The Computer Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>). The Program Educational Objectives (PEOs) of the CE undergraduate program strives to prepare graduates who: (1) will succeed as leaders in the computer engineering and technology industry and in research and development positions within industry and academia; (2) will work effectively in a range of roles to solve problems with global, economic, environmental and societal impacts; and (3) will pursue lifelong learning through advanced degrees and professional development opportunities throughout their chosen career. The student outcomes of this program are the ABET (1) - (7) Student Outcomes as defined by the "ABET Criteria for Accrediting Engineering Programs" available online at <http://www.abet.org/accreditation-criteria-policies-documents/>

The Computer Engineering concentration shares much of the core with the other engineering programs, but is structured to include more courses in computer science, and a somewhat different emphasis in mathematics.

Note: For students still enrolled with the prior ScB in Engineering with tracks structure, please refer to the Archived Bulletin link on the left hand navigation for your requirements for the year you declared.

Please note that all students concentrating in Engineering need to file a concentration declaration using the University's ASK advising system. This declaration must be first reviewed by the relevant Concentration Advisor and then approved by the Director of Undergraduate Studies after assuring compliance with all relevant program and accreditation requirements.

Standard Program for the Sc.B. degree Mathematics Requirements

As mathematics is a cornerstone of all engineering programs, significant attention is given to early preparation in mathematics in engineering concentrations. It is recognized that students entering Brown will have different levels of mathematics preparation, and the following is offered as general guidance, though the actual choices of courses should be made in consultation with an exploratory advisor. MATH 0190 (or MATH 0100), followed by MATH 0200 (or MATH 0180) is the preferred sequence of courses to be taken in the freshman year. MATH 0100 and MATH 0180 offer content like that in MATH 0190 and MATH 0100, respectively, but the latter courses are highly recommended for future engineering students because they offer more examples of relevance to the field. Students who would prefer, or require, a more introductory level calculus course may start the sequence with MATH 0090. They may then take MATH 0200 (or MATH 0180) in the subsequent semester and in that case, would receive engineering concentration credit equivalent to that which they would have received having taken MATH 0190 and MATH 0200. However, students who find that the step up from MATH 0090 to MATH 0200 is too

challenging, have a choice to take MATH 0190 (or MATH 0100) upon completion of MATH 0090, but in this case, MATH 0090 would not carry engineering concentration credit and the student would then need to take MATH 0200 (or MATH 0180) in the sophomore year.

Students who have taken Advanced Placement (AP) calculus courses in high school and/or have shown proficiency through AP examinations may start the calculus sequence at a higher level than that suggested above. If a student has AP credit and accepts to use it, it then allows the student to place out of MATH 0190 (or MATH 0100). These students should enroll in the appropriate higher-level math course, e.g., MATH 0200 (or MATH 0180) or possibly MATH 0350 (a more theoretical course that covers similar material). Although it is impossible to place out of MATH 0200 or MATH 0350 with AP credit, we recognize that some students enter with an even higher level of preparation. Those students are advised to enroll in MATH 0520 (Linear Algebra), or MATH 0540 (Honors Linear Algebra), and take their second freshman mathematics course at a higher level, for example, MATH 1460 (Complex Analysis), MATH 1210 (Probability), or MATH 1220 (Mathematical Statistics). Alternatively, for some engineering concentrations, this second MATH credit requirement may be satisfied by taking a course from the Applied Mathematics Department, such as APMA 0350 (Applied Ordinary Differential Equations), APMA 0360 (Applied Partial Differential Equations), APMA 1650 (Statistical Inference) or APMA 1210 (Operations Research: Deterministic Models) if one of those courses listed is not taken for two APMA concentration credits. Details regarding the mathematics requirement for each concentration are listed in the corresponding programs.

Advanced Placement

Courses that have been taken at the secondary school level are typically only used for placement into the appropriate course level at Brown. The examples of how this can be done in mathematics are given above, and there are other instances (such as in selection of the appropriate introductory chemistry course) where AP credit is considered. It should be noted, however, that advanced placement credits cannot be used to substitute for any Engineering concentration requirements; they are instead used to ensure that students are placed into the correct level of courses.

Transfer Credits

Some students will also complete courses at other universities during the time they are Brown students (sometimes during summers while they are not in residence at Brown; sometimes during a junior semester abroad). Students who have successfully completed college courses elsewhere may apply to the University for transfer credit. (See the "Study Elsewhere" section of the University Bulletin for procedures). In addition to the general rules governing such transfers, there are specific rules governing courses that will be offered as satisfying Engineering concentration requirements.

If the course proposed for transfer credit is offered by another department at Brown (i.e., that it carries a course number that does not start with ENGN), then the equivalent of the course must be established by that other department. This is done by submitting a formal request through the ASK system (https://ask.brown.edu/transfer_credits/information/index). Once this approval has been received from the other department, the student's internal transcript will show the equivalence and the course in question can be shown in the Engineering concentration declaration as having been completed elsewhere. If the equivalence to a Brown course is not approved, then there may still be "unassigned credit" given for the course. In this case, the situation relative to how it does or does not count for concentration credit needs to be discussed with the Concentration Advisor. In rare cases, students may petition the Engineering Concentration Committee to use courses that do not have an equivalent offered at Brown in order to meet a concentration requirement. Substitutions of this nature can only be approved if the student's overall program meets published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses to meet relevant accreditation requirements. Students should consult their Concentration Advisor for assistance with drafting a petition. The decision whether to award concentration credit is made by majority vote of the Engineering Concentration Committee.

If the student wishes to transfer a course taken outside of Brown that would normally carry an Engineering course number, the sequence is a bit different. First, the student needs to fill out an Engineering Transfer Credit Approval Request (see <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad>)). This routes the request to the relevant Brown Engineering faculty member for approval. Once this has been obtained, then transfer approval is requested through the ASK system, as described above. This process ensures that the transcript will capture the equivalence of the externally completed course.

Substitutions for Required Courses

Students may petition the Engineering Concentration Committee to substitute a course in place of a defined concentration requirement. Such substitutions can only be approved if the student's modified program continues to meet the published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses needed to meet accreditation requirements. If the substitution involves taking an equal or higher level course in substantially the same area, whether at Brown or elsewhere, it can be approved by the Concentration Advisor without requiring a formal petition to the Concentration Committee. (For courses taken elsewhere, the credit must be officially transferred as described above.) Students wishing to make substitutions of a broader nature should consult their Concentration Advisor for assistance in drafting their petition to the Engineering Concentration Committee. Such petitions may be approved by a majority vote of the Committee.

1. Core Courses:

ENGN 0030	Introduction to Engineering	1
or ENGN 0031	Honors Introduction to Engineering	
or ENGN 0032	Introduction to Engineering: Design	
ENGN 0040	Engineering Statics and Dynamics	1
ENGN 0510	Electricity and Magnetism	1
ENGN 0520	Electrical Circuits and Signals	1
APMA 1650	Statistical Inference I	1
or APMA 1655	Honors Statistical Inference I	
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science	
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
or MATH 0100	Single Variable Calculus, Part II	
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
or MATH 0180	Multivariable Calculus	
or MATH 0350	Multivariable Calculus With Theory	1
CHEM 0330	Equilibrium, Rate, and Structure	1
or ENGN 0410	Materials Science	
or NEUR 0010	The Brain: An Introduction to Neuroscience	
APMA 0350	Applied Ordinary Differential Equations	1
or APMA 1170	Introduction to Computational Linear Algebra	
or APMA 1710	Information Theory	
or CSCI 0220	Introduction to Discrete Structures and Probability	
or CSCI 1570	Design and Analysis of Algorithms	
or MATH 1260	Complex Analysis	
Select one of the following series (other CSCI courses subject to approval):		2
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
and		
CSCI 0200	Program Design with Data Structures and Algorithms	

OR

CSCI 0170	Computer Science: An Integrated Introduction	
and		
CSCI 0200	Program Design with Data Structures and Algorithms	
OR		
CSCI 0190	Accelerated Introduction to Computer Science (plus one additional CSCI course subject to Concentration Advisor approval)	
OR		
CSCI 0111	Computing Foundations: Data ²	
and		
CSCI 0112	Computing Foundations: Program Organization	
and		
CSCI 0200	Program Design with Data Structures and Algorithms	
2. Upper-Level Computer Engineering Curriculum:		
ENGN 1570	Linear System Analysis	1
ENGN 1630	Digital Electronics Systems Design	1
ENGN 1640	Design of Computing Systems	1
MATH 0520	Linear Algebra	1
or MATH 0540	Linear Algebra With Theory	
One advanced Computer Engineering foundations course:		1
ENGN 1580	Communication Systems	
ENGN 1600	Design and Implementation of Digital Integrated Circuits	
ENGN 1610	Image Understanding	
ENGN 1620	Analysis and Design of Electronic Circuits	
ENGN 2530	Digital Signal Processing	
One advanced Computer Science course with significant systems programming:		1
CSCI 0330	Introduction to Computer Systems	
or CSCI 0300	Fundamentals of Computer Systems	
ENGN 0500	Digital Computing Systems	
CSCI 0320	Introduction to Software Engineering	
CSCI 1230	Introduction to Computer Graphics	
CSCI 1380	Distributed Computer Systems	
CSCI 1670	Operating Systems	
CSCI 1680	Computer Networks	
Select three upper-level Computer Engineering electives. At least one must be an ENGN course, and at least one must be a CSCI course. Note that some upper-level courses are not offered every year. Other 1000- or 2000-level ENGN and CSCI courses outside of the list below may also be approved by the Concentration Advisor if they have appropriate connections to Computer Engineering.		3
ENGN 1220	Neuroengineering	
ENGN 1450	Properties and Processing of Electronic Materials	
ENGN 1560	Applications in Microwave Communications	
ENGN 1580	Communication Systems	
ENGN 1590	Semiconductor Devices	
ENGN 1600	Design and Implementation of Digital Integrated Circuits	
ENGN 1610	Image Understanding	
ENGN 1620	Analysis and Design of Electronic Circuits	
ENGN 1650	Embedded Microprocessor Design ⁵	
ENGN 1690	Photonics Devices and Sensors	
ENGN 1930B	Biomedical Optics	
ENGN 1931A	Photovoltaics Engineering	

ENGN 1931F	Introduction to Power Engineering
ENGN 1931M	Industrial Machine Vision
ENGN 1931Y	Control Systems Engineering
ENGN 2500	Medical Image Analysis
ENGN 2501	Digital Geometry Processing
ENGN 2502	3D Photography
ENGN 2520	Pattern Recognition and Machine Learning
ENGN 2530	Digital Signal Processing
ENGN 2560	Computer Vision
ENGN 2620	Solid State Quantum and Optoelectronics
ENGN 2911X	Reconfigurable Computing for Machine/Deep Learning
ENGN 2912B	Scientific Programming in C++
ENGN 2912K	Mixed-Signal Electronic Design
ENGN 2912U	Coordinated Mobile Robotics
ENGN 2920F	Sensors and Actuators for Real Systems
CSCI 0320	Introduction to Software Engineering
CSCI 1230	Introduction to Computer Graphics
CSCI 1270	Database Management Systems
CSCI 1380	Distributed Computer Systems
CSCI 1410	Artificial Intelligence
CSCI 1420	Machine Learning
CSCI 1430	Computer Vision
CSCI 1470	Deep Learning
CSCI 1570	Design and Analysis of Algorithms
CSCI 1600	Real-Time and Embedded Software
CSCI 1660	Introduction to Computer Systems Security
CSCI 1670	Operating Systems
CSCI 1680	Computer Networks
CSCI 1730	Design and Implementation of Programming Languages
CSCI 1951R	Introduction to Robotics
3. Capstone Design ⁶	
ENGN 1650	Embedded Microprocessor Design ⁵
or ENGN 1000	Projects in Engineering Design I
or ENGN 1001	Projects in Engineering Design II

4. General Education Requirement: At least four approved courses must be taken in humanities and social sciences

Total Credits **21**

¹ Or Biology course beyond BIOL 0200 subject to Concentration Advisor approval

² Subject to approval by the Concentration Advisor, the third upper-level elective may optionally be chosen from another department, such as CLPS, NEUR, PHYS or CHEM, if it has a significant quantitative physical science emphasis.

³ CSCI 1952Y cannot be used as a CS elective due to its overlap with ENGN 1640, which is a required course.

⁴ Students wishing to go directly from CSCI 0111 (<https://bulletin.brown.edu/search/?P=CSCI%200111>) to CSCI 0200 (<https://bulletin.brown.edu/search/?P=CSCI%200200>) (without CSCI 0112 (<https://bulletin.brown.edu/search/?P=CSCI%200112>)) will need to successfully complete additional exercises to receive an instructor override code for CSCI 0200 (<https://bulletin.brown.edu/search/?P=CSCI%200200>).

⁵ ENGN 1650 cannot be counted as an elective and capstone simultaneously. It can only be either elective or capstone.

⁶ Subject to approval by the Concentration Advisor, an independent study course (ENGN 1972/ENGN 1973) may be used to fulfill the Engineering Capstone Design requirement. To qualify for such approval, the independent study project must: (1) contain a significant and definable

design component; (2) be based on the knowledge and skills acquired in earlier course work, (3) incorporate appropriate engineering standards; and (4) address multiple realistic constraints. To request approval, please complete the online form available at <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study/>)

Special Sc.B. Concentrations (non-accredited):

In addition to the standard programs described above, students may also petition the Engineering Concentration Committee to pursue a special engineering Sc.B. degree of their own design. Such special Sc.B. programs are not ABET-accredited. Students with a special concentration will receive an Sc.B. degree in engineering, but a specific area of specialization will not be noted on their transcript. A special Sc.B. concentration is intended to prepare graduates for advanced study in engineering or for professional practice, but in an area that is not covered by one of the existing Sc.B. programs. Accordingly, special concentration programs are expected to consist of a coherent set of courses with breadth, depth and rigor comparable to an accredited degree. A total of 21 engineering, mathematics, and basic science courses are required. The program must include at least 3 courses in mathematics, at least 2 courses in physical or life sciences; and at least 12 courses in engineering. At least five of the engineering courses must be upper level courses, and one must be a capstone design course or independent study, which must be advised or co-advised by a member of the regular engineering faculty. Note that not all Engineering courses may be used to meet Sc.B. requirements: for example, the courses not allowed to count toward the A.B. will not qualify. Petitions should be prepared in consultation with an engineering faculty advisor, who will submit the petition to the Engineering Concentration Committee. Petitions must include: (i) a statement of the objectives of the degree program, and an explanation of how the courses in the program meet these objectives; (ii) course descriptions for any courses in the program that are not part of standard Sc.B. Engineering concentrations; (iii) a detailed description of any independent study courses used for concentration credit, signed by the faculty advisor for this course; and (iv) an up-to-date internal transcript.

Professional Track

While we do not give course credit for internships, we officially recognize their importance via the optional Professional Tracks. The requirements for the professional tracks include all those of the standard tracks, as well as the following: Students must complete full-time professional experiences (or part-time experiences of equivalent total effort) doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts:

- Describe the organization you worked in and the nature of your responsibilities.
- Which courses were put to use in your work?
- Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your work experience?
- What are the topics from these courses that would have helped you if you had been more familiar with them?
- What topics would have been helpful in preparation for this work experience that you did not learn at Brown?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did something you would like to continue doing once you graduate? Explain.
- Would you recommend your work experience to other Brown students? Explain.

The reflective essays are subject to the approval of the student's Concentration Advisor.

Entry to the Professional Track requires a simple application form to be completed by the student and approved by the Concentration Advisor at the time of the concentration declaration. If the student has not yet declared a concentration, the form may be approved by the Chair of the Concentration Committee. The Concentration Advisor will certify that all Professional Track students have completed the necessary internships and will grant approval for the associated reflective essays. All other requirements remain identical to those in the standard tracks in the concentrations.

Degrees with Honors in Engineering

Honors are granted by the University to students whose work in a field of concentration has demonstrated superior quality and culminated in an 'Honors Thesis of Distinction.' Honors recipients in the School of Engineering must meet the following criteria: (1) Demonstrate a strong academic record (60% A's or "S with Distinction" in their concentration through the seventh semester); (2) Propose and execute an independent research project under the guidance of a faculty member; (3) Complete a written thesis to the satisfaction of the Honors Program Committee; (4) Give a scientific/technical presentation at the Undergraduate Research Symposium in the spring semester; and (5) Fulfill all deadlines for applying for or completing honors to the satisfaction of his/her research advisor and the Honors Program Committee.

Computer Science

Computer science is now a critical tool for pursuing an ever-broadening range of topics, from outer space to the workings of the human mind. In most areas of science and in many liberal arts fields, cutting-edge work depends increasingly on computational approaches. The undergraduate program at Brown is designed to combine breadth in practical and theoretical computer science with depth in specialized areas. These areas range from traditional topics, such as analysis of algorithms, artificial intelligence, databases, distributed systems, graphics, mobile computing, networks, operating systems, programming languages, robotics and security, to novel areas including games and scientific visualization.

Our requirements are built on a core set of foundation courses, each representing an essential area within computer science. Concentrators choose the upper-level courses that align with their interests. Students may not use more than two CSCI 1970 courses to complete the requirements for the Sc.B. and one CSCI 1970 course for the A.B. requirements.

For up-to-date information on our concentration requirements please see <https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-requirements-2024>. Please see <https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-handbook/> for additional information regarding our concentration requirements (including allowed substitutions and policies).

Requirements for the Standard Track of the Sc.B. degree

Prerequisites (0-3 courses)

Calculus prerequisite: students must complete or place out of second semester calculus.

MATH 0100	Single Variable Calculus, Part II
or MATH 0170	Single Variable Calculus, Part II (Accelerated)
or MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)

Concentration Requirements

Core-Computer Science:

Select one of the following introductory course Series: 2

Series A	
CSCI 0150 & CSCI 0200	Introduction to Object-Oriented Programming and Computer Science and Program Design with Data Structures and Algorithms

Series B

CSCI 0170 & CSCI 0200	Computer Science: An Integrated Introduction and Program Design with Data Structures and Algorithms

Series C

CSCI 0190	Accelerated Introduction to Computer Science

AND

an additional CS course not otherwise used to satisfy a concentration requirement; this course may be CSCI 0200, an intermediate-level course, or an advanced course Series D ¹

CSCI 0111 & CSCI 0112 & CSCI 0200	Computing Foundations: Data and Computing Foundations: Program Organization and Program Design with Data Structures and Algorithms

Introductory Math Foundations 1

CSCI 0220	Introduction to Discrete Structures and Probability
or APMA 1650	Statistical Inference I
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science
or MATH 1530	Abstract Algebra

Foundations Courses

ScB students must take one course from each foundation area.

Foundations Areas

a. Algorithms/Theory Foundations (Choose one) 1

CSCI 0500	Data Structures, Algorithms, and Intractability: An Introduction

CSCI 1010	Theory of Computation

CSCI 1550	Probabilistic Methods in Computer Science

CSCI 1570	Design and Analysis of Algorithms

b. AI/Machine Learning/Data Science Foundations 1

CSCI 1410	Artificial Intelligence

or CSCI 1420	Machine Learning

or CSCI 1430	Computer Vision

or CSCI 1460	Computational Linguistics

or CSCI 1470	Deep Learning

or CSCI 1951A	Data Science

c. Systems Foundations 1

CSCI 0300	Fundamentals of Computer Systems

or CSCI 0330	Introduction to Computer Systems

CSCI Electives 5

Five CSCI courses at the 1000 level ²

Four Additional Electives. These can include: 4

CSCI 0320	Introduction to Software Engineering

1000-level and 2000-level CSCI courses

Linear algebra (Math 0520 or 0540)

Approved 1000-level courses outside of CS (see the concentration handbook for the current list)

Up to three arts/humanities/policy courses

Capstone

A capstone taken in the senior year (from the list of approved capstone courses on the concentration handbook). The capstone may also be used to satisfy another requirement.

Total Credits 15

¹ Students wishing to go directly from CSCI 0111 to CSCI 0200 (without CSCI 0112) will need to successfully complete additional exercises to receive an instructor override code for CSCI 0200.

² None of these can be arts/humanities/policy courses [<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-handbook/>]

Requirements for the Standard Track of the A.B. degree

Concentration Requirements (10 courses)

Core Computer Science:

Select one of the following series: 2

Series A

CSCI 0150 & CSCI 0200 Introduction to Object-Oriented Programming and Computer Science and Program Design with Data Structures and Algorithms

Series B

CSCI 0170 & CSCI 0200 Computer Science: An Integrated Introduction and Program Design with Data Structures and Algorithms

Series C

CSCI 0190 Accelerated Introduction to Computer Science

AND

An additional CS course not otherwise used to satisfy a concentration requirement; this course may be CSCI 0200, an intermediate-level course, or an advanced course

Series D ¹

CSCI 0111 & CSCI 0112 & CSCI 0200 Computing Foundations: Data and Computing Foundations: Program Organization and Program Design with Data Structures and Algorithms

Introductory Math Foundations 1

CSCI 0220 Introduction to Discrete Structures and Probability
or APMA 1650 Statistical Inference I
or CSCI 1450 Advanced Introduction to Probability for Computing and Data Science

Foundations Courses

AB students must take one course from each foundation area

Foundation Areas

a. Algorithms/Theory Foundations (choose one) 1

CSCI 0500 Data Structures, Algorithms, and Intractability: An Introduction
CSCI 1010 Theory of Computation
CSCI 1550 Probabilistic Methods in Computer Science
CSCI 1570 Design and Analysis of Algorithms

b. AI/Machine Learning/Data Science Foundations 1

CSCI 1410 Artificial Intelligence
or CSCI 1420 Machine Learning
or CSCI 1430 Computer Vision
or CSCI 1460 Computational Linguistics
or CSCI 1470 Deep Learning
or CSCI 1951A Data Science

c. Systems Foundations 1

CSCI 0300 Fundamentals of Computer Systems
or CSCI 0320 Introduction to Software Engineering
or CSCI 0330 Introduction to Computer Systems

CSCI Electives 2

Two CSCI courses at the 1000 level. ²

Two additional electives. These can include: 2

CSCI 0320 Introduction to Software Engineering (if not used towards System Foundations)

1000-level and 2000-level CSCI courses

Linear algebra (Math 0520 or Math 0540)

One approved 1000-level course outside of CS (see the concentration handbook for the current list)

One course from a defined list of arts/humanities/policy courses

Capstone

A capstone taken in the senior year (from the list of approved capstone courses in the concentration handbook). The capstone may also be used to satisfy another requirement.

Total Credits 10

¹ Students wishing to go directly from CSCI 0111 to CSCI 0200 (without CSCI 0112) will need to successfully complete additional exercises to receive an instructor override code for CSCI 0200.

² Neither of these can be arts/humanities/policy courses [<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-handbook/>]

Requirements for the Professional Track of the both the Sc. B. and A.B. degrees.

The requirements for the professional track include all those of the standard track, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts, to be approved by the student's concentration advisor:

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?
- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Honors

Honors candidates must have earned A's or S-with-distinction in 2/3 (rounding up) of the courses used towards the concentration, excluding introductory-sequence courses (CS courses numbered 0200 or below) and the calculus prerequisite.

Computer Science-Economics

The joint Computer Science-Economics concentration exposes students to the theoretical and practical connections between computer science and economics. It prepares students for professional careers that

incorporate aspects of economics and computer technology and for academic careers conducting research in areas that emphasize the overlap between the two fields. Concentrators may choose to pursue either the A.B. or the Sc.B. degree. While the A.B. degree allows students to explore the two disciplines by taking advanced courses in both departments, its smaller number of required courses is compatible with a liberal education. The Sc.B. degree achieves greater depth in both computer science and economics by requiring more courses, and it offers students the opportunity to creatively integrate both disciplines through a design requirement. If you are interested in declaring a concentration in Computer Science-Economics, please refer to this page (<https://economics.brown.edu/academics/undergraduate/concentrations/declaring/>) for more information regarding the process. For more information about the CS Pathways, see this (<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-requirements-2020/pathways-for-undergraduate-and-masters-students/>) page.

Standard Program for the Sc.B. degree.

Prerequisites (3 courses):

MATH 0100	Single Variable Calculus, Part II	
MATH 0520	Linear Algebra	
or MATH 0540	Linear Algebra With Theory	
or CSCI 0530	Coding the Matrix: An Introduction to Linear Algebra for Computer Science	
ECON 0110	Principles of Economics	

Required Courses: 17 courses: 8 Computer Science, 8 Economics, and a Capstone

CSCI 1450	Advanced Introduction to Probability for Computing and Data Science ¹	1
or APMA 1650	Statistical Inference I	
or APMA 1655	Honors Statistical Inference I	
Select one of the following Series:		2

Series A

CSCI 0150 & CSCI 0200	Introduction to Object-Oriented Programming and Computer Science and Program Design with Data Structures and Algorithms	

Series B

CSCI 0170 & CSCI 0200	Computer Science: An Integrated Introduction and Program Design with Data Structures and Algorithms	

Series C

CSCI 0190	Accelerated Introduction to Computer Science (and an additional CS course not otherwise used to satisfy a concentration requirement; this course may be CSCI 0200, an intermediate-level CS course, or a 1000-level course.)	

Series D

CSCI 0111 & CSCI 0112 & CSCI 0200	Computing Foundations: Data and Computing Foundations: Program Organization and Program Design with Data Structures and Algorithms	

Two of the following Computer Science Foundations courses:		2
a. Algorithms/Theory Foundations		

CSCI 0500	Data Structures, Algorithms, and Intractability: An Introduction	
CSCI 1010	Theory of Computation	
CSCI 1550	Probabilistic Methods in Computer Science	

CSCI 1570	Design and Analysis of Algorithms	
b. AI/Machine Learning/Data Science Foundations		
CSCI 1410	Artificial Intelligence	

or CSCI 1420	Machine Learning	
or CSCI 1430	Computer Vision	
or CSCI 1460	Computational Linguistics	
or CSCI 1470	Deep Learning	
or CSCI 1850	Deep Learning in Genomics	
or CSCI 1951R	Introduction to Robotics	

c. Systems Foundations

CSCI 0300	Fundamentals of Computer Systems	
or CSCI 0330	Introduction to Computer Systems	

d. Math Foundations

APMA 1650	Statistical Inference I	
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science	
or MATH 1210	Probability	

or another APMA/MATH course that features probability

Three 1000-level CSCI courses, which cannot include arts/policy/ humanities courses. One of these can be an additional Foundations course.		3

ECON 1130	Intermediate Microeconomics (Mathematical) ²	1

ECON 1210	Intermediate Macroeconomics	1

ECON 1630	Mathematical Econometrics I	1

Three courses from the "mathematical economics" group (CSCI 1951K can be counted as one of them, if it has not been used to satisfy the computer science requirements of the concentration and if the student has taken either ECON 1470 or ECON 1870):		3

ECON 1170	Welfare Economics and Social Choice Theory	

ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies	

ECON 1255	Unemployment: Models and Policies	

ECON 1470	Bargaining Theory and Applications	

ECON 1490	Theory of Market Design	

ECON 1545	Topics in Macroeconomics, Development and International Economics	

ECON 1640	Mathematical Econometrics II	

ECON 1660	Big Data	

ECON 1670	Advanced Topics in Econometrics	

ECON 1680	Machine Learning, Text Analysis, and Economics	

ECON 1750	Investments II	

ECON 1770	Crisis Economics	

ECON 1805	Economics in the Laboratory	

ECON 1820	Theory of Behavioral Economics	

ECON 1860	The Theory of General Equilibrium	

ECON 1870	Game Theory and Applications to Economics	

Two additional 1000-level Economics courses excluding 1620, 1960, 1970 ³		2

One capstone course in either CS or Economics: a one-semester course, normally taken in the student's last semester undergraduate year, in which the student (or group of students) use a significant portion of their undergraduate education, broadly interpreted, in studying some current topic (preferably at the intersection of computer science and economics) in depth, to produce a culminating artifact such as a paper or software project. A senior thesis, which involved two semesters of work, may count as a capstone.		1

Total Credits		17

¹ APMA 1650 or APMA 1655 may be used in place of CSCI 1450 in CS pathway requirements. However, concentration credit will be given for only one of APMA 1650, APMA 1655, and CSCI 1450.

² Or ECON 1110 with permission. For students matriculating at Brown in Fall 2021 or later, note that if ECON 1110 is used, then one additional course from the mathematical-economics group will be required

³ Students may apply, at most, one Economics course whose number is in the range of 1000 to 1099 toward the concentration. Note that ECON 1620, ECON 1960, and ECON 1970 (independent study) cannot be used for concentration credit. However, 1620 and 1960 can be used for university credit and up to two 1970s may be used for university credit.

Standard Program for the A.B. degree:

Prerequisites (3 courses):

MATH 0100	Single Variable Calculus, Part II
MATH 0520	Linear Algebra
or MATH 0540	Linear Algebra With Theory
or CSCI 0530	Coding the Matrix: An Introduction to Linear Algebra for Computer Science
ECON 0110	Principles of Economics

Required Courses: 13 courses: 7 Computer Science and 6 Economics

CSCI 1450	Advanced Introduction to Probability for Computing and Data Science	1
or APMA 1650	Statistical Inference I	
or APMA 1655	Honors Statistical Inference I	

Select one of the following series: 2

Series A

CSCI 0150 & CSCI 0160	Introduction to Object-Oriented Programming and Computer Science and Introduction to Algorithms and Data Structures

Series B

CSCI 0170 & CSCI 0180	Computer Science: An Integrated Introduction and Computer Science: An Integrated Introduction

Series C

CSCI 0190	Accelerated Introduction to Computer Science (and an additional CS course not otherwise used to satisfy a concentration requirement; this course may be CSCI 0200, an intermediate-level course, or a 1000-level course)

Series D

CSCI 0111 & CSCI 0180	Computing Foundations: Data and Computer Science: An Integrated Introduction

Two Computer Science Foundational Courses from the following: 2

a. Algorithms/Theory Foundations

CSCI 0500	Data Structures, Algorithms, and Intractability: An Introduction
CSCI 1010	Theory of Computation
CSCI 1550	Probabilistic Methods in Computer Science

CSCI 1570 Design and Analysis of Algorithms

b. AI/Machine Learning/Data Science Foundations

CSCI 1410	Artificial Intelligence
or CSCI 1420	Machine Learning
or CSCI 1430	Computer Vision
or CSCI 1460	Computational Linguistics
or CSCI 1470	Deep Learning
or CSCI 1850	Deep Learning in Genomics
or CSCI 1951R	Introduction to Robotics

c. Systems Foundations

CSCI 0300	Fundamentals of Computer Systems

or CSCI 0330 Introduction to Computer Systems

d. Math Foundations

APMA 1650	Statistical Inference I
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science
or MATH 1210	Probability

or another APMA/MATH course that features probability

2 1000-level CSCI courses, which cannot include arts/policy/humanities courses. One of these can be an additional Foundations course. 2

ECON 1130	Intermediate Microeconomics (Mathematical)	1

ECON 1210	Intermediate Macroeconomics	1

ECON 1630	Mathematical Econometrics I	1

Three courses from the "mathematical-economics" group: ² 3

ECON 1170	Welfare Economics and Social Choice Theory

ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies

ECON 1255	Unemployment: Models and Policies

ECON 1470	Bargaining Theory and Applications

ECON 1490	Theory of Market Design

ECON 1545	Topics in Macroeconomics, Development and International Economics

ECON 1640	Mathematical Econometrics II

ECON 1660	Big Data

ECON 1670	Advanced Topics in Econometrics

ECON 1680	Machine Learning, Text Analysis, and Economics

ECON 1750	Investments II

ECON 1770	Crisis Economics

ECON 1805	Economics in the Laboratory

ECON 1820	Theory of Behavioral Economics

ECON 1860	The Theory of General Equilibrium

ECON 1870	Game Theory and Applications to Economics

or any graduate Economics course ³

Total Credits 13

¹ Or ECON 1110 with permission. For students matriculating at Brown in Fall 2021 or later, note that if ECON 1110 is used, then one additional course from the mathematical-economics group will be required

² CSCI 1951K can be counted as one of them, if it has not been used to satisfy the computer science requirements of the concentration and if the student has taken either ECON 1470 or ECON 1870.

³ Note that ECON 1620, ECON 1960, and ECON 1970 (independent study) cannot be used for concentration credit. However, 1620 and 1960 can be used for university credit and up to two 1970s may be used for university credit.

Honors

Students who meet stated requirements are eligible to write an honors thesis in their senior year. Students should consult the listed honors requirements of whichever of the two departments their primary thesis advisor belongs to, at the respective departments' websites. If the primary thesis advisor belongs to Economics (Computer Science), then students must have a reader in the Computer Science (respectively, Economics) department.

Professional Track

The requirements for the professional track include all those of the standard track, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby

each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts, to be approved by the student's concentration advisor:

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?
- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Contemplative Studies

The concentration in Contemplative Studies investigates the underlying philosophical, psychological, and scientific bases of human contemplative experience. Students pursue a "third person" academic approach drawn from the humanities and sciences to analyze the cultural, historical, and scientific underpinnings of contemplative experiences in religion, art, music, and literature. This is developed in combination with a "critical first-person" approach based in practical experience of contemplative techniques and methods to provide an integrated understanding of the role of contemplative thought and experience in societies and on the individuals who constitute them.

Concentration Core (6 courses including the Senior Concentration Seminar)

COST 0100 Introduction to Contemplative Studies 1

Two introductory science courses addressing the biological, psychological, and neurological functioning of the human body/mind complex with health implications, and how contemplative practices affect it.

Select one from the following list: 1

BIOL 0200 The Foundation of Living Systems

CLPS 0200 Human Cognition

CLPS 0500 Perception and Mind

NEUR 0010 The Brain: An Introduction to Neuroscience

Others with approval

Select one from following list: 1

COST 0200 Meditation and the Brain

COST 1020 Cognitive Neuroscience of Meditation

COST 1080 Meditation, Mindfulness and Health (PHP 1880)

Two humanities courses that present important themes that can emerge from bringing a Contemplative Studies perspective to the study of contemplative religious traditions and to the philosophical analysis of the key questions of human existence. 2

ANTH 1240 Religion and Culture

CLAS 0990 Karma and Free Will: The Self in Indian Philosophy

CLAS 1120G The Idea of Self

COST 0040 Great Contemplative Traditions of Asia

or RELS 0040 Great Contemplative Traditions of Asia

COST 0145 Karma, Rebirth and Liberation: Life and Death in South Asian Religions

or RELS 0145 Karma, Rebirth and Liberation: Life and Death in South Asian Religions

COST 0410 Engaged Buddhism

COST 0420 The Theory and Practice of Buddhist Meditation

COST 0450 Stages of the Contemplative Path

PHIL 0010 The Place of Persons

PHIL 0015 Introduction to Philosophy

PHIL 0510 Psychology and Philosophy of Happiness

PHIL 1800 Philosophy of Mind

PHIL 1825 Consciousness

RELS 0056 Spiritual But Not Religious: Making Spirituality in America

RELS 0065 On Being Human: Religious and Philosophical Conceptions of Self

RELS 1370B Philosophy of Mysticism

Others with approval

COST 1950 Senior Concentrators' Seminar 1

Track Requirements (6 additional courses Including a Capstone Course)

Students must complete either a Science or Humanities track in addition to the concentration core.

Science Track

The Science track in Contemplative Studies gives concentrators a foundational understanding of the scientific methods used to investigate the biological, psychological, and neurological effects of contemplative practice and their potential implications on physical and mental health both for individuals and for the general public. Students will be taught how to critique current research as well as how to develop, operationalize, and test hypotheses related to contemplative practice. Students will become well-versed in how to study first-person reports related to the *phenomenology* of contemplative experience as a foundation for formulating third-person tests of the effects of practice on brain function and behavior. The Contemplative Studies Science Track trains students to investigate these types of questions not only for academic scholarship, but also to provide a method of self-inquiry that can be used to augment any area of life.

Five thematic science courses, including a Capstone Course, drawn primarily from BIOL, COST, NEUR, CLPS, and PHP, at least one of which must include laboratory work and two of which must be 1000-level; and one Statistics course for a total of six courses. 5

The Capstone Course is intended to be a culmination of the students' concentration in which they will bring to bear what their interests have been in developing their focused work in the program. The Capstone course can be either:

a. A one semester Independent Reading and Research course, either COST 1910 or 1920 OR BIOL 1950 or 1960, depending on the semester; OR

b. A special project done within an existing Contemplative Studies core or related course at the 1000-level in which the student brings to bear the larger concerns of her concentration on a problem or issue within the course. It is expected that such Capstone research papers will be more substantial than a term paper.

BIOL 0280 Biochemistry (lab)

BIOL 0470 Genetics (lab)

BIOL 0530 Principles of Immunology

BIOL 0800 Principles of Physiology (lab)

BIOL 1880	Comparative Biology of the Vertebrates
CLPS 0700	Social Psychology
CLPS 0710	The Psychology and Philosophy of Happiness
CLPS 1193	Laboratory in Genes and Behavior
CLPS 1194	Sleep and Chronobiology Research
CLPS 1291	Computational Methods for Mind, Brain and Behavior
CLPS 1400	The Neural Bases of Cognition
CLPS 1490	Functional Magnetic Resonance Imaging: Theory and Practice
CLPS 1492	Computational Cognitive Neuroscience
CLPS 1570	Perceptual Learning
CLPS 1590	Visualizing Vision
CLPS 1791	Laboratory in Social Cognition
COST 0200	Meditation and the Brain
COST 1020	Cognitive Neuroscience of Meditation
COST 1080	Meditation, Mindfulness and Health (PHP 1880)
NEUR 1020	Principles of Neurobiology
NEUR 1030	Neural Systems
NEUR 1540	Neurobiology of Learning and Memory
NEUR 1600	Experimental Neurobiology
NEUR 1940I	Neural Correlates of Consciousness
PHP 1600	Obesity in the 21st Century: Causes, Consequences and Countermeasures
PHP 1920	Social Determinants of Health
Others with approval	
One statistics course (others with approval)	
APMA 0650	Essential Statistics
APMA 1650	Statistical Inference I
BIOL 0495	Statistical Analysis of Biological Data
CLPS 0900	Statistical Methods
PHP 1501	Essentials of Data Analysis

Humanities Track

The Humanities track explores the origin and development of contemplative practices within specific religious, cultural, and historical contexts and gives students a foundation in the Philosophy of Mind relevant to the scientific study of contemplative practice. Students will choose a concentration program that includes three intermediate and three advanced seminars drawn from the two areas below. While it is recommended that students focus primarily on one of these two areas, the precise balance of the individual concentration program for each student will be established with the concentration advisor when the student applies to enter the concentration, normally in their fourth semester of study.

Six courses, including a Capstone Course, from across the two areas below:

The Capstone Course is intended to be a culmination of the students' concentration in which they will bring to bear what their interests have been in developing their focused work in the program. The Capstone course can be either:

- A one semester Independent Reading and Research course, either COST 1910 or 1920 OR BIOL 1950 or 1960, depending on the semester; OR
- A special project done within an existing Contemplative Studies core or related course at the 1000-level in which the student brings to bear the larger concerns of her concentration on a problem or issue within the course. It is expected that such Capstone research papers will be more substantial than a term paper.

Contemplative Religious Traditions

CLAS 0210Y The Philosophy of Classical Indian Yoga

CLAS 0820	Epics of India
CLAS 0850	Mythology of India
CLAS 0990	Karma and Free Will: The Self in Indian Philosophy
CLAS 0995	India's Classical Performing Arts
CLAS 1140	Classical Philosophy of India
CLAS 1160	Love and Devotion, Power and Poverty: India's Literary Classics
COST 0145	Karma, Rebirth and Liberation: Life and Death in South Asian Religions
COST 0420	The Theory and Practice of Buddhist Meditation
COST 0530	Laozi and the Daodejing
COST 0535	Self Transformation and Transcendence in Later Daoist Contemplative Traditions
COST 0550	Tibetan Buddhism and the West
COST 0855	The Bhagavad Gītā (CLAS 0855)
COST 1420	The Contemplative Foundations of Classical Daoism
EAST 1420	The Confucian Mind
RELS 0045	Buddhism and Death
RELS 0100	Buddhist Thought, Practice, and Society
RELS 0120	The Classical Chinese Philosophy of Life
RELS 1441	Zen Meditation in China, Korea, and Japan
RELS 0570	Science, Religion, and the Search for Happiness in Traditional Asian Thought
RELS 0580	Experiencing the Sacred: Embodiment and Aesthetics in South Asian Religions
RELS 1370B	Philosophy of Mysticism
RELS 1425	Buddhist Poetry
RELS 1442	The History, Philosophy, and Practice of Rinzai Zen Buddhism

The Philosophy of Mind

COST 1520	Consciousness (PHIL 1520)
PHIL 0110	Ancient Greek Philosophy
PHIL 0510	Psychology and Philosophy of Happiness
PHIL 1230	Kant: The Critique of Pure Reason
PHIL 1240	Kant's Moral Philosophy
PHIL 1430	Moral Theories
PHIL 1705	Epistemology
PHIL 1735	Metaphysics
PHIL 1755	Philosophy of Science
PHIL 1800	Philosophy of Mind
UNIV 1520	The Shaping of World Views

Others with approval

Honors Requirement

Students with a minimum GPA of 3.5 in the concentration may apply for entrance into the Honors program in the middle of their sixth semester. To apply, students submit a proposal for a senior thesis project describing the work to be undertaken and its relevance to the field of Contemplative Studies, along with a copy of their academic transcript. Students accepted into Honors must complete the required Capstone seminar, UNIV 1010, and enroll in an additional semester of independent study in their advisor's department. Students must complete an Honors Thesis to the satisfaction of their advisor and present the results of their studies in formal talks or poster sessions open to all interested faculty and students.

Critical Native American and Indigenous Studies

Critical Native American and Indigenous Studies (NAIS) is an interdisciplinary concentration offered through the American Studies department focused on research, teaching and engagement with the social, cultural, artistic, ancestral, heritage, legal and political aspects of Native American and Indigenous peoples in the historical and contemporary periods. It emphasizes the integrated study of indigeneity within contemporary U.S. borders, also extending across the Americas, to Oceania and to other parts of the world. This concentration builds on Brown University's strengths and history of engagement with critical theory, studies and pedagogy, and with topics of social justice, inequality, power structures and structural violence. Through courses across four breadth areas (Creative Expressions; History, Politics and Policy Issues; Language and Identity; Systems of Knowledge and Belief: Fundamentals of Indigenous Living, Society and Wellness) and including foundational and capstone courses, concentrators explore topics and research projects focused on further supporting the interests, concerns and needs of Indigenous peoples in the Western Hemisphere and globally.

This critical approach is also grounded in Indigenous-centered knowledge production, in addition to engagement with topics such as: decolonial scholarship and practices (and the further defining of those terms); Indigenous self-determination and political and social justice; Indigenous activism and sovereignty struggles; the politics of land, dispossession and heritage studies; critiques of racial capitalism and extractive economies; issues of policing, incarceration, criminalization and violence against women; environmental justice and global environmental change; health and economic disparities; structural racism; language loss; cultural and intellectual property rights; and human rights advocacy.

Prospective concentrators should visit the Native American and Indigenous Studies website ([https://www.brown.edu/academics/native-american-and-indigenous-studies/](https://www.brown.edu/academics/native-american-and-indigenous-studies/native-american-and-indigenous-studies/)) to learn more about the concentration and associated faculty, courses and affiliated staff.

To declare the Critical Native American and Indigenous Studies concentration, visit Advising Sidekick (<https://ask.brown.edu/home/>).

Contact Rae Gould (donna_rae_gould@brown.edu) for additional information and advising. Dr. Gould serves as the CNAIS Director of Undergraduate Studies (DUS) for the 2023/24 Academic Year.

Requirements for the Critical Native American and Indigenous Studies Concentration

ETHN 1200K	Introduction to Native American and Indigenous Studies	1

Four (4) courses at the 1000-level related to a focus area of study (determined by the student, in consultation with the NAIS DUS and faculty advisor), also serving to prepare for the capstone requirement; these courses may be from different breadth areas.	4

Four (4) Elective Courses from across the Concentration Breadth Areas	4

Concentration breadth areas are:

- 1) Creative Expressions (Arts, Literature and Language)
- 2) History, Politics and Policy Issues
- 3) Language and Identity
- 4) Systems of Knowledge and Belief: Fundamentals of Indigenous Living, Society and Wellness (Environment, Medicine, Biology, Health, Psychology, Public Health, Philosophy, Religion)

These courses must be at the 1000-level

At least two breadth areas must be included in the overall course of study, with a minimum of two courses in a breadth area outside of the focus area of study (if that is connected to only one breadth area); electives provide an opportunity for expansion beyond the focus area.

No more than two Independent Study Project (ISP or GISP) courses counting towards fulfillment of the concentration.

Courses that are not NAIS designated (in the list of concentration courses) may count toward the concentration if agreed upon by the department faculty advisor and NAIS DUS and closely connected to areas of study.

NAIS 1900	Critical NAIS Capstone Course	1

Total Credits	10

Double Concentrations: Students concentrating in Critical Native American and Indigenous Studies and another discipline may count no more than two courses towards both concentrations.

Transfer credits: Credits for courses taken at other institutions may be applied to the Critical NAIS concentration following review by the department faculty advisor and the NAIS DUS. No more than four (4) transfer courses can be applied toward this A.B.

Language Study:

Through a focus on the Language and Identity Breadth Area, students may include one year (two courses) of language study (determined by the student and faculty advisor, which could be met through a DISP or a GISP course). The language may be an Indigenous one but does not need to be; rather, it should align closely with the goals and interests of the concentrator and could contribute to research and learning goals through access to records, manuscripts and other documents not in English. Students not focusing on Language and Identity may also be interested in language study and are encouraged to include that in their Concentration if it contributes to their goals and objectives.

Honors Thesis or Project (Optional):

Students may choose to complete their Critical NAIS concentration with honors by completing an honors thesis or project, in addition to other course requirements and the 10 credits needed to complete the concentration. To successfully complete Honors in the Critical NAIS concentration, a student must:

- outline a viable research project
- have the support of at least one faculty advisor
- submission and approval of a thesis or project proposal to the faculty advisor and NAIS DUS.

Thesis Requirements:

- Good academic standing at the University and in the concentration (see below)
- Completion of a thesis based on extended independent research under the guidance of a Brown University faculty advisor(s)
- Enrollment in two thesis preparation courses (with thesis advisor) over the final year of undergraduate study (in the fall and spring semesters of final year)
- Submission of an Honors Thesis/Project outline and application for honors designation within the Critical NAIS concentration (to the NAIS DUS and faculty advisor(s)) at the end of the third year of study or by Sept. 30 of the final year. A final proposal of a five-page, double-spaced project description along with a bibliography of relevant sources should be submitted following approval of the thesis/project outline.
- Completed thesis submitted to the NAIS Faculty Director and thesis faculty advisor no later than the third week of April (for May graduation) or the first Monday of December (for winter graduation).

Academic Requirements:

- At least two consecutive semesters in good academic standing at the time of application (submission of honors prospectus)
- The Honors Thesis must earn an A (or a recommendation for Honors) from two faculty readers, in addition to fulfilling all other concentration requirements.

If a student completes an honors thesis that is not conferred honors status, the two semesters of research and writing would constitute completion of the Capstone course (NAIS 1900).

Early Modern World

The Concentration in Early Modern World promotes interdisciplinary and multidisciplinary approaches to historical cultures around the world between the waning of feudalism and the arrival of global industrial capitalism, from the 1300s to the end of the 1800s. Students take courses in a wide range of departments and with faculty affiliated with the Center for the Study of the Early Modern World. Concentrators have the opportunity to be mentored by faculty, staff at the special collections libraries at Brown, and graduate students working on contiguous topics.

Students are invited to take advantage of this breadth of offerings to enhance their understanding of the period, as well as to gain a sense of the uses, limitations, and interrelationships of particular disciplinary approaches.

The Center for the Study of the Early Modern World promotes interdisciplinary and multidisciplinary approaches to historical cultures around the world between the waning of feudalism and the arrival of global industrial capitalism, from the 1300s to the end of the 1800s. Characterized by new global aspirations as well as new modes of domination, resistance, and conflict, this period yielded significant technological transformations and cultural inventions whose study contributes to the historical understanding of the modern world.

Students take courses in a wide range of departments in the humanities and social sciences and from faculty affiliated with the Center. Students are invited to take advantage of this breadth of offerings in order to enhance their understanding of the period as well as to gain a sense of the uses, limitations, and interrelationships of particular disciplinary approaches.

Requirements

Concentrators are required to take a minimum of eight courses. These include the following:

- Three courses on early modern topics in one field in which the student has primary interest or training, e.g., literature, history of art and architecture, or history.
- Three courses related to the early modern period chosen from two other fields.
- A senior project. The senior project constitutes the capstone for all concentrators. Examples of possible senior projects include a senior thesis (roughly equivalent to a senior seminar paper), the staging of an early modern play, the performance of early modern music, or an exhibition. The final project will be developed in consultation with two faculty advisors who work closely with the student. Credit is granted through registration for Independent Study in the department for which the topic of research lies.
- Other relevant courses of the student's choosing.

In addition, the student must be able to demonstrate a reading knowledge of a relevant modern or ancient language other than English. This language requirement does not count as one of the eight courses.

Under the supervision of the director of the program, students may choose courses from the following:

HIAA 0062	Dutch and Flemish Art: Visual Culture of the Netherlands in the Seventeenth Century
ENGL 0100C	Altered States
ENGL 0150D	Shakespeare's Present Tense
HIST 0286A	History of Medicine I: Medical Traditions in the Old World Before 1700
ENGL 0310A	Shakespeare
ENGL 0310E	Shakespeare: The Screenplays
HIAA 0550	Painters, Builders, and Bankers in Early Modern Italy
HIAA 0560	Constructing the Eternal City: Popes and Pilgrims in Early Modern Rome
HIAA 0630	Cultural History of the Netherlands in a Golden Age and a Global Age

COLT 0710I	New Worlds: Reading Spaces and Places in Colonial Latin America
FREN 0720A	De l'Amour courtois au désir postmoderne
POBS 0910	On the Dawn of Modernity
ITAL 0981	When Leaders Lie: Machiavelli in International Context
FREN 1030A	L'univers de la Renaissance: XVe et XVIe siècles
FREN 1030B	The French Renaissance: The Birth of Modernity?
FREN 1040B	Pouvoirs de la scène: le théâtre du XVIIe siècle
FREN 1040C	Le Grand Siècle à l'écran
FREN 1040D	Molière et son monde
ENGL 1310A	Firing the Canon: Early Modern Women's Writing
ENGL 1310H	The Origins of American Literature
ENGL 1310J	Imagining the Individual in Renaissance England
ENGL 1310O	Restoration and Early Eighteenth-Century Literature
ENGL 1360K	Shakespeare and Company
ENGL 1360P	Shakespearean Tragedy
ENGL 1360S	Between Gods and Beasts: The Renaissance Ovid
ENGL 1360Z	Shakespeare and Embodiment
ITAL 1400J	The Many Faces of Casanova
COLT 1410P	Shakespeare
HIAA 1560A	Italy and the Mediterranean
ITAL 1580	Word, Image and Power in Early Modern Italy
HIAA 1600I	Collections and Visual Knowledge in Early Modern Europe: 1400-1800
JUDS 1751	Jews Between Christians and Muslims in the Early Modern World
HIST 1825H	Science, Medicine and Technology in the 17th Century
ENGL 1950A	Form and Feeling in Renaissance Poetry
HIST 1964A	Age of Impostors: Fraud, Identification, and the Self in Early Modern Europe
HIST 1974M	Early Modern Globalization
EMOW 1980	Independent Study in EMOW
LATN 2000A	Senecan Tragedy
FREN 2130E	Corps et esprits libertins
FREN 2130F	Façons d'aimer: Discourses of Sexuality in Early Modern France
HISP 2160G	Don Quixote: Contexts and Constructions
ENGL 2360O	Irony and Satire
ENGL 2360P	Thinking with Romance in the Renaissance
ENGL 2360S	Alternative Miltons
HISP 2520I	Sor Juana Inés de la Cruz in Her Literary Context
ITAL 2550	Gender Matters

Liberal Learning

This concentration develops aesthetic awareness, close reading skills, collaborative skills, cultural understanding, facility with symbolic languages, historical awareness as well as speaking and writing skills.

Honors

Interested and eligible students petition to write a thesis and the faculty chooses the Honors group for that year from the applications, making

every effort to accommodate all eligible proposals. Selection is based upon the quality of the application, the preparedness of the student to undertake the project, and the availability of appropriate advisors for the subject.

Students accepted in the Honors program sign up for EMOW 1980 in the Fall and again in the Spring, with the section number of their advisor (REMS 1980 will become EMOW 1980 as of Fall 2019). Students must meet regularly with their advisors and second readers throughout the year according to a schedule determined by each student and advisor. Finished drafts of the thesis (which will be about 35 pages in length, not counting bibliography and visual or other supporting materials) will be due to the advisor and second reader on April 1 of the Spring semester. Comments will be returned to the students for final polishing and corrections at that point. Students will receive Honors when both their primary advisor and their second reader have provided written statements in support of the finished project. The finished paper, which should be a polished and revised, edited, professional work of original research, will be made available to the entire Early Modern World faculty for comments. There will be a public presentation of the Honors work at the end of the Spring semester.

Students planning a December graduation will not be eligible for the Honors Thesis program, but they are welcome to work out other ways to pursue projects of independent interest in consultation with an academic advisor.

Students wishing to write an honors thesis must have an A average in the concentration, which means that they will not have received more than one "B" or "S" in any course used for the concentration. Classes taken S/NC may be considered as qualifying the student for Honors if they are marked "S with distinction," meaning that had the student taken the course for a grade, the grade would have been an "A." It is advisable for them to have taken at least one class with the person who will advise the thesis, and have already written a research paper before choosing to undertake this year-long writing project. Honors students are strongly encouraged not to take more than 4 classes either semester of their senior year—the Honors class being considered one of the four classes.

Honors Application Process

Applications are due to the Director of Center for the Study of the Early Modern World in mid-April of the student's junior year. Each application shall consist of:

1. A very brief (one or two paragraph) cover letter identifying the most appropriate advisor and second readers, and stating also the student's preparation for the project. Second readers may be professors who work in areas related to the topic, or in some very special cases (and with the advisor's approval) may be practitioners with whom the student already worked closely, for example.
2. A two-page double-spaced abstract stating and explaining the topic (subject and argument) of the research to be undertaken, written as clearly as possible.
3. A one-page working bibliography of the most relevant books and major articles to be consulted for the project.
4. A current resumé.
5. A printout of the most recent transcript.

Earth and Planetary Science

Earth and Planetary Science is a highly interdisciplinary concentration employing principles from physics, chemistry, and biology to understand processes on and in the Earth and other planetary bodies. Concentrators can study Earth and planetary interiors, including the formation of rocks and minerals, movement of the Earth's tectonic plates, and mountain building and volcanism. Other areas emphasize surface processes, such as coastal erosion, formation of water resources, and desertification. This concentration is a good choice for students who seek a broad scientific understanding of the processes that shape the physical world around us.

Both A.B. and Sc.B. degrees are offered, requiring 12 and 19 courses, respectively. These degrees build skills in critical thinking, data analysis and modeling, finding solutions to complex problems, and written and oral communication. DEEPS provides a highly collaborative learning environment that emphasizes process-oriented, hands-on approaches in

the classroom, in labs and on field trips. There are many opportunities for students to do paid research during the summer or academic year.

Students interested in this concentration may also wish to consider related concentrations: Earth, Climate and Biology, Geophysics and Climate Physics, and Geochemistry and Environmental Chemistry.

Note - For students still enrolled with the prior Concentration in Geological Sciences A.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Standard program for the A.B. degree

This program provides a broad introduction to the geosciences. It is recommended for students seeking to combine diverse educational interests with a general understanding of Earth processes and Earth history. It is attractive for double concentrations, such as geoscience and economics as a career path to law or business, or geoscience and English as a career path to journalism or technical writing. Some course requirements may be flexible based on consultation with the concentration advisor.

Three basic supporting science courses

CHEM 0330	Equilibrium, Rate, and Structure (or equivalent)	1
Two courses to build quantitative skills:		2
MATH 0090	Single Variable Calculus, Part I (or higher)	
BIOL 0495	Statistical Analysis of Biological Data	
or APMA 1650	Statistical Inference I	
CSCE 0111	Computing Foundations: Data (or higher)	
ENGN 0040	Engineering Statics and Dynamics (or higher)	
APMA 0350	Applied Ordinary Differential Equations (or higher)	
PHYS 0050	Foundations of Mechanics (or higher)	

Nine Concentration courses

Two of these four fundamentals courses:		2
EEPS 0220	Understanding Earth and Environmental Processes	
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	
EEPS 0240	Earth: Evolution of a Habitable Planet	
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	
Select three of the following:		3
EEPS 1240	Stratigraphy and Sedimentation	
EEPS 1410	Mineralogy	
EEPS 1420	Petrology	
EEPS 1450	Structural Geology	
Three additional upper level EEPS courses or an approved substitute such as a field course		3
One additional upper level science or math course with approval from the concentration advisor.		1

Total Credits 12

Standard program for the Sc.B. degree

This program is recommended for students interested in more in-depth study in geoscience, planetary science and related fields, potentially including graduate school and wide-ranging careers in these areas. Some course requirements may be flexible based on consultation with the concentration advisor.

Note - For students still enrolled with the prior Concentration in Geological Sciences Sc.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Basic supporting science courses

CHEM 0330	Equilibrium, Rate, and Structure (or equivalent)	1
Four courses to build quantitative skills:		4
MATH 0090	Single Variable Calculus, Part I (or higher)	
BIOL 0495	Statistical Analysis of Biological Data	
or APMA 1650	Statistical Inference I	
CSCI 0111	Computing Foundations: Data (or higher)	
APMA 0350	Applied Ordinary Differential Equations (or higher)	
ENGN 0040	Engineering Statics and Dynamics (or higher)	
PHYS 0050	Foundations of Mechanics (or higher)	
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	

Fourteen Concentration courses

EEPS 0220	Understanding Earth and Environmental Processes	1
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	1
EEPS 0240	Earth: Evolution of a Habitable Planet	1
Three of the following:		3
EEPS 1240	Stratigraphy and Sedimentation	
EEPS 1410	Mineralogy	
EEPS 1420	Petrology	
EEPS 1450	Structural Geology	
Three additional upper level EEPS courses or an approved substitute such as a field course		3
Four upper level science or math courses with approval from the concentration advisor		4
EEPS 1970	Individual Study of Geologic Problems (Senior Research Thesis)	1

Total Credits **19**

Earth, Climate, and Biology

Students in Earth, Climate and Biology apply principles from Earth science, biology, chemistry, and physics to understand how major components of the Earth system, such as its atmosphere and oceans, interact with and sustain life over time. Many courses emphasize climate change, environmental quality, and biogeochemistry, so this concentration is a good match for students interested in studying the environment. Courses also investigate Earth history, including past climate, extinction events, and using the Earth's sedimentary record to investigate environmental change.

Both A.B. and Sc.B. degrees are offered, requiring 12 and 19 courses, respectively. These degrees build skills in critical thinking, data analysis and modeling, finding solutions to complex problems, and written and oral communication. DEEPS provides a highly collaborative learning environment that emphasizes process-oriented, hands-on approaches in the classroom, in labs and on field trips. There are many opportunities for students to do paid research during the summer or academic year.

Students interested in this concentration may also wish to consider related concentrations: Geochemistry and Environmental Chemistry, Geophysics and Climate Physics, and Earth and Planetary Science.

Standard program for the A.B. degree

This program provides a broad introduction to the geologic and biologic processes that shape the Earth and our environment. It is recommended for students seeking to combine diverse educational interests with a general understanding of Earth processes, including the evolution of climate and the environment, global environmental change and Earth history. The program prepares students for careers in environmental science, geoscience, ecology, oceanography, and global change. Some

course requirements may be flexible based on consultation with the concentration advisor.

Note - For students still enrolled with the prior Concentration in Geology-Biology A.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Basic supporting science courses

BIOL 0200	The Foundation of Living Systems (or equivalent)	1
or BIOL 0210	Diversity of Life	
CHEM 0330	Equilibrium, Rate, and Structure (or equivalent)	1
A course to build quantitative skills:		1
MATH 0090	Single Variable Calculus, Part I (or higher)	
BIOL 0495	Statistical Analysis of Biological Data	
or APMA 1650	Statistical Inference I	
CSCI 0111	Computing Foundations: Data (or higher)	
ENGN 0040	Engineering Statics and Dynamics (or higher)	
PHYS 0050	Foundations of Mechanics (or higher)	
APMA 0350	Applied Ordinary Differential Equations (or higher)	

Nine Concentration courses

Two of these four fundamentals courses:		2
EEPS 0220	Understanding Earth and Environmental Processes	
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	
EEPS 0240	Earth: Evolution of a Habitable Planet	
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	
EEPS 1240	Stratigraphy and Sedimentation	1
Select three upper level Biology courses such as:		3
BIOL 0410	Invertebrate Zoology	
BIOL 0420	Principles of Ecology	
BIOL 0430	The Evolution of Plant Diversity	
BIOL 0480	Evolutionary Biology	
BIOL 1470	Conservation Biology	
Three EEPS courses such as:		3
One of EEPS 0220, EEPS 0230, EEPS 0240, or EEPS 0250 if not already taken		
EEPS 0850	Weather and Climate	
EEPS 1120	Paleoceanography	
EEPS 1130	Ocean Biogeochemical Cycles	
EEPS 1150	Limnology: The Study of Lakes	
EEPS 1310	Global Water Cycle	
EEPS 1320	Introduction to Geographic Information Systems for Environmental Applications	
EEPS 1370	Environmental Geochemistry	
EEPS 1615	Climate Change, Human Rights, and the Policy Process	
EEPS 1970	Individual Study of Geologic Problems	

Total Credits **12**

Standard program for the Sc.B. degree

This program is recommended for students interested in more in-depth study in the Earth, environmental, or biological sciences, potentially including graduate school and diverse careers in these areas. It is relevant for students interested in environmental science, paleoclimate, Earth systems science, biogeochemistry, oceanography, or paleobiology. Some course requirements may be flexible based on consultation with the concentration advisor.

Note - For students still enrolled with the prior Concentration in Geology-Biology Sc.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Five supporting science courses:

BIOL 0200	The Foundation of Living Systems (or equivalent)	1
or BIOL 0210	Diversity of Life	
CHEM 0330	Equilibrium, Rate, and Structure (or equivalent)	1
Three courses to build quantitative skills:		3
MATH 0090	Single Variable Calculus, Part I (or higher)	
BIOL 0495	Statistical Analysis of Biological Data	
or APMA 1650	Statistical Inference I	
CSCI 0111	Computing Foundations: Data (or higher)	
ENGN 0040	Engineering Statics and Dynamics (or higher)	
APMA 0350	Applied Ordinary Differential Equations (or higher)	
PHYS 0050	Foundations of Mechanics (or higher)	

Fourteen concentration courses:

EEPS 0220	Understanding Earth and Environmental Processes	1
EEPS 0240	Earth: Evolution of a Habitable Planet	1
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	1
or EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	
EEPS 1240	Stratigraphy and Sedimentation	1
Three upper level Biology courses such as:		3
BIOL 0410	Invertebrate Zoology	
BIOL 0420	Principles of Ecology	
BIOL 0430	The Evolution of Plant Diversity	
BIOL 0480	Evolutionary Biology	
BIOL 1470	Conservation Biology	
Three upper level EEPS courses such as:		3
EEPS 0850	Weather and Climate	
EEPS 1120	Paleoceanography	
EEPS 1130	Ocean Biogeochemical Cycles	
EEPS 1150	Limnology: The Study of Lakes	
EEPS 1310	Global Water Cycle	
EEPS 1320	Introduction to Geographic Information Systems for Environmental Applications	
EEPS 1330	Global Environmental Remote Sensing	
EEPS 1370	Environmental Geochemistry	
EEPS 1430	Principles of Planetary Climate	
EEPS 1615	Climate Change, Human Rights, and the Policy Process	
Three upper level science or math courses with approval from the concentration advisor		3
EEPS 1970	Individual Study of Geologic Problems (Senior Research Thesis)	1

Total Credits **19**

East Asian Studies

East Asian Studies is a multidisciplinary concentration designed for students wishing to attain reasonable fluency in Chinese, Japanese, or Korean with specialized exposure to selected East Asian subjects. It serves students with two types of interests: those who aim to pursue active professional careers related to the East Asian region; and those who want to pursue graduate study in the humanities or social sciences with particular emphasis on China, Japan or Korea. Students in East

Asian Studies will gain language proficiency and familiarity with East Asia through advanced courses in a variety of disciplines. Concentrators are strongly encouraged, but not required, to study in East Asia for one or two semesters. The concentration requires students to demonstrate a basic proficiency in Chinese, Japanese, or Korean.

The Language Requirement

The concentration requires students to demonstrate a basic proficiency in Chinese, Japanese, or Korean. For the purposes of the concentration, proficiency is determined to be consistent with successful completion of the Department's third-year course sequence in Chinese, Japanese, or Korean (0500-0600), or its equivalent. Native speakers of these languages may, for example, demonstrate competency such that language courses may be unnecessary. Department language instructors may also determine that course work completed at one of the language-intensive study abroad programs attended by our undergraduates is comparable to courses offered at Brown. Up to three upper level (700-999) language courses may count as electives for the Focus concentration credit. (Lower-level language courses do not count as concentration electives).

Note that we do not equate completion of third-year Chinese, Japanese, or Korean with fluency in these languages. Rather, we believe that students who have demonstrated the skills associated with third-year Chinese, Japanese, or Korean have acquired a foundational understanding of the languages' grammar, vocabularies, and conversational patterns, such that they are able to make themselves understood in everyday situations, and to understand both spoken and written communication.

For the purposes of the concentration, language courses through the third-year are treated as an accompanying requirement.

Language Prerequisites (demonstrating proficiency through the third-year or 0600 level in one of the three languages below)

Chinese	
CHIN 0100 & CHIN 0200	Basic Chinese and Basic Chinese
CHIN 0300 & CHIN 0400	Intermediate Chinese and Intermediate Chinese
CHIN 0350 & CHIN 0450	Elementary to Intermediate Chinese for Advanced Beginners and Advanced Chinese for Heritage Learners
CHIN 0500 & CHIN 0600	Advanced Modern Chinese I and Advanced Modern Chinese I
Japanese	
JAPN 0100 & JAPN 0200	Basic Japanese and Basic Japanese
JAPN 0300 & JAPN 0400	Intermediate Japanese and Intermediate Japanese
JAPN 0500 & JAPN 0600	Advanced Japanese I and Advanced Japanese I
Korean	
KREA 0100 & KREA 0200	Korean and Korean
KREA 0300 & KREA 0400	Intermediate Korean and Intermediate Korean
KREA 0500 & KREA 0600	Advanced Korean and Advanced Korean
KREA 0912	Business Korean

Language Electives (language courses that may be counted for concentration credit)

Chinese	
CHIN 0700 & CHIN 0800	Advanced Modern Chinese II and Advanced Modern Chinese II (either course may be taken for one semester)
CHIN 0911	Business Chinese
CHIN 1040	Modern Chinese Literature
Japanese	

JAPN 0700 & JAPN 0800	Advanced Japanese II and Advanced Japanese II (either course may be taken for one semester)
JAPN 0810	Classical Japanese
JAPN 0711	Japanese Linguistics
JAPN 1010	Readings in Contemporary Japanese Fiction

Electives

The concentration requires that students complete a total of eight electives tied to their course of study, which may be defined in linguistic, chronological, thematic, or cultural terms. Students should choose their courses with the following four requirements in mind.

- **Focus Requirement:** In order to ensure intellectual coherence and focus in the concentration, at least three of the eight electives must focus on the geographic region associated with the student's language study/expertise (including expertise demonstrated in lieu of coursework). For example, a concentrator studying Japanese language, or who has demonstrated competency in Japanese to fulfill the departmental language requirement, should take at least three courses focusing on Japan. Up to three upper level (700-999) language courses may count as electives for the focus concentration credit. (Lower-level language courses do not count as concentration electives).
- **EAST Requirement:** At least three of the eight electives must be East Asian Studies (EAST) courses at any level; Chinese (CHIN), Japanese (JAPN), or Korean (KREA) courses at the 1000-level and above may also count toward this requirement.
- **Breadth Requirement:** At least one of the eight electives must focus on an East Asian country or culture other than those associated with the language the student is using to satisfy the concentration's language requirement. A concentrator studying Chinese, for example, must choose at least one course that focuses on Korea and/or Japan.
- **Senior Seminar Requirement:** At least one of the eight elective courses must be an advanced research seminar, taken in the senior year.

As is common in multidisciplinary concentrations, a wide range of courses, including many taught by faculty in other departments, may be counted toward the concentration. These include courses offered by East Asian Studies faculty, faculty with courtesy appointments in the Department, and courses with a significant focus on East Asia offered in such disciplines such as American Studies, Art History, Economics, International Relations, and many others.

Sample Electives offered by East Asian Studies

EAST 0304	Words on Things: Literature and Material Culture in Early Modern China
EAST 0307	China Through the Lens: History, Cinema, and Critical Discourse
EAST 0402	Japan's Floating World
EAST 0534	Patriots, Communists, and Traitors in Modern Korea ³
EAST 1501	Korean Culture and Film

For additional elective choices, visit <http://brown.edu/academics/east-asian-studies/courses/more-course-offerings>.

¹ China-centric

² Japan-centric

³ Korea-centric

⁴ East Asia-centric

Senior Seminars

At least one of the eight elective courses must be an advanced research seminar, usually taken in the senior year. The research seminar will normally provide students with the opportunity to develop a project or paper focusing on one or more of their areas of inquiry within

the concentration. Students are strongly encouraged to find ways to incorporate the use of Chinese-, Japanese-, or Korean-language materials in their research and learning in these courses. Courses falling into this category include EAS seminars over the 1000 level, as well as designated seminars offered by affiliated faculty in such departments as History, Religious Studies, and Comparative Literature, among others. The Department will provide a list of pre-approved senior seminars every semester. Students wishing to add courses to that list must submit their requests in writing to the Director of Undergraduate Studies at the start of the semester.

Sample advanced seminars offered by East Asian Studies

EAST 1931	Market Economy, Popular Culture, and Mass Media in Contemporary China
EAST 1942	Queer Japan: Culture, History and Sexuality

Honors

East Asian Studies offers qualified students, in their senior year, the opportunity to undertake a sustained research and writing project that, ideally, will result not merely in a long term paper, but in a piece of original scholarship. To enroll in the Honors Program, the student must be a senior East Asian Studies concentrator, and have earned an A or an S with Distinction in the majority of courses for the concentration. Candidates for Honors are required to have developed a competence in an East Asian language sufficient to allow them to use East Asian language materials in carrying out their research. Students must also successfully obtain the support of at least two faculty members who will agree to serve as primary and secondary advisors for the thesis. Prospective writers submit a thesis prospectus, brief bibliography, and completed application forms (with signatures), ordinarily late in the student's six semester, to the Director of Undergraduate Studies, who provides the final permission to proceed. Synopses of successful thesis proposals will be distributed to Department faculty.

Thesis writers enroll in advisor-specific sections of the thesis-writing course EAST 1980 (Fall) and EAST 1981 (Spring), meet regularly with their advisors over the course of both semesters, and submit final versions of their theses to the Department in mid-April. Advisors and students are required to provide updates of their progress to the Director of Undergraduate Studies at regular intervals.

The completed thesis is evaluated for Honors by the thesis director and by the second reader. In case of a difference of judgment between the two readers, a third opinion may be sought. EAST 1981 counts as one concentration elective credit. The awarding of Honors in East Asian Studies will occur only if the Honors Thesis receives a final grade of A. If an A is not received, the student will still receive University academic credit for EAST 1980-81. Students are notified in mid-May whether the Department has recommended the awarding of Honors. Copies of readers' comments are provided to the student.

Graduating concentrators may have the ability to present the results of their senior theses in the department's Senior Project Forum. The Forum will usually take place at the end of the spring semester, but may also occur at the end of the fall semester to accommodate mid-year graduates.

Double Concentrations

Students who are interested in developing a double concentration, including East Asian Studies as one of the two concentrations, should bear in mind that normally no more than two courses may be double-counted toward satisfying the course requirements of either of the two concentration programs involved.

Study Abroad

Concentrators are strongly encouraged, though not required, to study in East Asia for one or two semesters during their undergraduate years. Course credits earned abroad are generally transferable to Brown. However, a maximum of three courses taken abroad, of genuine intellectual substance and significantly related to East Asian Studies, may be considered for

concentration credit.

Summary of requirements:

- Language study through the level of 0600 or the equivalent of Chinese, Japanese, or Korean
- Eight elective courses (see details above)
 - **Focus Requirement:** three courses.
 - EAST Requirement: three courses.
 - Breadth Requirement: one course.
 - Senior Seminar: one course.
- Honors candidates only: EAST 1980 - EAST 1981

Please note: EAS does not currently offer a concentration in Vietnamese. Students who take Vietnamese language in EAS may wish to consider completing a Certificate in Intercultural Competence through the Center for Language Studies.

Economics

Economics is the study of how individuals, businesses, and governments allocate resources to satisfy their objectives. The study of economics helps students understand markets, firms, financial organizations, and public debate about economic policy, including taxation, government expenditure, trade, globalization, health, and welfare. The concentration in Economics prepares students for graduate study in fields such as business and law, for graduate study leading to teaching and research in economics, and can be a stepping-stone to employment in business, finance, non-profit, and government organizations. Students may choose the standard concentration, the business track, or the public policy track, all of which have a corresponding professional track. If you are interested in declaring a concentration in Economics, please refer to this page (<https://economics.brown.edu/academics/undergraduate/concentrations/declaring/>) for more information regarding the process.

Students are required to begin with ECON 0110, an introductory course that stresses current economic issues, and the concepts and principles of economic analysis. Intermediate level courses in microeconomics (ECON 1110 or ECON 1130), macroeconomics (ECON 1210), and econometrics (ECON 1620 followed by ECON 1629 or ECON 1630) round out the list of foundation courses for the concentration. Economics concentrators must also fulfill a math requirement (ECON 0170).

The economics department sponsors a number of concentration options. The most popular is the standard economics concentration, described below. The standard concentration has an optional Business Economics track, as well as a Public Policy track, both described below. Three additional concentration options are administered jointly with other departments and are described separately under their respective titles. They are the concentrations in applied mathematics–economics, mathematical–economics, and computer science–economics. The first two are especially recommended for students interested in graduate study in economics.

Standard Economics Concentration

ECON 0110	Principles of Economics ¹	1
ECON 0170	Essential Mathematics for Economics	1
or MATH 0100	Single Variable Calculus, Part II	
	or a higher-level math course. ²	
ECON 1110	Intermediate Microeconomics	1
or ECON 1130	Intermediate Microeconomics (Mathematical)	
ECON 1210	Intermediate Macroeconomics	1
ECON 1620	Introduction to Econometrics	1
or MATH 1620	Mathematical Statistics	
or APMA 1650	Statistical Inference I	
or APMA 1655	Honors Statistical Inference I	
ECON 1629	Applied Research Methods for Economists	1
or ECON 1630	Mathematical Econometrics I	
At least five additional 1000-level Economics courses. ³		5
Total Credits		11

¹ Students who place out of ECON 0110 on the basis of qualifying scores on the AP, IB, or A-level exams must take an additional 1000-level course (6 instead of 5).

² Students can satisfy the mathematics requirement with qualifying scores on the AP, IB, or A-level exams (but not the math department's self placement exam). Note that certain advanced economics courses may impose additional math prerequisites.

³ Students may apply, at most, one Economics course whose number is in the range of 1000 to 1099 toward the concentration. Note that ECON 1960 (thesis course) does not count toward the concentration.

Business Economics Track

ECON 0110	Principles of Economics ¹	1
ECON 0170	Essential Mathematics for Economics	1
or MATH 0100	Single Variable Calculus, Part II	
	or a higher level math course	
ECON 0710	Financial Accounting	1
ECON 1110	Intermediate Microeconomics	1
or ECON 1130	Intermediate Microeconomics (Mathematical)	
ECON 1210	Intermediate Macroeconomics	1
ECON 1420	Industrial Organization ²	1
ECON 1620	Introduction to Econometrics	1
or APMA 1650	Statistical Inference I	
or APMA 1655	Honors Statistical Inference I	
or MATH 1620	Mathematical Statistics	
ECON 1629	Applied Research Methods for Economists	1
or ECON 1630	Mathematical Econometrics I	
ECON 1710	Investments I	1
ECON 1720	Corporate Finance	1
Two Business Economics electives from the following list:		2
ECON 1090	Introduction to Game Theory	
ECON 1310	Labor Economics	
ECON 1400	The Economics of Mass Media	
ECON 1450	Economic Organizations and Economic Systems	
ECON 1465	Antitrust and Competition	
ECON 1470	Bargaining Theory and Applications	
ECON 1490	Theory of Market Design	
ECON 1540	International Trade	
ECON 1550	International Finance	
ECON 1660	Big Data	
ECON 1730	Venture Capital, Private Equity, and Entrepreneurship	
ECON 1740	Mathematical Finance	
ECON 1750	Investments II	
ECON 1760	Financial Institutions	
ECON 1770	Crisis Economics	
ECON 1780	Advanced Topics in Corporate Finance	
ECON 1820	Theory of Behavioral Economics	
ECON 1830	Behavioral Finance	
ECON 1870	Game Theory and Applications to Economics	

Total Credits **12**

¹ Students who place out of ECON 0110 on the basis of qualifying scores on the AP, IB, or A level exams must take a sixth 1000-level Economics elective (which need not come from the Business Economics group). Note that at most one economics elective in the 1000-1099 range may be applied towards the concentration.

² Or Econ 1460, if previously taken (it is not being offered in the near future).

³ Students can satisfy the mathematics requirement with qualifying scores on the AP, IB, or A-levels exams (but not the Math department's self placement exam). Note the certain advanced economics courses may impose additional math prerequisites.

⁴ Students may apply, at most, one Economics course whose number is in the range of 1000 to 1099 toward the concentration. Note that ECON 1960 (thesis course) does not count toward the concentration.

Public Policy Track

ECON 0110	Principles of Economics ¹	1
ECON 0170	Essential Mathematics for Economics ²	1
or MATH 0100	Single Variable Calculus, Part II	
ECON 1110	Intermediate Microeconomics	1
or ECON 1130	Intermediate Microeconomics (Mathematical)	
ECON 1210	Intermediate Macroeconomics	1
ECON 1620	Introduction to Econometrics ³	1
ECON 1629	Applied Research Methods for Economists	1
or ECON 1630	Mathematical Econometrics I	
Five Public Policy Electives from the list below: ⁴		5
ECON 1000	Using Big Data to Solve Economic and Social Problems	
ECON 1070	Race, Crime, and Punishment in America	
ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies	
ECON 1255	Unemployment: Models and Policies	
ECON 1310	Labor Economics	
ECON 1340	Economics of Global Warming	
ECON 1350	Environmental Economics and Policy	
ECON 1355	Environmental Issues in Development Economics	
ECON 1360	Health Economics	
ECON 1370	Race and Inequality in the United States	
ECON 1385	Intergenerational Poverty in America	
ECON 1390	Inequality of Income, Wealth, and Health in the United States	
ECON 1410	Urban Economics	
ECON 1420	Industrial Organization	
ECON 1430	The Economics of Social Policy	
ECON 1440	The Economic Analysis of Political Behavior	
ECON 1480	Public Economics	
ECON 1500	Current Global Macroeconomic Challenges	
ECON 1520	Culture, History and Comparative Development	
ECON 1530	Health, Hunger and the Household in Developing Countries	
ECON 1540	International Trade	
ECON 1550	International Finance	
ECON 1560	Economic Growth	
ECON 1570	The Economics of Latin Americans	
ECON 1600	Education, the Economy and School Reform	
Interdisciplinary requirement. Two courses outside of the economics department that relate to better understanding the implementation and/or evaluation of public policies (may be below or above 1000-level). Several departments offer such courses, and availability varies from year to year. Some pre-approved options are		2
AFRI 1920	Health Inequality in Historical Perspective	
CLPS 0220	Making Decisions	
CLPS 0700	Social Psychology	

PHP 0310	Health Care in the United States
PHP 0330	Public Health Policy
PHP 0850	Fundamentals of Epidemiology
POLS 0010	Introduction to the American Political Process
POLS 1050	Ethics and Public Policy
POLS 1823Z	Gender and Public Policy
SOC 1330	Remaking the City
URBN 0210	The City: An Introduction to Urban Studies

Students may also request advisor permission for other courses

A capstone project in the senior year. This can be satisfied in different ways: (a) the capstone is automatically fulfilled if one of the public policy electives completed is designated as a capstone course (see the list of capstone courses on the economics department website); or (b) a capstone project is otherwise arranged and completed for a public policy elective; or (c) an honors thesis is completed, under the guidelines of honors in the economics concentration. In cases (a) and (b), a capstone form must be submitted to the department. ⁵

Total Credits **13**

¹ Students who place out of ECON 0110 on the basis of qualifying scores on the AP, IB, or A level exams must take a sixth 1000-level Economics elective (which need not come from the Public Policy group).

² Students can satisfy the mathematics requirement with qualifying scores on the AP, IB, or A-levels exams (but not the Math department's self placement exam). Note the certain advanced economics courses may impose additional math prerequisites.

³ APMA 1650, APMA 1655, CSCI 1450, or MATH 1620 can substitute for ECON 1620

⁴ Note that at most one economics elective in the 1000-1099 range may be applied towards the concentration.

⁵ A complete list of Capstone courses can be found on the Economics Department website (<https://economics.brown.edu/academics/undergraduate/honors/>).

All concentrators in economics programs are encouraged to consult their concentration advisors regularly. Economics concentrators who wish to study abroad should consult first with the department transfer credit advisor.

Honors

To graduate with honors, students must satisfy the following requirements **by the end of Junior year**:

- Complete at least 70% of the courses required for the concentration.
- Have earned a grade of "A" or "S with distinction" in at least 70% of grades earned in the economics concentration, or 50% in the joint concentrations in APMA-Econ, CS-Econ, and Math-Econ (excluding courses transferred to Brown without a grade, and those taken Spring 2020).
- *Economics Concentrators* must find a faculty thesis advisor in the economics department.
- *Joint Concentrators* must find a primary faculty thesis advisor in either economics or the partner department. CS-Econ concentrators must have a secondary reader in the other department by the fall of senior year. APMA-Econ and Math-Econ do not require a secondary reader, unless the primary advisor deems it necessary. Joint concentrators need to satisfy the honors requirements of the economics department if their thesis advisor is in the economics department; while they need to satisfy the honors requirements of the partner department if their thesis advisor is in the partner department.

During Senior year, thesis writers must:

- Enroll in ECON 1960 with their thesis advisor in the fall and spring semesters.
- Submit a thesis proposal to their thesis advisor and the Undergraduate Program Coordinator by mid-September.

- Submit their work in progress to their thesis advisor and the Undergraduate Program Coordinator by mid-December.
- Depending on the nature of the thesis work, the thesis adviser may require the student to successfully complete one or more courses from among the data methods (<https://economics.brown.edu/academics/undergraduate/concentrations/combined/course-groupings/>), mathematical economics (<https://economics.brown.edu/academics/undergraduate/concentrations/combined/course-groupings/>) and/or financial economics (<https://economics.brown.edu/academics/undergraduate/concentrations/combined/course-groupings/>) course groups in the fall of senior year, if they have not already done so.
- Complete an honors thesis by the deadline agreed upon with their advisor and obtain the final approval of their advisor by mid-April.
- Thesis writers are encouraged, but not required, to participate in the departmental Honors Thesis Presentation session held in May, with a brief presentation of their work and findings.
- *Please refer to the Economics Department Honors Thesis page (<https://economics.brown.edu/academics/undergraduate/honors-and-capstones/thesis/>) for specific deadlines.

Professional Track ¹

In addition to fulfilling the other concentration requirements, students on the Professional Track must complete 2-6 months of full-time professional work related to their concentration, with a given internship or job lasting at least one month. International students must declare the professional track of their concentration in order for U.S. based internships to qualify for Curricular Practical Training (CPT). Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Professional experiences completed over winter break cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience, to be approved by their concentration advisor.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience, to be approved by the student's concentration advisor:

¹ International students must declare the professional track of their concentration in order for U.S. based internships to qualify for Curricular Practical Training (CPT). In addition to their other concentration requirements, students must complete two two-to-four month full time professional experiences, doing work that is related to their concentration program. Such work is normally done at a company or a non profit, but may also be at a university under the supervision of a faculty member. Upon completion of each profession experience, the student must write a reflective essay on ASK, to be approved by their concentration advisor.

Education Studies

Welcome to Education Studies! Undergraduate concentrators study education in a rigorous, multi-dimensional way that allows them to investigate thorny questions of opportunity and equity in real-world settings. Our ever-expanding array of education courses allows undergraduates to explore fundamental issues of race, class, power, privilege, equity and identity through the lens of education. From introductory courses to advanced seminars, our classes examine how to teach for social justice, how students learn and develop, and how education policies promote or limit opportunity and equity.

Our faculty includes experts in teaching and learning, human development, education policy, and the history of education. We take a multi-disciplinary approach to the field, offering courses from perspectives in anthropology, economics, history, human development, political science, social work, and sociology, among others.

Concentration Requirements

The concentration in Education Studies requires a total of 10 credit-bearing courses and 1 non-credit-bearing experiential component, allowing students to develop a personalized plan of study to structure their Education experiences. The new Education Studies coursework is composed of the following four elements:

1. Three (3) Core Courses: 2 introductory courses (EDUC 0300 and EDUC 0750) will provide students with a broad-based introduction to the field of education and empirical methods used in the field, while 1 Senior Seminar, EDUC 1900, offers a culmination of students' experiences in the concentration.
2. Four (4) Specialization Courses: Students choose 4 courses total in their planned area of emphasis within the education field. Some examples include: Education Policy Analysis; Human Development; Education and Inequality; Education for Social Justice; Adolescence; Immigrant Families, Communities & Education; Child Development; Teaching and Learning; Education and Economics; or any related topic of interest.
3. Three (3) Elective Courses: Students choose three courses related to the field of education and the student's field of study. One (1) independent study course can be counted towards concentration requirements. No more than 3 courses in an Education Studies concentration can come from other departments outside of Education, and all courses should be approved by the student's advisor and meaningfully tied to education.
4. One (1) Experiential Component: Before the beginning of the spring semester of senior year, students must complete an Experiential Component designed to promote practice-based engagement with the field of education and reflect on their experiences, tying them into their academic learning in the Education Studies concentration. Students can satisfy this requirement in one of the ways below and should then upload documentation in their ASK declaration.
 - a. **By completing an existing Community-Based Learning and Research (CBLR) in the Department. OR**
 - b. **By writing a paper reflecting on their experience through the lens of their coursework in the Department, the student's academic advisor will assess the paper. OR**
 - c. **By completing the Experiential Component Based (ECB) Capstone project in EDUC 1900 (Senior Seminar) OR**
 - d. **By completing the reflection in an independent study-like course "Reflecting on Fieldwork."**

Education Studies Concentration Plan of Study

Foundational Courses Required for Education Studies Concentration

EDUC 0300	Introduction to Education and Society: Foundations of Opportunity and Inequality
EDUC 0750	Evidence and Method in Education Research
EDUC 1900	Senior Seminar

Other Courses in Education Studies Concentration

4 Courses in Area of Emphasis (could include any 4 of the following)

EDUC 0300	Introduction to Education and Society: Foundations of Opportunity and Inequality
EDUC 0405	New Faces, New Challenges: Immigrant Students in U.S. Schools
EDUC 0515	Teaching LGBTQIA History
EDUC 0520	Adolescent Literature
EDUC 0560	Cultivating STEM Identities: Teaching for Equity in the Math and Science Classrooms

4

EDUC 0610	Brown v. Board of Education and the History of School Desegregation	
EDUC 0750	Evidence and Method in Education Research	
EDUC 0800	Introduction to Human Development and Education	
EDUC 0820	Politics and Public Education	
EDUC 0815	The Craft of Teaching	
EDUC 0830	Sociology of Education	
EDUC 0835	Comparative Education	
EDUC 0870	Perspectives on Multilingual Learners in US Schools	
EDUC 1190	Family Engagement in Education	
EDUC 1230	Applied Statistics for Ed Research and Policy Analysis	
EDUC 1240	Using Qualitative Research Methods	
EDUC 1300	Schools as Sites of Social Welfare: An Exploration of the Role of Social Workers in Schools	
EDUC 1310	Inside Higher Ed: Sex, Class, and Admissions	
EDUC 1645	Moral Development and Education	
EDUC 1655	Human Development and Education in East Asia	
EDUC 1675	The Psychology of Teaching and Learning	
3 Foundational courses in Education (from the table above)		3
3 Electives		3
1 Experiential Component		0
Total Credits		10

Honors

Concentrators seeking to graduate with honors must apply for honors candidacy by the end of their sixth semester. Successful candidates must meet all requirements for the concentration; maintain a minimum grade average that includes more A's than B's in Education courses (a B must be counterbalanced by two A's); and successfully complete EDUC 1900 (fall) and EDUC 1991 (spring), in which they write a senior thesis under the guidance of a thesis advisor. Honors are awarded on the basis of thesis quality, and students whose theses meet or exceed the standards established in the Department Rubric will earn honors upon graduation.

More information about writing an Honors thesis can be found on our website: <https://education.brown.edu/academics/undergraduate/honors> (<https://education.brown.edu/academics/undergraduate/honors/>).

Combined Baccalaureate/Master of Arts in Teaching Degree

The Education Department offers a combined degree program. Brown undergraduates can apply to earn both the MAT degree and a B.A. or B.S. in a subject field (English, history, math, biology, chemistry, physics, engineering and allied concentrations) in 5 years.

Brown undergraduates can apply through the Education Department during their junior year. During their undergraduate years, candidates must complete all baccalaureate requirements and may take up to two of the required graduate courses. In their fifth year, they will complete the remaining required graduate courses, including the one-year teaching residency. The minimum requirements to complete both degrees are 36 credits, of which a maximum of two may count toward both the bachelor's degree and the MAT degree.

Egyptology and Assyriology

The concentration in Egyptology and Assyriology offers students a choice of two tracks: Assyriology or Egyptology. The department promotes collaborations with other academic units at Brown devoted to the study of antiquity including Archaeology, Classics, Judaic Studies, and Religious

Studies. Egyptology and Assyriology also collaborates with Brown's Joukowsky Institute for Archaeology and the Ancient World.

Assyriology Track

Also known as the Near East or Middle East, Western Asia includes present-day Iraq, Syria, Turkey, and other neighboring states, a broad geographic area that was connected in antiquity with the wider world—the Mediterranean, North Africa, the Arabian Peninsula, Central Asia, and the Asian subcontinent. Students will be exposed to the critical study of the ancient cultures of this region (ca. 3400 B.C.E.–100 C.E.) using the tools of archaeology, epigraphy, and historical inquiry. A variety of interdisciplinary, comparative, and theoretical approaches will be introduced to give students the tools and methods to explore this region's ancient languages and literatures, political and socio-economic modes of organization, art and architecture, religious traditions and other systems of knowledge, such as early science.

The Assyriology (ASYR) track requires a total of at least ten (10) courses that are determined in the following way:

Language Courses (two courses) 2

One course in cuneiform-based language, normally Introduction to Akkadian, Introduction to Sumerian, or Introduction to Hittite. One additional language course, either Intermediate Akkadian or another language with the EGYT or ASYR course code.

ASYR 1000	Introduction to Akkadian
or ASYR 1400	Introduction to Sumerian
or ASYR 1900	Introduction to Hittite Language and Literature

And one of the Following:

ASYR 1010	Intermediate Akkadian
ASYR 1400	Introduction to Sumerian
ASYR 1900	Introduction to Hittite Language and Literature

EGYT 1310	Introduction to Classical Hieroglyphic Egyptian Writing and Language (Middle Egyptian I)

EGYT 1320	Introduction to Classical Hieroglyphic Egyptian Writing and Language (Middle Egyptian II)

Foundations (Four Courses): One course in each of the following areas: 4

History

EGYT 0600	Ancient True Crime: Murder, Conspiracy, and Law in the Ancient World
ASYR 0300	Babylon: Myth and Reality
ASYR 0800	The Cradle of Civilization? An Introduction to the Ancient Near East

Archaeology:

ASYR 0800	The Cradle of Civilization? An Introduction to the Ancient Near East
ASYR 1420	Monarchs, Gods and Demons: The Art of the Ancient Near East (HIAA 1420)
ARCH 0372	Meeting with Mesopotamia
ARCH 0760	Palaces: Built to Impress
ARCH 1475	Petra: Ancient Wonder, Modern Challenge
ARCH 1635	The Great Heresy: Egypt in the Amarna Period
ARCH 1879	A World in Color: Seeing and Experiencing Colors in Ancient Times

Religion and Literature

EGYT 0300	In the Beginning: Cosmos and Creation in the Ancient World
ARCH 0255	Monsters
ASYR 0310	Thunder-gods and Dragon-slayers: Mythology + Cultural Contact - Ancient Mediterranean and Near East

ASYR 1100	Imagining the Gods: Myths and Myth-making in Ancient Mesopotamia	
ASYR 1110	Literature of Ancient Iraq	
Making Knowledge - Ancient and Modern		
ASYR 0320	The Origin(s) of Science	
ASYR 0500	Mathematics in the Ancient World	
ASYR 1160	Color and Culture in the Ancient Near East	
ASYR 1500	Ancient Babylonian Magic and Medicine	
ASYR 1600	Astronomy Before the Telescope	
ASYR 1700	Astronomy, Divination and Politics in the Ancient World	
ASYR 1725	Scientific Thought in Ancient Iraq	
ARCH 1538	Heritage Under Fire: From Conflict to Understanding, Memory, and Reconciliation	
ARCH 1830	Fake! History of the Inauthentic	
Depth Requirement (Two Courses)		2
At least two additional courses at the 1000 level or higher that include ancient Mesopotamia as a major component of the syllabus, usually in ASYR or ARCH. Subject to the approval of the concentration advisor and DUS.		
Breadth Requirement (Two Courses)		2
Two additional courses on some aspect of the ancient/premodern world, at least one of which should be with the department's faculty. Subject to the approval of the concentration advisor and DUS.		
Total Credits		10

Egyptology Track

Language Courses (two courses)		2
One course in the ancient Egyptian language, ordinarily Middle Egyptian I. However, other phases of the ancient Egyptian language can be substituted for one or both of these, such as Late Egyptian or Coptic. One additional language course, either Middle Egyptian II or another language with the EGYT or ASYR course code.		
EGYT 1310	Introduction to Classical Hieroglyphic Egyptian Writing and Language (Middle Egyptian I)	
And one of the Following:		
EGYT 1320	Introduction to Classical Hieroglyphic Egyptian Writing and Language (Middle Egyptian II)	
EGYT 2210	Introduction to Coptic	
EGYT 2410	Late Egyptian	
EGYT 2610	Introduction to Demotic	
ASYR 1000	Introduction to Akkadian	
ASYR 1010	Intermediate Akkadian	
ASYR 1400	Introduction to Sumerian	
ASYR 1900	Introduction to Hittite Language and Literature	

Foundations (Four Courses): One course in each of the following areas:

History		
EGYT 0500	The Pyramids in Context: Archaeology of Life and Religion of Death in Old Kingdom Egypt	
EGYT 0550	Black Pharaohs: Nubian Kings and Queens of Ancient Egypt	
EGYT 0600	Ancient True Crime: Murder, Conspiracy, and Law in the Ancient World	
EGYT 1030	Collapse! Ancient Egypt after the Pyramid Age	

EGYT 1430	Pyramids, Power, Propaganda: Ancient Egyptian History to 1300 BCE ¹	
EGYT 1465	Life on the Nile: Ancient Egypt beyond the Pharaohs	
Archaeology:		
EGYT 1510	Ancient Egyptian Art II	
ARCH 0150	Introduction to Egyptian Archaeology and Art	
ARCH 0760	Palaces: Built to Impress	
ARCH 1630	Fighting Pharaohs: Ancient Egyptian Warfare	
ARCH 1635	The Great Heresy: Egypt in the Amarna Period	
ARCH 1879	A World in Color: Seeing and Experiencing Colors in Ancient Times	
Religion and Literature		
EGYT 0300	In the Beginning: Cosmos and Creation in the Ancient World	
EGYT 1100	Ancient Voices: The Literature of Ancient Egypt	
EGYT 1420	Ancient Egyptian Religion and Magic	
ARCH 0255	Monsters	
Making Knowledge - Ancient and Modern		
EGYT 1400	Ethiopia Shall Stretch Forth Her Hands: Black Reception of Ancient Egypt and Nubia	
EGYT 1485	Magic, Mummies, and Drugs: Medicine and Physicians in Ancient Egypt	
EGYT 1490	Calendars and Chronology in Ancient Egypt and the Ancient World	
ASYR 0320	The Origin(s) of Science	
ASYR 0500	Mathematics in the Ancient World	
ASYR 1160	Color and Culture in the Ancient Near East	
ASYR 1600	Astronomy Before the Telescope	
ARCH 1538	Heritage Under Fire: From Conflict to Understanding, Memory, and Reconciliation	
ARCH 1830	Fake! History of the Inauthentic	
Depth Requirement (Two Courses)		2
At least two additional courses at the 1000 level or higher that include ancient Egypt as a major component of the syllabus, usually in EGYT or ARCH. Subject to the approval of the concentration advisor and DUS.		
Breadth Requirement (Two Courses)		2
Two additional courses on some aspect of the ancient/premodern world, at least one of which should be with the department's faculty. Subject to the approval of the concentration advisor and DUS.		
Total Credits		10

Senior Capstone Project

All concentrators in Egyptology and Assyriology are required to complete a capstone project. Under normal circumstances a concentrator will complete a capstone project in their last undergraduate year, the idea being that the project will be a culmination of the student's academic path at Brown and in the department. Students have three options for fulfilling the capstone requirement in Egyptology and Assyriology:

1. Honors Thesis (see policies and procedures for Honors in Egyptology and Assyriology)
2. Independent Study: A one-semester reading and research independent study course under the direction of a faculty advisor in the department (this course may count toward the concentration Depth or Breadth requirement subject to the approval of the concentration advisor and DUS). The independent study should result in a research

paper (at least 5000 words) or a significant original translation and analysis of an ancient text or a coherent group of related texts.

3. Course Project: a project undertaken in connection with an EGYT/ ASYR/ARCH course at or above the 1000 level (this course may count toward the concentration Depth or Breadth requirement). The specific project should be discussed with, and must be approved by, the instructor of the relevant course and the DUS

The capstone project can take many forms, but the common feature shared among all possible projects will be a public presentation. Typically in the final semester before graduating, the concentrator will give this capstone presentation before the department community. The format of the presentation may vary: students may give an illustrated lecture, present and discuss a video or installation, or propose a novel presentation modality. Both the content and the format of the capstone project must be discussed beforehand and approved by the concentration advisor and DUS no later than the end of the first semester of the senior year.

Honors in Egyptology and Assyriology

1. Becoming an honors candidate

Students who wish to consider pursuing honors should meet with the Undergraduate Concentration Advisor in the first half of their sixth semester.

Eligibility is dependent on:

- Being in good standing
- Having completed at least two thirds of the concentration requirements by the end of the sixth semester.
- Having earned two-thirds "quality grades" in courses counted towards the concentration. A "quality grade" is defined as a grade of "A" or a grade of "S" accompanied by a course performance report indicating a performance at the "A" standard.

To pursue honors candidacy, eligible students must:

- Secure a faculty advisor and discuss plans for the proposed thesis project well before the established deadline; this can be done by email when a student is abroad.
- Prepare a thesis prospectus (see below).
- Submit the prospectus to the advisor, one other proposed faculty reader (at least one of the readers must be in the department) and the department chair *no later than the first week of the seventh semester*.

The structure of a thesis prospectus:

An honors thesis in Egyptology or Assyriology is a substantial piece of research with some degree of originality that demonstrates the student's ability to frame an appropriate question and deal critically with the range of original and secondary sources. A thesis prospectus is a short analytical document consisting of several parts. It will normally include a concise and focused research question; a justification for that question that demonstrates familiarity with previous research on the topic; a project description that includes a discussion of the types of evidence available and appropriate to answering the proposed question; a discussion of methods of collecting and analyzing that evidence; a conclusion that returns to the research question and assures the reader that the project will add value to our understanding of the topic; and a bibliography. The prospectus will ordinarily be in the range of 5-7 pages in length, exclusive of bibliography. The prospectus will include proper citations throughout.

Determination of whether or not a student may pursue the proposed project will be made on review of the prospectus by the readers and department chair. Prospectuses will be evaluated on the following scale:

1. No concerns about the viability of the project.
2. No concerns about the viability of the project, but minor weaknesses in the execution of the prospectus.
3. Concerns about the viability of the project, but willingness to reevaluate a revised prospectus submitted within two weeks of receipt of evaluation.
4. Reservations that the prospectus does not describe an honors-worthy project.
5. Poorly conceived and shoddy work.

Prospectuses will be returned to the student with this numerical evaluation and comments one week after submission of the prospectus. A

prospectus must receive an evaluation of 1 or 2 prior to the third week of the seventh semester for a student to be admitted to the honors track. Students who submit an original prospectus that is graded 4 or 5 will not be permitted to rework the prospectus for the second submission.

2. Developing, completing and submitting the honors project

Once accepted as honors candidates, students will pursue a course of study that goes beyond what is expected of a regular concentrator. This includes:

- Enrollment in two semesters of independent study in Egyptology or Assyriology (these do not fulfill course requirements towards the concentration).
- Twice-monthly meetings with the thesis advisor and once-monthly meetings with the second reader. These meetings will be scheduled at the beginning of each term.
- Submission of a comprehensive outline to both readers no later than October 15 (for May graduates)
- Regular submission of drafts. A partial draft including a complete version of at least one chapter or section is due before Reading Period of the seventh semester.
- A complete draft is due to both readers no later than March 15 (for May graduates).
- The revised final thesis is due in both electronic and physical form to both readers and department chair April 5 (for May graduates).

Failure to meet any deadline will result in automatic termination of the honors process. No extensions will be granted. If a thesis is turned in late but before the end of the term, credit and grade for the Independent Study may still be granted.

3. Evaluating the submitted work of honors candidates

In order to receive honors a student must be found to have:

- Remained in good academic standing throughout the academic year.
- Not violated the Academic Code of Conduct during honors candidacy.
- Complete or be about to complete all concentration requirements.
- Produced a thesis that is judged by the readers to meet the department's expectations for honors work (see below), and turned it in by the established deadlines.
- Successfully defended the thesis during a half hour public presentation held during the final exam period of the eighth semester.

Students who submit theses that are deemed to fall short of the expectations will graduate without honors. In that case, the theses will count as a capstone project.

4. Expectations for honors theses:

Originality:

An honors thesis in Egyptology or Assyriology is expected to add to existing scholarship. The thesis must be based on close work with primary sources (usually in publication rather than in person), supplemented by critical engagement with a substantial amount of relevant secondary literature. While the resulting study is not necessarily expected to be ground-breakingly original, and may engage with a well-studied topic, it will usually include a new insight into or interpretation of the material considered.

Scope:

An honors thesis is not a book or dissertation. It is, however, a very serious piece of research and writing for which two dedicated study courses have provided substantial time to the honors student. The question upon which the honors thesis is based should be focused enough to allow an in-depth treatment, generally in under 100 pages or 30,000 words (exclusive of bibliography and illustrations). Appropriate length will vary considerably depending on the topic itself and the nature of the primary sources being considered, particularly if substantial translation of ancient textual sources is required.

Argument:

The thesis should present a sustained analytic argument in answer to its structuring question. A thesis should not be primarily descriptive or narrative in nature. Each chapter should contain a sub-argument that is clearly related to the overall argument of the thesis. The significance of the argument and its relationship to prior scholarship should be clearly articulated. Honors theses are not expected to demonstrate

comprehensive familiarity with the secondary literature, but they are expected to engage critically and maturely with important works on the defined topic.

Methodology:

Egyptology and Assyriology are very broad fields, and the appropriate methods will be determined in conjunction with the thesis advisor on the basis of the questions and types of evidence - textual, archaeological, art historical - under consideration. With very few exceptions the methodology of the thesis is expected to be conventional rather than innovative, rooted in the accepted practices of the field in question.

Organization and writing:

An honors thesis must be well organized and written. It should include an introduction and conclusion as well as well-considered chapters that allow the reader to follow the line of reasoning easily. The relationship of any section to the larger whole should be clear, and segues should help the reader move between sections. Writing should be grammatically correct, well copy-edited, professional, and consistent. Citations and bibliography must be in an accepted style as determined in consultation with the advisor.

Electrical Engineering

The Sc.B. program in Electrical Engineering equips students with a solid foundation for careers in electrical engineering and related fields, to advance the knowledge base for future technologies, and to merge teaching, scholarship, and practice in the pursuit of solutions to human needs. Electrical engineers design and manufacture microelectronic hardware; sensors; biomedical instrumentation; communication systems; control systems; radar and navigation equipment, as well as power generation and distribution equipment and propulsion systems. The professional organization for electrical engineers, the Institute of Electrical and Electronics Engineers (IEEE), has over 400,000 members worldwide.

The curriculum consists of an interdisciplinary engineering core that includes courses in engineering, mathematics, and computer science, followed by advanced courses in electrical engineering, which include linear systems, analog and digital electronics, advanced science (typically modern physics or quantum mechanics) and three upper-level EE courses selected by the students. The program culminates with the capstone project course.

The Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET: <http://www.abet.org>. The Program Educational Objectives (PEOs) of the Electrical Engineering Sc.B. Program are to prepare the graduates: (1) to leverage their knowledge of mathematics, science, engineering, and liberal arts to succeed as leaders in engineering and technology industries and in R&D positions in industry and academia; (2) to build broad knowledge and experience in interdisciplinary research and project management, and to apply critical thinking skills in developing and evaluating technological solutions addressing societal needs. The student outcomes of this program are the ABET (1) - (7) Student Outcomes as defined by the "ABET Criteria for Accrediting Engineering Programs" available online at <http://www.abet.org/accreditation-criteria-policies-documents/>

Note: For students still enrolled in the prior ScB in Engineering with tracks structure, please refer to the Archived Bulletin link on the left hand navigation for your requirements for the year you declared.

Please note that all students concentrating in Engineering need to file a concentration declaration using the University's ASK advising system. This declaration must be first reviewed by the relevant Concentration Advisor and then approved by the Director of Undergraduate Studies after assuring compliance with all relevant program and accreditation requirements.

Standard Program for the Sc.B. degree Mathematics Requirements

As mathematics is a cornerstone of all engineering programs, significant attention is given to early preparation in mathematics in engineering concentrations. It is recognized that students entering Brown will have different levels of mathematics preparation, and the following is offered as

general guidance, though the actual choices of courses should be made in consultation with an exploratory advisor. MATH 0190 (or MATH 0100), followed by MATH 0200 (or MATH 0180) is the preferred sequence of courses to be taken in the freshman year. MATH 0100 and MATH 0180 offer content like that in MATH 0190 and MATH 0200, respectively, but the latter courses are highly recommended for future engineering students because they offer more examples of relevance to the field. Students who would prefer, or require, a more introductory level calculus course may start the sequence with MATH 0090. They may then take MATH 0200 (or MATH 0180) in the subsequent semester and in that case, would receive engineering concentration credit equivalent to that which they would have received having taken MATH 0190 and MATH 0200. However, students who find that the step up from MATH 0090 to MATH 0200 is too challenging, have a choice to take MATH 0190 (or MATH 0100) upon completion of MATH 0090, but in this case, MATH 0090 would not carry engineering concentration credit and the student would then need to take MATH 0200 (or MATH 0180) in the sophomore year.

Students who have taken Advanced Placement (AP) calculus courses in high school and/or have shown proficiency through AP examinations may start the calculus sequence at a higher level than that suggested above. If a student has AP credit and accepts to use it, it then allows the student to place out of MATH 0190 (or MATH 0100). These students should enroll in the appropriate higher-level math course, e.g., MATH 0200 (or MATH 0180) or possibly MATH 0350 (a more theoretical course that covers similar material). Although it is impossible to place out of MATH 0200 or MATH 0350 with AP credit, we recognize that some students enter with an even higher level of preparation. Those students are advised to enroll in MATH 0520 (Linear Algebra), or MATH 0540 (Honors Linear Algebra), and take their second freshman mathematics course at a higher level, for example, MATH 1460 (Complex Analysis), MATH 1210 (Probability), or MATH 1220 (Mathematical Statistics). Alternatively, for some engineering concentrations, this second MATH credit requirement may be satisfied by taking a course from the Applied Mathematics Department, such as APMA 0350 (Applied Ordinary Differential Equations), APMA 0360 (Applied Partial Differential Equations), APMA 1650 (Statistical Inference) or APMA 1210 (Operations Research: Deterministic Models) if one of those courses listed is not taken for two APMA concentration credits. Details regarding the mathematics requirement for each concentration are listed in the corresponding programs.

Advanced Placement

Courses that have been taken at the secondary school level are typically only used for placement into the appropriate course level at Brown. The examples of how this can be done in mathematics are given above, and there are other instances (such as in selection of the appropriate introductory chemistry course) where AP credit is considered. It should be noted, however, that advanced placement credits cannot be used to substitute for any Engineering concentration requirements; they are instead used to ensure that students are placed into the correct level of courses.

Transfer Credits

Some students will also complete courses at other universities during the time they are Brown students (sometimes during summers while they are not in residence at Brown; sometimes during a junior semester abroad). Students who have successfully completed college courses elsewhere may apply to the University for transfer credit. (See the "Study Elsewhere" section of the University Bulletin for procedures). In addition to the general rules governing such transfers, there are specific rules governing courses that will be offered as satisfying Engineering concentration requirements.

If the course proposed for transfer credit is offered by another department at Brown (i.e., that it carries a course number that does not start with ENGN), then the equivalent of the course must be established by that other department. This is done by submitting a formal request through the ASK system (https://ask.brown.edu/transfer_credits/information/index). Once this approval has been received from the other department, the student's internal transcript will show the equivalence and the course in question can be shown in the Engineering concentration declaration as having been completed elsewhere. If the equivalence to a Brown

course is not approved, then there may still be “unassigned credit” given for the course. In this case, the situation relative to how it does or does not count for concentration credit needs to be discussed with the Concentration Advisor. In rare cases, students may petition the Engineering Concentration Committee to use courses that do not have an equivalent offered at Brown in order to meet a concentration requirement. Substitutions of this nature can only be approved if the student’s overall program meets published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses to meet relevant accreditation requirements. Students should consult their Concentration Advisor for assistance with drafting a petition. The decision whether to award concentration credit is made by majority vote of the Engineering Concentration Committee.

If the student wishes to transfer a course taken outside of Brown that would normally carry an Engineering course number, the sequence is a bit different. First, the student needs to fill out an Engineering Transfer Credit Approval Request (see <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad/>)). This routes the request to the relevant Brown Engineering faculty member for approval. Once this has been obtained, then transfer approval is requested through the ASK system, as described above. This process ensures that the transcript will capture the equivalence of the externally completed course.

Substitutions for Required Courses

Students may petition the Engineering Concentration Committee to substitute a course in place of a defined concentration requirement. Such substitutions can only be approved if the student’s modified program continues to meet the published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses needed to meet accreditation requirements. If the substitution involves taking an equal or higher level course in substantially the same area, whether at Brown or elsewhere, it can be approved by the Concentration Advisor without requiring a formal petition to the Concentration Committee. (For courses taken elsewhere, the credit must be officially transferred as described above.) Students wishing to make substitutions of a broader nature should consult their Concentration Advisor for assistance in drafting their petition to the Engineering Concentration Committee. Such petitions may be approved by a majority vote of the Committee.

1. Core Courses:

ENGN 0030	Introduction to Engineering	1
or ENGN 0031	Honors Introduction to Engineering	
or ENGN 0032	Introduction to Engineering: Design	
ENGN 0040	Engineering Statics and Dynamics	1
ENGN 0410	Materials Science	1
ENGN 0510	Electricity and Magnetism	1
ENGN 0520	Electrical Circuits and Signals	1
ENGN 0720	Thermodynamics	1
ENGN 0310	Mechanics of Solids and Structures	1
or ENGN 0500	Digital Computing Systems	
or ENGN 0810	Fluid Mechanics	
or CSCI 0200	Program Design with Data Structures and Algorithms	
CHEM 0330	Equilibrium, Rate, and Structure	1
or MATH 0520	Linear Algebra	
or MATH 0540	Linear Algebra With Theory	
or APMA 0360	Applied Partial Differential Equations I	
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
or MATH 0100	Single Variable Calculus, Part II	
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
or MATH 0180	Multivariable Calculus	
or MATH 0350	Multivariable Calculus With Theory	

APMA 0350	Applied Ordinary Differential Equations	1
APMA 1650	Statistical Inference I ¹	1
or APMA 1710	Information Theory	
or CSCI 1450	Advanced Introduction to Probability for Computing and Data Science	
CSCI 0150	Introduction to Object-Oriented Programming and Computer Science ²	1
or CSCI 0111	Computing Foundations: Data	
or CSCI 0170	Computer Science: An Integrated Introduction	
or CSCI 0190	Accelerated Introduction to Computer Science	
or APMA 0160	Introduction to Scientific Computing	
or ENGN 1931Z	Interfaces, Information and Automation	

2. Upper-Level Electrical Engineering Curriculum

ENGN 1570	Linear System Analysis	1
ENGN 1620	Analysis and Design of Electronic Circuits	1
ENGN 1630	Digital Electronics Systems Design	1
PHYS 0790	Physics of Matter	1
or PHYS 1410	Quantum Mechanics A	

3. Electrical Engineering Specialization - Complete at least three courses from the following groups:

At least one advanced Electrical Engineering foundations course:

ENGN 1230	Instrumentation Design
ENGN 1580	Communication Systems
ENGN 1590	Semiconductor Devices
ENGN 1600	Design and Implementation of Digital Integrated Circuits

ENGN 1610	Image Understanding
ENGN 1640	Design of Computing Systems

Up to two other Electrical Engineering courses ³

ENGN 1220	Neuroengineering
ENGN 1560	Applications in Microwave Communications

ENGN 1650	Embedded Microprocessor Design ⁴
ENGN 1680	Design and Fabrication of Semiconductor Devices

ENGN 1690	Photonics Devices and Sensors
ENGN 1730	Lasers and Nonlinear Optics

ENGN 1930B	Biomedical Optics
ENGN 1931A	Photovoltaics Engineering

ENGN 1931F	Introduction to Power Engineering
ENGN 1931I	Design of Robotic Systems

ENGN 1931Y	Control Systems Engineering
ENGN 1931Z	Interfaces, Information and Automation

Up to one interdisciplinary engineering science course: ⁵

CLPS 1491	Neural Modeling Laboratory
CLPS 1520	Computational Vision

ENGN 1370	Advanced Engineering Mechanics
ENGN 1450	Properties and Processing of Electronic Materials

NEUR 2110	Statistical Neuroscience
PHYS 1420	Quantum Mechanics B

4. Capstone Design: At least one course from the following: ⁶

ENGN 1650	Embedded Microprocessor Design ⁴
or ENGN 1000	Projects in Engineering Design I
or ENGN 1001	Projects in Engineering Design II

5. General Education Requirement: At least four approved courses must be taken in humanities and social sciences

Total Credits	21

¹ Another APMA/MATH course, such as MATH 0520 or APMA 0360, can be used in consultation with the Concentration Advisor, provided ENGN 1580 is taken in the upper-level Electrical Engineering program.

² ENGN 1931Z may replace CSCI 0150 or meet an upper-level elective requirement, but not both.

³ Other Electrical Engineering foundations courses can also be taken, as well as a 2000-level Electrical Engineering graduate course, such as ENGN 2500, ENGN 2520, ENGN 2530, ENGN 2560, ENGN 2912K.

⁴ ENGN 1650 cannot be counted as an elective and capstone simultaneously. It can only be either elective or capstone.

⁵ Or CSCI course beyond CSCI 0200, subject to Concentration Advisor approval.

⁶ Subject to approval by the Concentration Advisor, an independent study course (ENGN 1972/ENGN 1973) may be used to fulfill the Engineering Capstone Design requirement. To qualify for such approval, the independent study project must: (1) contain a significant and definable design component; (2) be based on the knowledge and skills acquired in earlier course work; (3) incorporate appropriate engineering standards; and (4) address multiple realistic constraints. To request approval, please complete the online form available at <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study/>)

Special Sc.B. Concentrations (non-accredited):

In addition to the standard programs described above, students may also petition the Engineering Concentration Committee to pursue a special engineering Sc.B. degree of their own design. Such special Sc.B. programs are not ABET-accredited. Students with a special concentration will receive an Sc.B. degree in engineering, but a specific area of specialization will not be noted on their transcript. A special Sc.B. concentration is intended to prepare graduates for advanced study in engineering or for professional practice, but in an area that is not covered by one of the existing Sc.B. programs. Accordingly, special concentration programs are expected to consist of a coherent set of courses with breadth, depth and rigor comparable to an accredited degree. A total of 21 engineering, mathematics, and basic science courses are required. The program must include at least 3 courses in mathematics, at least 2 courses in physical or life sciences; and at least 12 courses in engineering. At least five of the engineering courses must be upper level courses, and one must be a capstone design course or independent study, which must be advised or co-advised by a member of the regular engineering faculty. Note that not all Engineering courses may be used to meet Sc.B. requirements: for example, the courses not allowed to count toward the A.B. will not qualify. Petitions should be prepared in consultation with an engineering faculty advisor, who will submit the petition to the Engineering Concentration Committee. Petitions must include: (i) a statement of the objectives of the degree program, and an explanation of how the courses in the program meet these objectives; (ii) course descriptions for any courses in the program that are not part of standard Sc.B. Engineering concentrations; (iii) a detailed description of any independent study courses used for concentration credit, signed by the faculty advisor for this course; and (iv) an up-to-date internal transcript.

Professional Track

While we do not give course credit for internships, we officially recognize their importance via the optional Professional Tracks. The requirements for the professional tracks include all those of the standard tracks, as well as the following: Students must complete full-time professional experiences (or part-time experiences of equivalent total effort) doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts:

- Describe the organization you worked in and the nature of your responsibilities.
- Which courses were put to use in your work?
- Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your work experience?
- What are the topics from these courses that would have helped you if you had been more familiar with them?
- What topics would have been helpful in preparation for this work experience that you did not learn at Brown?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did something you would like to continue doing once you graduate? Explain.
- Would you recommend your work experience to other Brown students? Explain.

The reflective essays are subject to the approval of the student's Concentration Advisor.

Entry to the Professional Track requires a simple application form to be completed by the student and approved by the Concentration Advisor at the time of the concentration declaration. If the student has not yet declared a concentration, the form may be approved by the Chair of the Concentration Committee. The Concentration Advisor will certify that all Professional Track students have completed the necessary internships and will grant approval for the associated reflective essays. All other requirements remain identical to those in the standard tracks in the concentrations.

Degrees with Honors in Engineering

Honors are granted by the University to students whose work in a field of concentration has demonstrated superior quality and culminated in an 'Honors Thesis of Distinction.' Honors recipients in the School of Engineering must meet the following criteria: (1) Demonstrate a strong academic record (60% A's or "S with Distinction" in their concentration through the seventh semester); (2) Propose and execute an independent research project under the guidance of a faculty member; (3) Complete a written thesis to the satisfaction of the Honors Program Committee; (4) Give a scientific/technical presentation at the Undergraduate Research Symposium in the spring semester; and (5) Fulfill all deadlines for applying for or completing honors to the satisfaction of his/her research advisor and the Honors Program Committee.

Engineering

The concentration in Engineering equips students with a solid foundation for careers in engineering, to advance the knowledge base for future technologies, and to merge teaching, scholarship, and practice in the pursuit of solutions to human needs. The concentration offers one standard Bachelor of Arts (A.B.) program and eight Bachelor of Science (Sc.B.) degree programs. Of these, the Sc.B. programs in biomedical, chemical, computer, electrical, environmental, materials, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET (<http://www.abet.org/>). The engineering physics program is also offered, but is not accredited by ABET. Other programs leading to the Sc.B. or A.B. degrees in Engineering may be designed in consultation with a faculty advisor. These programs must meet the general requirements for concentration programs in the School of Engineering. Students interested in an individualized program should consult with an Engineering faculty member willing to serve as an advisor and obtain the approval of the Engineering Concentration Committee.

Learn more about the Engineering Sc.B. degree program (<https://engineering.brown.edu/undergraduate/concentrations/engineering-scb/>).

Learn more about the Engineering A.B. degree program (<https://engineering.brown.edu/undergraduate/concentrations/bachelor-arts/>).

Please note that all students concentrating in Engineering need to file a concentration declaration using the University's ASK advising system. This declaration must be first reviewed by the relevant Concentration Advisor and then approved by the Director of Undergraduate Studies

after assuring compliance with all relevant program and accreditation requirements.

Mathematics Requirements

As mathematics is a cornerstone of all engineering programs, significant attention is given to early preparation in mathematics in engineering concentrations. It is recognized that students entering Brown will have different levels of mathematics preparation, and the following is offered as general guidance, though the actual choices of courses should be made in consultation with an exploratory advisor. MATH 0190 (or MATH 0100), followed by MATH 0200 (or MATH 0180) is the preferred sequence of courses to be taken in the freshman year. MATH 0100 and MATH 0180 offer content like that in MATH 0190 and MATH 0200, respectively, but the latter courses are highly recommended for future engineering students because they offer more examples of relevance to the field. Students who would prefer, or require, a more introductory level calculus course may start the sequence with MATH 0090. They may then take MATH 0200 (or MATH 0180) in the subsequent semester and in that case, would receive engineering concentration credit equivalent to that which they would have received having taken MATH 0190 and MATH 0200. However, students who find that the step up from MATH 0090 to MATH 0200 is too challenging, have a choice to take MATH 0190 (or MATH 0100) upon completion of MATH 0090, but in this case, MATH 0090 would not carry engineering concentration credit and the student would then need to take MATH 0200 (or MATH 0180) in the sophomore year.

Students who have taken Advanced Placement (AP) calculus courses in high school and/or have shown proficiency through AP examinations may start the calculus sequence at a higher level than that suggested above. If a student has AP credit and accepts to use it, it then allows the student to place out of MATH 0190 (or MATH 0100). These students should enroll in the appropriate higher-level math course, e.g., MATH 0200 (or MATH 0180) or possibly MATH 0350 (a more theoretical course that covers similar material). Although it is impossible to place out of MATH 0200 or MATH 0350 with AP credit, we recognize that some students enter with an even higher level of preparation. Those students are advised to enroll in MATH 0520 (Linear Algebra), or MATH 0540 (Honors Linear Algebra), and take their second freshman mathematics course at a higher level, for example, MATH 1260 (Complex Analysis), MATH 1610 (Probability), or MATH 1620 (Mathematical Statistics). Alternatively, for some engineering concentrations, this second MATH credit requirement may be satisfied by taking a course from the Applied Mathematics Department, such as APMA 0350 (Applied Ordinary Differential Equations), APMA 0360 (Applied Partial Differential Equations), APMA 1650 (Statistical Inference) or APMA 1210 (Operations Research: Deterministic Models) if one of those courses listed is not taken for two APMA concentration credits. Details regarding the mathematics requirement for each concentration are listed in the corresponding programs.

Advanced Placement

Courses that have been taken at the secondary school level are typically only used for placement into the appropriate course level at Brown. The examples of how this can be done in mathematics are given above, and there are other instances (such as in selection of the appropriate introductory chemistry course) where AP credit is considered. It should be noted, however, that advanced placement credits cannot be used to substitute for any Engineering concentration requirements; they are instead used to ensure that students are placed into the correct level of courses.

Transfer Credits

Some students will also complete courses at other universities during the time they are Brown students (sometimes during summers while they are not in residence at Brown; sometimes during a junior semester abroad). Students who have successfully completed college courses elsewhere may apply to the University for transfer credit. (See the "Study Elsewhere" section of the University Bulletin for procedures). In addition to the general rules governing such transfers, there are specific rules governing courses that will be offered as satisfying Engineering concentration requirements.

If the course proposed for transfer credit is offered by another department at Brown (i.e., that it carries a course number that does not start with ENGN), then the equivalent of the course must be established by that other department. This is done by submitting a formal request through the ASK system (https://ask.brown.edu/transfer_credits/information/index). Once this approval has been received from the other department, the student's internal transcript will show the equivalence and the course in question can be shown in the Engineering concentration declaration as having been completed elsewhere. If the equivalence to a Brown course is not approved, then there may still be "unassigned credit" given for the course. In this case, the situation relative to how it does or does not count for concentration credit needs to be discussed with the Concentration Advisor. In rare cases, students may petition the Engineering Concentration Committee to use courses that do not have an equivalent offered at Brown in order to meet a concentration requirement. Substitutions of this nature can only be approved if the student's overall program meets published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses to meet relevant accreditation requirements. Students should consult their Concentration Advisor for assistance with drafting a petition. The decision whether to award concentration credit is made by majority vote of the Engineering Concentration Committee.

If the student wishes to transfer a course taken outside of Brown that would normally carry an Engineering course number, the sequence is a bit different. First, the student needs to fill out an Engineering Transfer Credit Approval Request (see <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad/>)). This routes the request to the relevant Brown Engineering faculty member for approval. Once this has been obtained, then transfer approval is requested through the ASK system, as described above. This process ensures that the transcript will capture the equivalence of the externally completed course.

Substitutions for Required Courses

Students may petition the Engineering Concentration Committee to substitute a course in place of a defined concentration requirement. Such substitutions can only be approved if the student's modified program continues to meet the published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses needed to meet accreditation requirements. If the substitution involves taking an equal or higher level course in substantially the same area, whether at Brown or elsewhere, it can be approved by the Concentration Advisor without requiring a formal petition to the Concentration Committee. (For courses taken elsewhere, the credit must be officially transferred as described above.) Students wishing to make substitutions of a broader nature should consult their Concentration Advisor for assistance in drafting their petition to the Engineering Concentration Committee. Such petitions may be approved by a majority vote of the Committee.

Standard Program for the A.B. Degree

Please note that the A.B. degree program is not accredited by ABET. Candidates for the Bachelor of Arts (A.B.) degree with a concentration in Engineering must complete at least eight approved Engineering courses. The eight courses must include at least two 1000-level Engineering courses. Of these two 1000-level courses, one must be a design course (ideally capstone or any design course in accredited Sc.B. programs) or be an independent study course that incorporates elements of student project design (must meet Brown course hour requirements), and the other course would be any 1000-level advanced (with pre-requisites) engineering in-classroom experience course. The set of Engineering courses must be chosen with careful attention to the prerequisites of the 1000-level courses.

Not all engineering courses may be used to satisfy the Engineering course requirement for the A.B. degree. For example, the following courses cannot be used to satisfy the Engineering course requirement for the A.B. degree: ENGN 0020, ENGN 0090, ENGN 0260, ENGN 0900, ENGN 0930A, ENGN 0930C, ENGN 0130, ENGN 0610,* ENGN 0620,* ENGN 1010, ENGN 1800, ENGN 1931J, ENGN 1931Q,

ENGN 1931W, ENGN 1932M, ENGN 2110, ENGN 2120, ENGN 2130, ENGN 2140, ENGN 2150, ENGN 2160, ENGN 2180. Therefore, the program of study must be developed through consultation with the Concentration Advisor.

The A.B. program also requires preparation in Mathematics equivalent to MATH 0200 and APMA 0350, as well as at least one college-level science course from the general areas of chemistry (except CHEM 0100), biology, physics, or geological sciences. A programming course is also recommended, but not required. The entire program is subject to approval by an Engineering Concentration Advisor and the Director of Undergraduate Programs in Engineering. Note: Students who completed APMA 0330 prior to academic year 2021-22 may count that course as satisfying the APMA 0350 requirement.

* course will be reevaluated in the 2024-25 academic year

Professional Tracks

While we do not give course credit for internships, we officially recognize their importance via the optional Professional Tracks. The requirements for the professional tracks include all those of the standard tracks, as well as the following: Students must complete full-time professional experiences (or part-time experiences of equivalent total effort) doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts:

- Describe the organization you worked in and the nature of your responsibilities.
- Which courses were put to use in your work?
- Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your work experience?
- What are the topics from these courses that would have helped you if you had been more familiar with them?
- What topics would have been helpful in preparation for this work experience that you did not learn at Brown?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did something you would like to continue doing once you graduate? Explain.
- Would you recommend your work experience to other Brown students? Explain.

The reflective essays are subject to the approval of the student's Concentration Advisor.

Entry to the Professional Track requires a simple application form to be completed by the student and approved by the Concentration Advisor at the time of the concentration declaration. If the student has not yet declared a concentration, the form may be approved by the Chair of the Concentration Committee. The Concentration Advisor will certify that all Professional Track students have completed the necessary internships and will grant approval for the associated reflective essays. All other requirements remain identical to those in the standard tracks in the concentrations.

Degrees with Honors in Engineering

Honors are granted by the University to students whose work in a field of concentration has demonstrated superior quality and culminated in an 'Honors Thesis of Distinction.' Honors recipients in the School of Engineering must meet the following criteria: (1) Demonstrate a strong academic record (60% A's or "S with Distinction" in their concentration through the seventh semester); (2) Propose and execute an independent research project under the guidance of a faculty member; (3) Complete a written thesis to the satisfaction of the Honors Program Committee; (4) Give a scientific/technical presentation at the Undergraduate Research Symposium in the spring semester; and (5) Fulfill all deadlines for applying

for or completing honors to the satisfaction of his/her research advisor and the Honors Program Committee.

Engineering and Physics

The program is designed to ensure that students take a significant portion of the usual curriculum in Engineering and Physics, obtain substantial laboratory experience, and take several upper-level elective courses, focusing on applied science. Students may take either the standard Physics or Engineering programs during their first and second years and then switch to this combined program. The Sc.B. degree program in Engineering and Physics is not accredited by ABET and is mostly intended to prepare students for graduate study in applied science and engineering. Since the requirements include both quantum mechanics with the physics concentrators and analog electronics with EE concentrators, as well as more mathematics than either Physics or Engineering, it is one of the more demanding programs at Brown.

The following standard program assumes that a student begins mathematics courses at Brown with MATH 0100 or MATH 0190. Students who begin in MATH 0200 can substitute an additional science, engineering or higher-level mathematics course for the MATH 0190 requirement. To accommodate the diverse preparation of individual students, variations of the following sequences and their prerequisites are possible with permission of the appropriate concentration advisor and the instructors involved. We recommend that each student's degree program be submitted for prior approval (typically in semester four) and scrutinized for compliance (in semester seven) by one faculty member from the Department of Physics and one faculty member from the School of Engineering.

Select one of the following two course sequences: 2

ENGN 0040 & ENGN 0030 or ENGN 0031 or ENGN 0032	Engineering Statics and Dynamics and Introduction to Engineering Honors Introduction to Engineering Introduction to Engineering: Design	
PHYS 0050 & PHYS 0060	Foundations of Mechanics and Foundations of Electromagnetism and Modern Physics	
PHYS 0070 & PHYS 0160	Analytical Mechanics and Introduction to Relativity, Waves and Quantum Physics	
MATH 0190 or MATH 0100	Single Variable Calculus, Part II (Physics/ Engineering) Single Variable Calculus, Part II	1
MATH 0200 or MATH 0180 or MATH 0350	Multivariable Calculus (Physics/ Engineering) Multivariable Calculus Multivariable Calculus With Theory	1
Select three additional higher-level math, applied math, or mathematical physics (PHYS 0720) courses.		3
CSCI 0111 or APMA 0160 or CSCI 0150 or CSCI 0170 or CSCI 0190	Computing Foundations: Data Introduction to Scientific Computing Introduction to Object-Oriented Programming and Computer Science Computer Science: An Integrated Introduction Accelerated Introduction to Computer Science	1
ENGN 0510 or PHYS 0470	Electricity and Magnetism Electricity and Magnetism	1
ENGN 1690 or PHYS 1510	Photonics Devices and Sensors Advanced Electromagnetic Theory	1
PHYS 0500 or ENGN 1370	Advanced Classical Mechanics Advanced Engineering Mechanics	1
PHYS 1410	Quantum Mechanics A	1
PHYS 1420	Quantum Mechanics B	1
PHYS 1530	Thermodynamics and Statistical Mechanics	1

or ENGN 0720	Thermodynamics	
ENGN 1620	Analysis and Design of Electronic Circuits	1
CHEM 0330	Equilibrium, Rate, and Structure	1
or ENGN 0310	Mechanics of Solids and Structures	
or ENGN 0810	Fluid Mechanics	
or PHYS 1600	Computational Physics	
ENGN 0410	Materials Science	1
or ENGN 1690	Photonics Devices and Sensors	
or PHYS 0560	Experiments in Modern Physics	
PHYS 1560	Modern Physics Laboratory	1
or ENGN 1590	Semiconductor Devices	
or an approved 2000-level engineering or physics course.		
A thesis under the supervision of a physics or engineering faculty member:		1
PHYS 1990	Senior Conference Course	
or ENGN 1970	Independent Studies in Engineering	
or ENGN 1971	Independent Study in Engineering	
or ENGN 1972	Independent Study in Engineering Design	
or ENGN 1973	Independent Study in Engineering Design	

* Students are also encouraged to take courses dealing with the philosophical, ethical, or political aspects of science and technology.

Total Credits 19

English

The English Department fosters the study of British, American, and Anglophone literature—old and new—in ways that are both intensive and open. We study how English literature works, how we understand and appreciate it, and how we write about it. We offer a wide array of courses in poetry, drama, fiction, creative nonfiction, film, digital media, and theory. All our courses emphasize the development of student skills in writing, textual analysis, and argument. The department's faculty members are deeply committed to undergraduate teaching and advising. You will find considerable diversity in our critical methods, including cross-disciplinary approaches that relate the study of literature to history, politics, science, as well as to other art forms. We encourage students in our classes likewise to forge their own new ways of understanding literature and culture.

In addition to the standard English concentration, we offer an English concentration track in the practice of Nonfiction Writing. The concentration in English and the English/Nonfiction track follow the same core requirements, and students in the English concentration may elect Nonfiction Writing courses as electives. We invite applications from qualified juniors to the honors programs in both English and Nonfiction.

One of the largest humanities concentrations at Brown, English provides a strong foundation for a liberal education and for employment in many sectors, especially those that centrally involve writing and working with texts (in any form). In addition to authorship, scholarship, and teaching, these include: journalism, publishing, advertising, visual media, consulting, public relations, public service, finance, government, corporate research, and administration. Our English concentrators routinely go on to law, medical, and professional schools as well as to graduate education in literature and the arts.

About the Concentration

We encourage students interested in concentrating in English to visit the department offices at 70 Brown Street and speak with a concentration advisor (<https://english.brown.edu/faculty/>). Students in English courses who are considering an English concentration are welcome to make an appointment to speak with their instructor. Concentration programs must be approved by a concentration advisor.

Concentration Requirements (10 courses ¹):

1. ONE course in "How Literature Matters" (ENGL0100, 0101): 1

Addressing topics about which professors are especially passionate, these introductory courses aim to deepen and refine students' understanding of how literature matters: aesthetically, ethically, historically and politically. Students not only engage with larger questions about literature's significance, exploring the particular kinds of insights and thinking it is especially suited for conveying, they also gain a deeper awareness of the critical methods we use to understand and analyze it, engaging with matters of form, genre and media. Finally, these courses help students develop their skills as close, careful readers of literary form and language.

ENGL 0100A	How To Read A Poem
ENGL 0100C	Altered States
ENGL 0100D	Matters of Romance
ENGL 0100F	Devils, Demons, Do-Gooders
ENGL 0100G	The Literature of Identity
ENGL 0100J	Cultures and Countercultures: The American Novel after World War II
ENGL 0100M	Writing War
ENGL 0100N	City Novels
ENGL 0100P	Love Stories
ENGL 0100Q	How Poems See
ENGL 0100R	American Histories, American Novels
ENGL 0100S	Being Romantic
ENGL 0100T	The Simple Art of Murder
ENGL 0100U	Serial Fictions
ENGL 0100V	Inventing Asian American Literature
ENGL 0100W	Literature Reformatted
ENGL 0100Y	Do the Right Thing
ENGL 0101A	Independence and Modern Literature
ENGL 0101B	Earth Poetics: Literature and Climate Change
ENGL 0101F	American Realism

2. ONE course in Medieval and Renaissance Literatures (Pre-1700): 1

These courses, which center on Medieval and Renaissance literary works, cast light on periods that can come across to us as both familiar and strange. They focus our attention on how literatures from these periods depict concepts such as aesthetics, romance, gender, sexuality, race, power and politics in ways that are like and unlike how we tend to think of them today—on how pre-modern or early modern works can both defamiliarize the categories of experience and identity we tend to take for granted and also suggest something of their origins. Several courses under this rubric will also engage with recent literary and filmic adaptations of works from these eras, exploring how many such works continue to function as vibrant and at times ambivalent inspirations for the literary imaginings of later periods.

3. ONE course in Literatures of Modernity (Post-1700): 1

These courses explore the many strands of writing in English that have emerged from the eighteenth century through the present, shaping the contemporary world. These literatures reflect on political, economic, and intellectual history, from the idea of the nation and the structures of capital through the rise and dissolution of empire and the emergence of postcolonial states, including the forms of race, gender and sexuality that cut across them. Courses also examine how aesthetic works can shape and critique their moment: they look at genres like the novel and short story, poetry, drama, essays, and new, hybrid forms that have arisen with expanding digital media; they also take up a multitude of literary movements whose influences remain with us today, including Romanticism, realism, naturalism, modernism, and post-modernism.

4. ONE course in Literatures of the Color Line:

1

In 1903, W. E. B. Du Bois famously proclaimed in "The Souls of Black Folk" that "The problem of the twentieth century is the problem of the color-line,—the relation of the darker to the lighter races of men in Asia and Africa, in America and the islands of the sea." Courses in this category explore the complex ways in which literary texts have addressed American histories of race, ethnicity, and empire. They may do so from the vantage point of ideas about difference and hierarchy that predate the modern conception of race and by engaging with earlier histories of conflict and contact. These courses explore issues of intersectionality as well, highlighting how race operates in relation to other structures of difference such as gender, sexuality and class.

ENGL 0100F	Devils, Demons, Do-Gooders
ENGL 0100N	City Novels
ENGL 0100S	Being Romantic
ENGL 0100V	Inventing Asian American Literature
ENGL 0101A	Independence and Modern Literature
ENGL 0150X	The Claims of Fiction
ENGL 0150Y	Brontës and Brontëism
ENGL 0700E	Postcolonial Literature
ENGL 0500R	Slavery and American Literature
ENGL 0510F	Literature of the American Renaissance
ENGL 0700G	American Fiction and Mass Culture
ENGL 0700U	Modernism and Race
ENGL 0710B	African American Literature and the Legacy of Slavery
ENGL 0710Q	American Literature in the Era of Segregation
ENGL 0710V	Death and Dying in Black Literature
ENGL 0710W	Readings in Black and Queer
ENGL 0710X	Black Poetics
ENGL 0710Y	Literature of US Inequality, 1945-2020
ENGL 0800T	Introduction to Black Literary Theory
ENGL 1310H	The Origins of American Literature
ENGL 1511A	American Literature and the Civil War
ENGL 1511C	Lincoln, Whitman, and The Civil War
ENGL 1511P	Realism, Modernism, Postmodernism: The American Novel and its Traditions
ENGL 1710I	Harlem Renaissance: The Politics of Culture
ENGL 1710J	Modern African Literature
ENGL 1710K	Literature and the Problem of Poverty
ENGL 1710M	Nationalizing Narratives: Race, Nationalism, and the American Novel
ENGL 1710P	The Literature and Culture of Black Power Reconsidered
ENGL 1711D	Reading New York

ENGL 1711H	Lyric Concepts: The Question of Identity in Modern and Contemporary Poetry
ENGL 1711J	Art for an Undivided Earth / Transnational Approaches to Indigenous Art and Activism
ENGL 1711K	The Politics of Perspective: Post-war British Fiction
ENGL 1711L	Contemporary Black Women's Literature
ENGL 1711N	Monsters in our Midst: The Plantation and the Woods in Trans-American Literature
ENGL 1711O	Radical Pasts, Radical Futures: Literature and the Left
ENGL 1711S	James Baldwin
ENGL 1760U	American Modernism and its Aftermaths
ENGL 1760Y	Toni Morrison
ENGL 1761B	Narratives of Blackness in Latinx and Latin America
ENGL 1761E	Blackness and Being
ENGL 1761F	Toni Morrison
ENGL 1761G	Translational Echoes of the Korean War
ENGL 1761V	The Korean War in Color
ENGL 1762M	Caribbean Literature
ENGL 1762P	Lucille Clifton
ENGL 1900D	Literature and Politics
ENGL 1901J	Fanon and Spillers
ENGL 1950H	The Recent Novel and its Cultural Rivals

5. ONE course in Literary Theory and Cultural Critique:

1

The late-twentieth century saw a revolution in the field of literary studies in the United States, as critics turned their attention to the contextual and historical nature of our categories of knowledge. This turn to theory was influenced by developments in psychoanalysis, linguistics, philosophy, political theory and sociology and by the emergence of social movements that challenged such structures as patriarchy, homophobia, racism, imperialism, economic inequality, and environmental violence. The avenues of inquiry opened up brought an increased awareness of the implication of literature in the operations of power and ideology; a sense of the potential for literary modes of presentation to challenge and displace such operations; and a new attention to the role of gender, race, empire, class, and sexuality in the formation of the literary work. Courses that satisfy the Literary Theory and Cultural Critique requirement explore some dimension of these issues – either directly, taking as their primary focus a set of theoretical questions or debates, or indirectly, by examining a compelling topical question of social and political significance through works of literature and literary theory.

ENGL 0150W	Literature and the Visual Arts
ENGL 0700E	Postcolonial Literature
ENGL 0710L	Ishiguro, Amongst Others
ENGL 0710R	Poetry and Science
ENGL 0711B	Trans Cultural Production and Trans Studies
ENGL 0710W	Readings in Black and Queer
ENGL 0800T	Introduction to Black Literary Theory
ENGL 1140A	Intellectual Pleasures: Reading/Writing the Literary Text
ENGL 1190S	Poetics of Narrative
ENGL 1361S	Sexual Contracts in Renaissance Drama
ENGL 1511Y	Emily Dickinson and the Theory of Lyric Form
ENGL 1561D	Writing and the Ruins of Empire
ENGL 1710M	Nationalizing Narratives: Race, Nationalism, and the American Novel

ENGL 1711K	The Politics of Perspective: Post-war British Fiction
ENGL 1711J	Art for an Undivided Earth / Transnational Approaches to Indigenous Art and Activism
ENGL 1760J	Reading <i>Gravity's Rainbow</i>
ENGL 1761D	Hollywood and American Modernism from FDR to JFK
ENGL 1761L	Reading the Black Masses in Literature and Critical Practice
ENGL 1761Q	W. G. Sebald and Some Interlocutors
ENGL 1762D	Kubrick
ENGL 1900D	Literature and Politics
ENGL 1900J	Zoopoetics
ENGL 1900K	Reading Sex
ENGL 1900P	History of Criticism from Plato to Postmodernism
ENGL 1900Y	Medieval Manuscript Studies: Paleography, Codicology, and Interpretation
ENGL 1900Z	Neuroaesthetics and Reading
ENGL 1901H	The Late 60s: Film Countercultures
ENGL 1901L	Cronenberg/Lynch
ENGL 1901J	Fanon and Spillers
ENGL 1901Q	You Better Work: Sexuality, Labor, Blackness
ENGL 1901R	The Problem of Literary Study
ENGL 1950G	Reading Narrative Theory
ENGL 1950H	The Recent Novel and its Cultural Rivals
ENGL 2360Z	Shakespeare: a Politics of Love
ENGL 2761C	Black Internationalism and Its Discontents
ENGL 2561V	The Pursuit of Happiness: Transatlantic Literary Culture in the Long Eighteenth Century
ENGL 2900N	Ethical Turns in Psychoanalysis and Literature
ENGL 2900X	Postcolonial Theory
ENGL 2901D	War and the Politics of Cultural Memory
ENGL 2901K	Theory, Technics, Religion
ENGL 2901P	Black Feminism: Roots, Routes, Futures
6. FIVE electives ²	
Total Credits	10

¹ Each course may fulfill ONE requirement. Five courses must be 1000-level courses. With advisor approval, two of the ten required courses may be taken in departments other than English.

² Only TWO courses dealing primarily with the practice of writing at the 1000-level may be counted as electives.

ENGL0900 and ENGL0930 do not count toward the concentration, however they do fulfill prerequisites for upper-level Nonfiction courses.

One ENGL0200 may be counted toward the 10-course requirement only as an elective.

All substitutions and/or exceptions must be approved by the concentration advisor in consultation with the Director of Undergraduate Studies. A substitution or exception is not approved until specified in writing in the student's concentration file housed in the English Department.

English Concentration -- Nonfiction Writing Track (10 courses)

The English concentration also includes a Nonfiction Writing Track. The requirements are the same as 1 through 6 above, but three of the five electives must be 1000-level Nonfiction Writing courses (only ONE of which may be intermediate: ENGL1030, ENGL1050). Only THREE Nonfiction courses may count toward the track.

Honors in English

The English Honors program is intended for students who have been highly successful in their English concentration coursework and who want the opportunity to pursue a research project in more depth than is possible in an undergraduate seminar. The program is intended for those students with a strong desire to conduct independent research under the supervision of a thesis advisor and culminates in the writing of a thesis during the senior year.

Admission

Students apply to the Honors Program early in the second semester of their junior year. December or mid-year graduates may apply in their 6th semester, but are encouraged to apply during their 5th semester and write their theses alongside May graduates. Interested concentrators should speak to the Honors Advisor early in their junior year to discuss their plans. Specific deadlines for admission are announced annually and are available on the department website. Students who are studying off campus are expected to meet the application submission deadline.

Admission to the English Honors Program depends on evidence of ability and promise in the study of literature. To be eligible for admission, students must have received more As than Bs (and no Cs or below) in concentration courses completed. Students must complete an application; supply a brief writing sample, and request two letters of recommendation from English faculty with whom they have taken courses. If necessary, letters may come from faculty in related departments. Letters from teaching assistants may only serve as supporting recommendations. Candidates must also submit a one-page project proposal signed by the faculty member who has agreed to serve as the thesis advisor.

See procedures and application (<http://brown.edu/academics/english/english-honors-procedures/>) for more details.

December or mid-year graduates who wish to apply to honors have two options, but the first is highly encouraged:

Option 1:

In their 5th semester (Spring), students apply to the honors program along with the other juniors. Accepted students will be incorporated into the regular honors cohort and must meet the same deadlines: i.e. they must complete their theses at the same time as the other honors students (though for mid-years this will be at the end of their 7th semester). They register for ENGL 1991 English Honors Seminar in the Fall, and ENGL 1992 Senior Honors Thesis in the Spring.

Option 2:

In the 7th semester (the Spring of their final year), students take an independent study with their thesis advisor, under whose direction they will begin to research and write their theses. This course must be taken S/NC. In the 8th semester (the Fall of their final year), as they complete their theses, students take ENGL 1992 for a grade. Mid-year graduates should consult with the Honors Director for information about deadlines.

Requirements

The course requirements for the English Honors Program are the same as those for the regular concentration, with the following additions:

As part of regular coursework, and counting toward the concentration requirements, honors candidates must complete at least three upper-level seminars or comparable small courses in which students have the opportunity to do independent research, take significant responsibility for discussion, and do extensive scholarly and critical writing. Students are encouraged to include at least one graduate seminar in their program. (Permission to take a graduate course must be obtained from the instructor.) Honors candidates should discuss their proposed course of study with the Honors Advisor.

During the Fall and Spring of the senior year, honors candidates must complete two additional courses beyond the ten courses required by the regular concentration: ENGL 1991 and ENGL 1992. ENGL 1991 is the Senior Honors Seminar, in which students begin to research and write their theses, as well as meet to discuss their work. This is a mandatory S/NC course. ENGL 1992, the Senior Honors Thesis is an independent research course that must be taken for a grade.

Honors candidates must continue to receive more As than Bs in courses taken as part of the concentration. Courses completed with a grade of C will not count toward an Honors concentration. A student who receives such a grade and wishes to continue in the program must complete a comparable course with a grade higher than C.

The Honors Thesis

The Honors thesis is an extended essay, usually between 50 and 80 pages, written under the supervision of a department faculty advisor and second reader. (Where appropriate, the advisor or the reader, but not both, may be in another department.) The thesis may be an interdisciplinary or creative project, but it is usually an essay on a scholarly or critical problem dealing with works of literature in English. The specific topic and approach of the thesis are worked out between the student and the thesis advisor, with assistance from the student's second reader. This process should begin in the latter part of the student's junior year. A good way to get an idea of what sorts of projects are possible is to visit the Hay Library, which stores theses from previous years, or to meet with the Honors Advisor.

A prospectus describing the project and endorsed by the faculty advisor must be submitted to the Honors Advisor at the beginning of the senior year. At the end of the senior year fall term, a student must submit approximately 25 pages of draft material toward the thesis. Full thesis drafts are due by mid-March; final bound copies of the thesis are due in mid-April. Late theses will not be accepted for honors after the April deadline; students who hand in theses after the deadline but before the end of the term will receive a grade for the thesis course, but they will not be eligible for departmental honors. The completed thesis will be evaluated by the student's advisor and a second reader, each of whom provides written commentary and suggests a grade for ENGL 1992.

Evaluation

The English Department reviews the academic record as well as the thesis evaluations for each senior completing the Honors Program. Following a successful review, the student will be eligible to graduate with Honors in English.

Honors in Nonfiction Writing

The Nonfiction Writing Honors Program is intended for students who have been highly successful in their English concentration work. Specifically, it allows those who have an expressed and proven interest in nonfiction writing to pursue more completely a single project under the supervision of a first reader. The intention is to help students to complete work worthy of publication. The program culminates in the writing of a thesis during the senior year.

Admission

Students apply to the Nonfiction Writing Honors Program in the second semester of their junior year. December or mid-year graduates may apply in their 6th semester, but are encouraged to apply during their 5th semester and write their theses alongside May graduates. Interested concentrators should have already made contact with at least one member of the Nonfiction Writing faculty and should meet with the Honors Advisor early in their junior year to discuss their plans. Specific deadlines for admission are announced annually and are available on the department website. Students who are studying off campus are expected to meet the application submission deadline.

Admission to the Honors Program in Nonfiction Writing depends upon a student's demonstrated superior ability in nonfiction writing. Students must have taken either one intermediate and one advanced writing course, or two advanced writing courses by the end of their sixth semester and completed each of them with an S. To be eligible for admission, students must have earned more As than Bs (and no Cs or below) in other courses in the concentration plan. Students must submit an application, two letters of recommendation, a writing sample from an advanced writing course, and a project proposal.

See procedures and application (<http://brown.edu/academics/english/nonfiction-honors-procedures/>) for more details.

December or mid-year graduates who wish to apply for nonfiction honors have two options, but the first is highly encouraged:

Option 1:

In their 5th semester (Spring), students can apply to the nonfiction honors program along with the other juniors. Accepted students will be incorporated into the regular nonfiction honors cohort and must meet the same deadlines: i.e. they must complete their theses at the same time as the other honors students (though for mid-years this will be at the end of their 7th semester). They register for ENGL 1993 Nonfiction Honors Seminar in the Fall and ENGL 1994 Senior Honors Thesis in Nonfiction in the Spring.

Option 2:

In their 7th semester (the Spring of their final year) students take ENGL 1200 and in their 8th semester (the Fall of their final year) they take ENGL 1994. (Students choosing this option must consult with the Honors Advisor for information on deadlines.)

Requirements

Students in the Nonfiction Writing Honors Program take two additional courses beyond the ten courses required by the Nonfiction Writing Track -- ENGL 1993 Honors Seminar in Nonfiction Writing (with the Honors Advisor) and ENGL 1994 Senior Honors Thesis in Nonfiction Writing; the Honors track will bring to twelve the total number of required courses. The ENGL 1993 grade option must be S/NC; ENGL 1994 must be taken for a grade. Honors candidates should discuss their proposed course of study with the faculty member they choose to direct their thesis.

Honors candidates must continue to receive more As than Bs in courses taken as part of the concentration. Courses completed with a grade of C will not count toward an Honors concentration. A student who receives a "C" after admission to Nonfiction Honors and wishes to continue in the program must complete an additional course in a comparable subject area, with a grade higher than C.

The Honors Thesis

The Nonfiction Writing Honors thesis is an extended project, usually of between 50 and 80 pages, written under the supervision of one of the Nonfiction Writing faculty and a second reader (who can be from literature or another department). The specific topic and approach of the thesis are worked out between the student and the first reader, with assistance from the student's second reader. A good way to get an idea of what sorts of projects are possible is to visit the Hay Library, which stores theses from previous years, or to meet with the Honors Advisor. The work typically is in a genre chosen from Nonfiction Writing's spectrum: critical analysis, literary journalism, memoir, lyric essay, or narrative based on travel, science, history, or cultural critique.

Full thesis drafts are due by mid-March; final bound copies of the thesis are due in mid-April. Late theses will not be accepted for honors after the April deadline; students who hand in theses after the deadline and before the end of the term will receive a grade for the thesis course, but they will not be eligible for departmental honors. The completed thesis will be evaluated by its first reader and second reader, each of whom provides written commentary and suggests a grade for ENGL 1994.

Evaluation

The English Department reviews the academic record as well as the thesis evaluations for each senior completing the Nonfiction Writing Honors Program. Following a successful review, the student will be eligible to graduate with Honors in Nonfiction Writing.

Environmental Engineering

The Sc.B. program in Environmental Engineering provides students with the tools to develop sustainable solutions to complicated environmental problems and design real-world solutions that consider risk, sustainability, life-cycle principles, and environmental impacts. Environmental engineers use the principles of engineering, mathematics, biology, and chemistry to develop and implement engineering solutions to protect human health and the environment from the adverse impacts of environmental pollution. Their work includes water and wastewater treatment, air pollution control, soil and groundwater remediation, site characterization and risk assessment, life cycle assessment, and climate change mitigation.

The Environmental Engineering program is accredited by the Engineering Accreditation Commission of ABET: <http://www.abet.org>. Within a few years of graduation, graduates of the Brown Environmental

Engineering (EnvE) Program will: (1) Engage in continued learning through professional development, professional licensure, and service to the profession and society; (2) Achieve leadership positions or roles that advance environmental engineering practice; and (3) Pursue and successfully obtain an advanced graduate or professional degree in environmental engineering or a related discipline. The student outcomes of this program are intended to be those enumerated in items (1) - (7) Student Outcomes as defined by the "ABET Criteria for Accrediting Engineering Programs" available online at <http://www.abet.org/accreditation-criteria-policies-documents/>

Note: For students still enrolled with the prior ScB in Engineering with tracks structure, please refer to the Archived Bulletin link on the left hand navigation for your requirements for the year you declared.

Please note that all students concentrating in Engineering need to file a concentration declaration using the University's ASK advising system. This declaration must be first reviewed by the relevant Concentration Advisor and then approved by the Director of Undergraduate Studies after assuring compliance with all relevant program and accreditation requirements.

Standard Program for the Sc.B. degree

Mathematics Requirements

As mathematics is a cornerstone of all engineering programs, significant attention is given to early preparation in mathematics in engineering concentrations. It is recognized that students entering Brown will have different levels of mathematics preparation, and the following is offered as general guidance, though the actual choices of courses should be made in consultation with an exploratory advisor. MATH 0190 (or MATH 0100), followed by MATH 0200 (or MATH 0180) is the preferred sequence of courses to be taken in the freshman year. MATH 0100 and MATH 0180 offer content like that in MATH 0190 and MATH 0200, respectively, but the latter courses are highly recommended for future engineering students because they offer more examples of relevance to the field. Students who would prefer, or require, a more introductory level calculus course may start the sequence with MATH 0090. They may then take MATH 0200 (or MATH 0180) in the subsequent semester and in that case, would receive engineering concentration credit equivalent to that which they would have received having taken MATH 0190 and MATH 0200. However, students who find that the step up from MATH 0090 to MATH 0200 is too challenging, have a choice to take MATH 0190 (or MATH 0100) upon completion of MATH 0090, but in this case, MATH 0090 would not carry engineering concentration credit and the student would then need to take MATH 0200 (or MATH 0180) in the sophomore year.

Students who have taken Advanced Placement (AP) calculus courses in high school and/or have shown proficiency through AP examinations may start the calculus sequence at a higher level than that suggested above. If a student has AP credit and accepts to use it, it then allows the student to place out of MATH 0190 (or MATH 0100). These students should enroll in the appropriate higher-level math course, e.g., MATH 0200 (or MATH 0180) or possibly MATH 0350 (a more theoretical course that covers similar material). Although it is impossible to place out of MATH 0200 or MATH 0350 with AP credit, we recognize that some students enter with an even higher level of preparation. Those students are advised to enroll in MATH 0520 (Linear Algebra), or MATH 0540 (Honors Linear Algebra), and take their second freshman mathematics course at a higher level, for example, MATH 1460 (Complex Analysis), MATH 1210 (Probability), or MATH 1220 (Mathematical Statistics). Alternatively, for some engineering concentrations, this second MATH credit requirement may be satisfied by taking a course from the Applied Mathematics Department, such as APMA 0350 (Applied Ordinary Differential Equations), APMA 0360 (Applied Partial Differential Equations), APMA 1650 (Statistical Inference) or APMA 1210 (Operations Research: Deterministic Models) if one of those courses listed is not taken for two APMA concentration credits. Details regarding the mathematics requirement for each concentration are listed in the corresponding programs.

Advanced Placement

Courses that have been taken at the secondary school level are typically only used for placement into the appropriate course level at Brown. The examples of how this can be done in mathematics are given above, and there are other instances (such as in selection of the appropriate introductory chemistry course) where AP credit is considered. It should be noted, however, that advanced placement credits cannot be used to substitute for any Engineering concentration requirements; they are instead used to ensure that students are placed into the correct level of courses.

Transfer Credits

Some students will also complete courses at other universities during the time they are Brown students (sometimes during summers while they are not in residence at Brown; sometimes during a junior semester abroad). Students who have successfully completed college courses elsewhere may apply to the University for transfer credit. (See the "Study Elsewhere" section of the University Bulletin for procedures). In addition to the general rules governing such transfers, there are specific rules governing courses that will be offered as satisfying Engineering concentration requirements.

If the course proposed for transfer credit is offered by another department at Brown (i.e., that it carries a course number that does not start with ENGN), then the equivalent of the course must be established by that other department. This is done by submitting a formal request through the ASK system (https://ask.brown.edu/transfer_credits/information/index). Once this approval has been received from the other department, the student's internal transcript will show the equivalence and the course in question can be shown in the Engineering concentration declaration as having been completed elsewhere. If the equivalence to a Brown course is not approved, then there may still be "unassigned credit" given for the course. In this case, the situation relative to how it does or does not count for concentration credit needs to be discussed with the Concentration Advisor. In rare cases, students may petition the Engineering Concentration Committee to use courses that do not have an equivalent offered at Brown in order to meet a concentration requirement. Substitutions of this nature can only be approved if the student's overall program meets published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses to meet relevant accreditation requirements. Students should consult their Concentration Advisor for assistance with drafting a petition. The decision whether to award concentration credit is made by majority vote of the Engineering Concentration Committee.

If the student wishes to transfer a course taken outside of Brown that would normally carry an Engineering course number, the sequence is a bit different. First, the student needs to fill out an Engineering Transfer Credit Approval Request (see <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad/>)). This routes the request to the relevant Brown Engineering faculty member for approval. Once this has been obtained, then transfer approval is requested through the ASK system, as described above. This process ensures that the transcript will capture the equivalence of the externally completed course.

Substitutions for Required Courses

Students may petition the Engineering Concentration Committee to substitute a course in place of a defined concentration requirement. Such substitutions can only be approved if the student's modified program continues to meet the published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses needed to meet accreditation requirements. If the substitution involves taking an equal or higher level course in substantially the same area, whether at Brown or elsewhere, it can be approved by the Concentration Advisor without requiring a formal petition to the Concentration Committee. (For courses taken elsewhere, the credit must be officially transferred as described above.) Students wishing to make substitutions of a broader nature should consult their Concentration Advisor for assistance in drafting their petition to the

Engineering Concentration Committee. Such petitions may be approved by a majority vote of the Committee.

1. Core Courses:

ENGN 0030	Introduction to Engineering	1
or ENGN 0031	Honors Introduction to Engineering	
or ENGN 0032	Introduction to Engineering: Design	
ENGN 0040	Engineering Statics and Dynamics	1
ENGN 0410	Materials Science	1
or ENGN 1490	Biomaterials	
ENGN 0490	Fundamentals of Environmental Engineering	1
CSCI 0111	Computing Foundations: Data	1
or CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
or CSCI 0170	Computer Science: An Integrated Introduction	
or CSCI 0190	Accelerated Introduction to Computer Science	
or ENGN 0500	Digital Computing Systems	
or ENGN 0510	Electricity and Magnetism	
or ENGN 0520	Electrical Circuits and Signals	
ENGN 0720	Thermodynamics	1
ENGN 0810	Fluid Mechanics	1
BIOL 0200	The Foundation of Living Systems	1
CHEM 0330	Equilibrium, Rate, and Structure	1
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
or MATH 0100	Single Variable Calculus, Part II	
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
or MATH 0180	Multivariable Calculus	
or MATH 0350	Multivariable Calculus With Theory	
APMA 0350	Applied Ordinary Differential Equations ¹	1
or APMA 0360	Applied Partial Differential Equations I	
APMA 1650	Statistical Inference I	1
or APMA 1655	Honors Statistical Inference I	
2. Advanced Science Courses		
EEPS 1370	Environmental Geochemistry	1
or EEPS 0850	Weather and Climate	
or EEPS 1310	Global Water Cycle	
or EEPS 1320	Introduction to Geographic Information Systems for Environmental Applications	
or EEPS 1330	Global Environmental Remote Sensing	
or EEPS 1430	Principles of Planetary Climate	
or EEPS 1520	Ocean Circulation and Climate	
or EEPS 1710	Remote Sensing of Earth and Planetary Surfaces	
BIOL 0420	Principles of Ecology	1
or BIOL 0480	Evolutionary Biology	
or BIOL 0500	Cell and Molecular Biology	
or BIOL 0800	Principles of Physiology	
or BIOL 1470	Conservation Biology	
3. Upper-Level Environmental Engineering Curriculum ²		
ENGN 1340	Water Supply and Treatment Systems - Technology and Sustainability	1
Plus four advanced engineering courses from the list below		4
ENGN 1110	Transport and Biotransport Processes	
ENGN 1120	Reaction Kinetics and Reactor Design	
ENGN 1130	Chemical Engineering Thermodynamics	
ENGN 1342	Groundwater Flow and Transport	
ENGN 1700	High Reynolds Number Flows	
ENGN 1710	Principles of Heat Transfer	
ENGN 1860	Advanced Fluid Mechanics	

ENGN 1931P	Energy and the Environment	
ENGN 1931R	The Chemistry of Environmental Pollution	
ENGN 1932P	Sustainable Energy: Science and Technology	
ENGN 2911P	Fate and Transport of Environmental Contaminants	
Or any other course approved by the Concentration Advisor		
4. Capstone Design ³		1
ENGN 1150	Environmental Engineering Design	

* In addition to program requirements above, students must take four courses in the humanities and social sciences.

Total Credits **21**

¹ Students who completed APMA 0330 and/or APMA 0340 prior to academic year 2021-22 may count these as satisfying the APMA 0350 and/or APMA 0360 requirements.

² Or any other advanced Engineering course approved by the Concentration Advisor.

³ Subject to approval by the Concentration Advisor, an independent study course (ENGN 1972/ENGN 1973) may be used to fulfill the Engineering Capstone Design requirement. To qualify for such approval, the independent study project must: (1) contain a significant and definable design component; (2) be based on the knowledge and skills acquired in earlier course work; (3) incorporate appropriate engineering standards; and (4) address multiple realistic constraints. To request approval, please complete the online form available at <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study/>)

⁴ Students in Classes of 2022, 2023, and 2024 may satisfy this requirement with APMA 0650 if taken in Spring 2021 or earlier.

Special Sc.B. Concentrations (non-accredited):

In addition to the standard programs described above, students may also petition the Engineering Concentration Committee to pursue a special engineering Sc.B. degree of their own design. Such special Sc.B. programs are not ABET-accredited. Students with a special concentration will receive an Sc.B. degree in engineering, but a specific area of specialization will not be noted on their transcript. A special Sc.B. concentration is intended to prepare graduates for advanced study in engineering or for professional practice, but in an area that is not covered by one of the existing Sc.B. programs. Accordingly, special concentration programs are expected to consist of a coherent set of courses with breadth, depth and rigor comparable to an accredited degree. A total of 21 engineering, mathematics, and basic science courses are required. The program must include at least 3 courses in mathematics, at least 2 courses in physical or life sciences; and at least 12 courses in engineering. At least five of the engineering courses must be upper level courses, and one must be a capstone design course or independent study, which must be advised or co-advised by a member of the regular engineering faculty. Note that not all Engineering courses may be used to meet Sc.B. requirements: for example, the courses not allowed to count toward the A.B. will not qualify. Petitions should be prepared in consultation with an engineering faculty advisor, who will submit the petition to the Engineering Concentration Committee. Petitions must include: (i) a statement of the objectives of the degree program, and an explanation of how the courses in the program meet these objectives; (ii) course descriptions for any courses in the program that are not part of standard Sc.B. Engineering concentrations; (iii) a detailed description of any independent study courses used for concentration credit, signed by the faculty advisor for this course; and (iv) an up-to-date internal transcript.

Professional Track

While we do not give course credit for internships, we officially recognize their importance via the optional Professional Tracks. The requirements for the professional tracks include all those of the standard tracks, as well as the following: Students must complete full-time professional experiences (or part-time experiences of equivalent total effort) doing work that is related to their concentration programs, totaling 2-6 months, whereby

each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts:

- Describe the organization you worked in and the nature of your responsibilities.
- Which courses were put to use in your work?
- Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your work experience?
- What are the topics from these courses that would have helped you if you had been more familiar with them?
- What topics would have been helpful in preparation for this work experience that you did not learn at Brown?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did something you would like to continue doing once you graduate? Explain.
- Would you recommend your work experience to other Brown students? Explain.

The reflective essays are subject to the approval of the student's Concentration Advisor.

Entry to the Professional Track requires a simple application form to be completed by the student and approved by the Concentration Advisor at the time of the concentration declaration. If the student has not yet declared a concentration, the form may be approved by the Chair of the Concentration Committee. The Concentration Advisor will certify that all Professional Track students have completed the necessary internships and will grant approval for the associated reflective essays. All other requirements remain identical to those in the standard tracks in the concentrations.

Degrees with Honors in Engineering

Honors are granted by the University to students whose work in a field of concentration has demonstrated superior quality and culminated in an 'Honors Thesis of Distinction.' Honors recipients in the School of Engineering must meet the following criteria: (1) Demonstrate a strong academic record (60% A's or "S with Distinction" in their concentration through the seventh semester); (2) Propose and execute an independent research project under the guidance of a faculty member; (3) Complete a written thesis to the satisfaction of the Honors Program Committee; (4) Give a scientific/technical presentation at the Undergraduate Research Symposium in the spring semester; and (5) Fulfill all deadlines for applying for or completing honors to the satisfaction of his/her research advisor and the Honors Program Committee.

Environmental Sciences and Studies

We must find ways to feed a growing human population while maintaining the natural life support system provided by the Earth's ecosystems; to make built environments more efficient as urban areas continue to grow dramatically in size; and to meet the challenges posed by rising sea-level and increasing global temperatures. These challenges are complex, multifaceted and can best be solved with expertise from multiple, relevant disciplines.

To prepare students to meet these challenges, the Institute at Brown for Environment and Society (IBES) offers two undergraduate degrees: an A.B. in Environmental Sciences and Studies and an Sc.B. in Environmental Sciences and Studies. The A.B. guarantees students have a holistic and interdisciplinary understanding of the environment, while the Sc.B. is a more in-depth treatment of a single field: Climate and Energy; Conservation and Natural Systems; Environmental Justice and Health; or Sustainable Development and Governance. Both degrees provide

interdisciplinary exposure to the natural and social sciences, as well as public policy.

Through a rigorous set of core courses; track requirements; and a course, independent research, or project-based capstone experience; our students are primed to make meaningful contributions to environmental scholarship and outreach at local, national and global scales.

If you have administrative questions regarding these concentrations or wish to be added to the email directory listing upcoming events, then please contact Jeanne Loewenstein (jeannel@brown.edu), the academic program manager.

Standard program in Environmental Sciences and Studies:

The Institute at Brown for Environment and Society administers two concentrations, one offering an A.B. degree in Environmental Sciences and Studies (**requires 12-13 courses**) and the other a Sc.B. degree in Environmental Sciences and Studies (**requires 17-18 courses**). Students pursuing an Sc.B. degree can further focus their study by selecting one 4 track offerings:

1. Climate and Energy
2. Conservation Science and Natural Systems
3. Environmental Justice and Health
4. Sustainable Development & Governance

Requirements for the A.B. Degree

Core Requirements

ENVS 0490	Environmental Science in a Changing World ¹	1
ENVS 0110	Humans, Nature, and the Environment: Addressing Environmental Change in the 21st Century	1

Tools - pick one 1

Courses focused on building qualitative or quantitative research tools

ANTH 1940	Ethnographic Research Methods
APMA 0160	Introduction to Scientific Computing
APMA 0650	Essential Statistics
APMA 1650	Statistical Inference I
BIOL 0495	Statistical Analysis of Biological Data
CSCI 0111	Computing Foundations: Data
CSCI 0190	Accelerated Introduction to Computer Science
CLPS 0900	Statistical Methods
CLPS 0950	Introduction to programming
DATA 0200	Data Science Fluency
ECON 0110	Principles of Economics
ECON 1620	Introduction to Econometrics
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction
EEPS 1320	Introduction to Geographic Information Systems for Environmental Applications
EEPS 1330	Global Environmental Remote Sensing
EEPS 1340	Machine Learning for the Earth and Environment
ENVS 1911	Narrating the Anthropocene
SOC 1020	Methods of Social Research
SOC 1100	Introductory Statistics for Social Research
SOC 1117	Focus Groups for Market and Social Research
SOC 1340	Principles and Methods of Geographic Information Systems

Electives - three courses 3

Any ENVS Course, any course listed in AB focal areas, any course used as a prereq for a concentration requirement, or a Course FOCUSED on the Environment that is approved by the curriculum committee (an environmental section in a course will not count). AB students interested in focusing in a specific discipline are encouraged to take electives in the same category.

Capstone - one or two courses

1-2

The College expects that a capstone will be completed in semesters 7 or 8 - with the intention of providing an opportunity for students to integrate many aspects of their course of study, or area of focus. This requirement can be met with a two-semester thesis (ENVS 1970 & ENVS 1971), one-semester research project (ENVS 1970 or ENVS 1971), or an approved capstone course.

Foundations in Earth Sciences and Technology - pick one

1

Courses focusing on earth, atmospheric, engineering or water sciences.

EEPS 0070	Introduction to Oceanography
EEPS 0160M	Natural Disasters
EEPS 0220	Understanding Earth and Environmental Processes
EEPS 0240	Earth: Evolution of a Habitable Planet
EEPS 0830	Water in Our World
EEPS 0850	Weather and Climate
EEPS 1310	Global Water Cycle
EEPS 1510	Dynamic Meteorology
ENGN 0490	Fundamentals of Environmental Engineering
ENGN 1342	Groundwater Flow and Transport
ENVS 0070G	Historical Climatology and Global Climate Change

Ecology/Biological Sciences - pick one

1

Courses focused on ecological or conservation biology

BIOL 0210	Diversity of Life
BIOL 0380	The Ecology and Evolution of Infectious Disease
BIOL 0420	Principles of Ecology
BIOL 0430	The Evolution of Plant Diversity
BIOL 0940D	Rhode Island Flora: Understanding and Documenting Local Plant Diversity
BIOL 1440	Coral Reef Ecology
BIOL 1470	Conservation Biology
BIOL 1480	Terrestrial Biogeochemistry and the Functioning of Ecosystems
BIOL 1515	Conservation in the Genomics Age
ENVS 1775	Biogeography

Environmental Justice and Equity - pick one

1

Courses focused on environmental issues through a justice and/or equity lens

ANTH 1601	Reimagining Climate Change
ENVS 0705	Equity and the Environment: Movements, Scholarship, Solutions
ENVS 1232	Land Matters: Stewardship, Sovereignty, and Justice on the Ground
ENVS 1247	Clearing the Air: Environmental Studies of Pollution
ENVS 1554	Farm Planet: Hunger, Development, and the Future of Food and Agriculture
ENVS 0150	Climate Futures and Just Transitions
SOC 0250	An Environmental Sociology for a Rapidly Warming World

Environmental Policy and Politics - pick one

1

Courses focused on the policy, politics and/or governance of environmental issues

ANTH 1601	Reimagining Climate Change
ENVS 0715	Political Ecology
ENVS 0717	Ocean Resilience: Ecology, Management, and Politics
ENVS 1350	Environmental Economics and Policy
ENVS 1555	Local Food Systems and Urban Agriculture
ENVS 1574	Climate Policy Research: Organizations and Obstruction
ENVS 1580	Environmental Stewardship and Resilience in Urban Systems
ENVS 1615	Climate Change, Human Rights, and the Policy Process
ENVS 1805	Ocean Governance and Policy
ENVS 1925	Energy Policy and Politics
POLS 1015	Politics and Nature
POLS 1435	Politics of Climate Change
POLS 1822I	Geopolitics of Oil and Energy

Environmental History and Humanities - pick one

1

Courses focused on the role of history, culture, and the arts in the environment

ARCH 0680	Water, Culture and Power
ENGL 1160P	Writing Climate, Writing Community
ENGL 1190U	Nature Writing
ENVS 1554	Farm Planet: Hunger, Development, and the Future of Food and Agriculture
ENVS 1557	Birding Communities
ENVS 1825	Commodity Natures: Supply Chains From Extraction to Waste and Alternatives to Endless Growth
ENVS 1910	The Anthropocene: The Past and Present of Environmental Change
ENVS 1916	Animals and Plants in Chinese History
HIST 0270A	From Fire Wielders to Empire Builders: Human Impact on the Global Environment before 1492
HIST 0270B	From the Columbian Exchange to Climate Change: Modern Global Environmental History
HIST 1360	Amazonia from the Prehuman to the Present
HIST 1820B	Environmental History of East Asia
HIST 1974D	River Histories: Fishes, Floods and the Transformation of Freshwater Ecosystems
HIST 1976I	Imperialism and Environmental Change
HIST 1976J	Earth Histories: From Creation to Countdown
PHUM 1904	Power + Water: Material Culture and its Environmental Impact
RELS 0260	Religion Gone Wild: Spirituality and the Environment

Total Credits

12-13

¹ The core requirement of ENVS 0490 can be waived for students with an AP exam score of 5 in Environmental Science.

Requirements for the Sc.B. Degree

Requires ALL 12-13 course requirements as listed in the A.B. Program

12-13

Please note - courses already chosen to fulfill AB requirements cannot be used for an ScB focus area as well.

Additional Track specific requirements for the Sc.B.

5

TRACK 1 - Climate and Energy

This track is intended for students interested in climate change science, energy systems, and energy/climate change policy

FOUNDATIONS - pick two

These courses serve as a foundation to understanding energy, climate systems, and data analysis¹

APMA 0160	Introduction to Scientific Computing
CSCI 0111	Computing Foundations: Data
CSCI 0190	Accelerated Introduction to Computer Science
CHEM 0330	Equilibrium, Rate, and Structure
EEPS 0240	Earth: Evolution of a Habitable Planet
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction
ENGN 0030	Introduction to Engineering
ENGN 0032	Introduction to Engineering: Design
ENGN 0490	Fundamentals of Environmental Engineering
ENGN 0510	Electricity and Magnetism
ENGN 0810	Fluid Mechanics
PHYS 0030	Basic Physics A
PHYS 0050	Foundations of Mechanics

ENERGY, ENVIRONMENTAL TECH, & INFRASTRUCTURE - pick one

ENGN 0490	Fundamentals of Environmental Engineering
ENGN 1930U	Renewable Energy Technologies
ENGN 1931P	Energy and the Environment
ENVS 1400	Sustainable Design in the Built Environment
ENVS 1580	Environmental Stewardship and Resilience in Urban Systems

CLIMATE - pick one

EEPS 0830	Water in Our World
EEPS 0850	Weather and Climate
ENGN 1931R	The Chemistry of Environmental Pollution
ENVS 1247	Clearing the Air: Environmental Studies of Pollution

ENERGY & CLIMATE POLICY - pick one

ANTH 1601	Reimagining Climate Change
ECON 1340	Economics of Global Warming
ENVS 1574	Climate Policy Research: Organizations and Obstruction
ENVS 1925	Energy Policy and Politics
POLS 1435	Politics of Climate Change
POLS 1822I	Geopolitics of Oil and Energy

TRACK 2 - Conservation Science and Natural Systems

This track is intended for students interested in ecological and conservation sciences²

ECOLOGY

BIOL 0420	Principles of Ecology

CONSERVATION

BIOL 1470	Conservation Biology

ORGANISMAL DIVERSITY, ECOLOGY & CONSERVATION**TOPICS - pick one**

BIOL 0410	Invertebrate Zoology
BIOL 0430	The Evolution of Plant Diversity
BIOL 0450	Evolutionary Behavioral Ecology
BIOL 0480	Evolutionary Biology

BIOL 0940D	Rhode Island Flora: Understanding and Documenting Local Plant Diversity

BIOL 1480	Terrestrial Biogeochemistry and the Functioning of Ecosystems

BIOL 1515	Conservation in the Genomics Age
ENVS 1775	Biogeography

POLITICS & HISTORY OF NATURAL SYSTEMS - pick one

ENVS 0715	Political Ecology
ENVS 0717	Ocean Resilience: Ecology, Management, and Politics

ENVS 1232	Land Matters: Stewardship, Sovereignty, and Justice on the Ground

ENVS 1555	Local Food Systems and Urban Agriculture

ENVS 1805	Ocean Governance and Policy

ENVS 1916	Animals and Plants in Chinese History

HIST 1974D	River Histories: Fishes, Floods and the Transformation of Freshwater Ecosystems

POLS 1015	Politics and Nature

POLS 1435	Politics of Climate Change

TRACK 3 - Environmental Justice and Health

This track is intended for students interested in exploring environmental issues through a justice/equity lens

RACE, CLASS, & GENDER INEQUALITY - pick one

Any class focused on race, class, or gender - these courses do not have an environmental theme

AFRI 0090	An Introduction to Africana Studies

AFRI 1920	Health Inequality in Historical Perspective

ANTH 1624	Indians, Colonists, and Africans in New England

ECON 1370	Race and Inequality in the United States

ETHN 1000	Introduction to American/Ethnic Studies

GNSS 0120	Introduction to Gender and Sexuality Studies

HIST 0150D	Refugees: A Twentieth-Century History

SOC 0230	Sex, Gender, and Society

SOC 1270	Race, Class, and Ethnicity in the Modern World

ENVIRONMENTAL JUSTICE & EQUITY - Pick 2

These courses focus on environmental issues through a justice and/or equity lens

ANTH 1601	Reimagining Climate Change

ENVS 0150	Climate Futures and Just Transitions

ENVS 0705	Equity and the Environment: Movements, Scholarship, Solutions

ENVS 1232	Land Matters: Stewardship, Sovereignty, and Justice on the Ground

ENVS 1247	Clearing the Air: Environmental Studies of Pollution

ENVS 1554	Farm Planet: Hunger, Development, and the Future of Food and Agriculture

SOC 0250	An Environmental Sociology for a Rapidly Warming World

FOUNDATIONS IN HEALTH & INEQUALITY - pick one

These courses offer a foundation or an additional tool to study environmental health and inequality

ANTH 1940	Ethnographic Research Methods

EEPS 1320	Introduction to Geographic Information Systems for Environmental Applications

PHP 0310	Health Care in the United States

PHP 0320	Introduction to Public Health

PHP 0330	Public Health Policy

PHP 0400	Intro. to Health Disparities & Making Connection btw Structure, Social Determinants&Health Equity
PHP 1650	Race, Racism and Health
PHP 1920	Social Determinants of Health
SOC 1020	Methods of Social Research
SOC 1100	Introductory Statistics for Social Research
SOC 1117	Focus Groups for Market and Social Research
SOC 1340	Principles and Methods of Geographic Information Systems

ENVIRONMENTAL HEALTH - pick one

These courses focus specifically on public health and the environment

PHP 0720	Public Health and the Environment
PHP 1070	Global Burden of Disease
PHP 1101	World of Food: Personal to Global Perspectives on Nutrition, Agriculture and Policy

Future course offerings from Professor Rachel Backer and Allan Just

TRACK 4 - Sustainable Development & Governance

This track is intended for students interested in the interplay between environmental governance and economics on the global stage, with an emphasis on the non-Western world

GLOBAL GOVERNANCE & DEVELOPMENT - pick one

Courses focused on global governance or development (some are non environmental)

ENVS 0717	Ocean Resilience: Ecology, Management, and Politics
IAPA 1001	Foundations of Development
IAPA 1401	Economic Development in Latin America
IAPA 1404	Economic Development of China and India
POLS 0200	Introduction to Comparative Politics
POLS 0400	Introduction to International Politics
POLS 1435	Politics of Climate Change
POLS 1440	Security, Governance and Development in Africa
POLS 1500	The International Law and Politics of Human Rights
POLS 1822I	Geopolitics of Oil and Energy
POLS 1826B	Political Economy of Development
SOC 1490	Power, Knowledge and Justice in Global Social Change

ENVIRONMENT, JUSTICE, & NON-WESTERN PERSPECTIVES - pick two

Any class focused on the Environment and the Global South and/or other non-Western perspectives

ANTH 1601	Reimagining Climate Change
ENVS 0705	Equity and the Environment: Movements, Scholarship, Solutions
ENVS 0150	Climate Futures and Just Transitions
ENVS 1232	Land Matters: Stewardship, Sovereignty, and Justice on the Ground
ENVS 1554	Farm Planet: Hunger, Development, and the Future of Food and Agriculture
ENVS 1580	Environmental Stewardship and Resilience in Urban Systems
ENVS 1825	Commodity Natures: Supply Chains From Extraction to Waste and Alternatives to Endless Growth

ETHN 1751A	Indigenous Laws, Environmental Racism, and LandBack
HIST 1360	Amazonia from the Prehuman to the Present
PHUM 1904	Power + Water: Material Culture and its Environmental Impact
ECONOMIC PERSPECTIVES - pick one	
These courses are intermediate-level economic tools courses	
ECON 1110	Intermediate Microeconomics
ECON 1340	Economics of Global Warming
ENVS 1350	Environmental Economics and Policy
or ECON 1350	Environmental Economics and Policy
ECON 1355	Environmental Issues in Development Economics
ECON 1410	Urban Economics
ECON 1500	Current Global Macroeconomic Challenges
ECON 1530	Health, Hunger and the Household in Developing Countries
ECON 1560	Economic Growth
FINANCE & ECONOMIC PERSPECTIVES - pick one	
These courses are either intermediate-level economic tools courses, courses focused on sustainable investing and finance, or the social science of economics systems	
ECON 1110	Intermediate Microeconomics
ECON 1340	Economics of Global Warming
ECON 1350	Environmental Economics and Policy
or ENVS 1350	Environmental Economics and Policy
ECON 1355	Environmental Issues in Development Economics
ECON 1410	Urban Economics
ECON 1500	Current Global Macroeconomic Challenges
ECON 1530	Health, Hunger and the Household in Developing Countries
ECON 1560	Economic Growth
ENVS 1207	Eco-Entrepreneurship
ENVS 1545	The Theory and Practice of Sustainable Investing
ENVS 1547	Finance and the Environment
HIST 0150A	History of Capitalism
IAPA 1701Y	Climate Change, Power, & Money
PHIL 1561	Ethics, Economics, and the Future

Total Credits

17-18

¹ Students can use a prerequisites for any of the courses selected to fulfill an "Elective" requirement.

² Most students with an intention of going to grad school in this field will also need: At least one semester of calculus and a statistics course

³ Many AFRI, ETHN, and GNSS classes count with IBES Curriculum Committee approval.

Honors

Students interested in graduating with honors in their concentration must complete a thesis determined to be of the highest quality and must have excelled in their coursework required for the concentration, which is defined here as receiving a grade of "A" in the majority of courses taken to fulfill the concentration. You can learn more by visiting the honors page (<https://www.brown.edu/academics/institute-environment-society/education/undergraduate/honors/>) on the IBES website.

Ethnic Studies

Ethnic Studies is an interdisciplinary, comparative concentration that examines the construction of race and ethnicity in social, cultural, historical, political, and economic contexts. Concentrators develop individual programs based on areas of focus in consultation with faculty advisors, drawing from courses in the humanities and social sciences. Typical areas of focus are social issues (such as inequality, education, or health), cultural production and the representation of racial groups, processes of racialization, the historical formation of transnational communities and of diaspora, and the history of particular ethnic or racial groups.

The Ethnic Studies concentration (<https://www.brown.edu/academics/american-studies/ethnic-studies/>) at Brown emphasizes the histories of diverse racial groups within and across the borders of the United States, including examining issues of diaspora, migration, social movements, and the political economies of social inequality and racial formation. Concentrators strive for intellectual fluency in a range of critical approaches to race and ethnicity across disciplines, and demonstrate this fluency through the composition or creation of a significant piece of original research or creative work.

Brown University established an Ethnic Studies concentration in 1996, originally within the Center for the Study of Race and Ethnicity in America (<https://www.brown.edu/academics/race-ethnicity/>) (CSREA). In the Fall of 2013, as part of changes to the CSREA and to better support students, Ethnic Studies joined a long established Brown department, American Studies (<https://www.brown.edu/academics/american-studies/home/>). Many American Studies faculty members (<https://www.brown.edu/academics/american-studies/people/>) work in the areas of race and ethnicity and have held joint appointments in Ethnic and American Studies while American Studies PhD students (<https://www.brown.edu/academics/american-studies/graduate-students/>) have done some of the most exciting Ethnic Studies research on campus.

As an academic field, Ethnic Studies is rooted in the protests of the 1960s and 1970s, out of which emerged the very first Latino/a Studies, Asian American Studies, African American Studies, and Native American studies programs. Organized around straightforward political goals – the enrichment through diversification of the curriculum and the systematic, multi-disciplinary, and the often comparative study of racial and ethnic inequality – Ethnic Studies has become an important feature of major research universities.

Faculty, both core and affiliated, create and participate in groundbreaking Ethnic Studies scholarship. Areas of faculty research include borderlands history, Latina/o literary studies and visual culture, indigenous movements, migration and African American cultural studies as well as the intersecting fields of gender and sexuality, queer theory and critical race theory. Students can focus their study on specific populations (e.g. Latina/os, Asian Americans) and choose a thematic interest including such current examples as: "social issues affecting radicalized groups" (students have looked at health disparities or educational inequality); "the study of cultural production or cultural representations;" "the theory of a particular racial or ethnic group;" and "the study of comparative processes of radicalization."

Requirements for Students Who Declare Spring 2021 and Beyond

The concentration requires 10 classes. More specifically, concentrators must take:

ETHN 1000	Introduction to American/Ethnic Studies	1
Any two courses from the ETHN 1200 "Topics in Ethnic Studies" or ETHN 1750 "Advanced Topics in Ethnic Studies" sequence, or similar electives in AMST, as approved by the advisor		2
Five classes that address the student's focus area and that prepare them for the capstone experience. At least two of these classes must bear an ETHN designation.		5

Of the other three classes, only one may be a Departmental Independent Study Project (DISP). If a student pursues that option, the class must be undertaken with core faculty, all of whom are listed on the department website, and must be offered under an ETHN course number. Students may count two lower-level classes (below 1000-level) offered under the AMST or ETHN prefix - or cross-listed with either American Studies or Ethnic Studies - towards the focus area.

Students must take any two classes under either the AMST or ETHN prefixes that have been tagged with a specific method. Each class must be tagged with a different method. These classes can count for any other concentration requirement.

An AMST 1700 Junior Seminar	1
ETHN 1900 the "Ethnic Studies Senior Seminar"	1
Total Credits	10

Requirements for Students Who Declare Prior to Spring 2021

ETHN 1000	Introduction to American/Ethnic Studies	1
Any two courses from the ETHN 1200 "Topics in Ethnic Studies" or ETHN 1750 "Advanced Topics in Ethnic Studies" sequence, or similar electives in AMST, as approved by the advisor		2
ETHN 1200B	Contemporary Indigenous Education in North America	
ETHN 1200D	Latinx Literature	
ETHN 1750A	Immigrant Social Movements: Bridging Theory and Practice	
ETHN 1750B	Treaty Rights and Food Fights: Eating Local in Indian Country	
ETHN 1750D	Transpacific Asian American Studies	
ETHN 1750E	Transpacific Popular Culture	
Four classes that address the student's focus area and that prepare them for the capstone experience. At least two of these classes must bear an ETHN designation. Of the other two classes, only one may be a Department Independent Study Project (DISP). If a student pursues that option, the class must be undertaken with core faculty, all of whom are listed on the department website, and it must be offered under an ETHN course number. Please consult the following guidelines for designing a DISP. Please note a Department Independent Study Project Form and a draft syllabus will be due to the Director of Undergraduate Studies no later than two weeks into the semester the DISP takes place.		4
ETHN 1650	Methods and Approaches in Ethnic Studies	1
American Studies seminar in the AMST 1700 series		1
AMST 1700D	Race and Remembering	
AMST 1700F	American Publics	
AMST 1700I	Community Engagement with Health and the Environment	
AMST 1700K	Race in the Americas: A Hemispheric Perspective	
ETHN 1900	Ethnic Studies Senior Seminar	1
Total Credits		10

Courses taken toward the fulfillment of concentration requirements must be at or above the 1000 level. At the advisor's discretion, a student may count a single course below the 1000 level towards their requirements. This class must be taught by a core faculty member listed on the department's website and may be offered through another department.

Honors:

Admittance to the Ethnic Studies Honors Program requires:

1. A 3.5 GPA in concentration courses
2. A 3.0 overall GPA

3. The standard concentration (<https://www.brown.edu/academics/american-studies/ethn-studies-requirements-prior-7117/>)
 4. AMST/ETHN 1800 the Honors Seminar in the sixth semester
 5. An Honors Thesis Proposal and an application for the Ethnic Studies Honors Program (see below for link to application)
 6. Two independent studies, taken in the 7th and 8th semester, with the Director of your honors thesis
 7. A completed project, delivered the third week of April if student is a May graduate (the first Monday of December if the student is a May graduate).
- Students completing in December 2020 or May 2021 should refer to the department's site (<https://www.brown.edu/academics/american-studies/senior-year-honors-schedule-ay-2020-2021/>) for specific dates, adjusted due to the adjusted term schedule.**
8. A recommendation for honors from both readers

Students must define their honors project in a proposal by early May (in accordance with the due dates established in the honors seminar, AMST/ETHN 1800) or near the end of their sixth semester. The proposal is comprised of a five-page, double-spaced project description along with a bibliography of relevant sources. More details on the proposal can be found here (<https://www.brown.edu/academics/american-studies/american-studies-honors-thesis-prospectus/>).

This proposal must be submitted for approval to the Director of Undergraduate Studies (DUS) along with the application for the Ethnic Studies Honors Program form on the same date that it is submitted in the honors seminar. The proposal should identify the problem, or question the student will focus on, and suggest approaches and possible hypotheses or outcomes. Students need to work with two professors – a director and a reader. At least one should be Ethnic Studies faculty. The proposal should name a confirmed director (who must sign your application form) and a likely second reader (who will need to confirm their participation at the beginning of your 7th semester). If a student wants to work with two professors, neither of whom is Ethnic Studies faculty, then they should have a third reader who will read the final draft or consult on the final project and approve it for honors in the field. Students deciding not to do an honors thesis after completing the Honors Seminar will receive credit for the course and still be able to count it as a seminar in the concentration.

Concentrators studying abroad during the second semester of the junior year, when the Honors Seminar is offered, may waive the Honors Seminar with permission of the DUS prior to the beginning of the senior year. Such a waiver of the Honors Seminar will be predicated on the submission of a detailed plan for the honors project approved by a faculty director with a confirmed second reader submitted to the DUS in the first two weeks of the senior year.

An updated thesis proposal, confirming a second thesis reader, will be due for all thesis writers within the first the first two weeks of the senior year.

In their seventh and eighth semesters, students seeking honors will enroll in an independent study class (ETHN 1910) with their director during which they will follow through on the plan devised in the spring of their junior year. Students and thesis directors should plan on at least a monthly meeting to discuss the research, writing and revision of sections of the thesis. In addition to meeting with their director, students should also plan to meet their second reader during this time. Guidelines for thesis directors and readers can be found here (<https://www.brown.edu/academics/american-studies/american-studies-honors-thesis-directors-and-readers/>).

In their eighth semester, the deadline for a finished full draft of their project is the third Friday in April (for May graduates) or the first Monday in December (for December graduates). Students should turn in a pdf of a completed (proofread, formatted, fully written) draft to their readers by that day. Of course, students will turn chapters to the director and reader before that, according to their recommendations, but the third Friday of April (or first Monday in December) is the absolute deadline to turn in a pdf of the final draft.

A signed and bound copy of the thesis is due to the department one week after submission of the pdf where it will be available for one year and then sent to the Hay Library.

All official readers must recommend the project for honors, indicated by their signature on your cover sheet and the director's written report.

When written as formal research papers, honors theses are generally between 50-100 pages. When there is a creative or public component, students should work closely with their faculty team to determine the appropriate length of the written accompaniment.

Students will make a public presentation of their work to the Ethnic Studies faculty during the first week of May for May graduates and mid December for December graduates.

French and Francophone Studies

The concentration in French and Francophone Studies is committed to the pursuit of an interdisciplinary, linguistically rigorous, and textually informed understanding of French and Francophone literatures and cultures. Concentrators engage actively through their coursework with a wide range of texts and critical perspectives, pertaining to multiple literary genres, media, and contexts. They have opportunities to study different periods of French history as well as Francophone cultures beyond France.

Concentration Requirements

A minimum of ten courses is required for the concentration in French and Francophone Studies. Concentrators must observe the following guidelines when planning their concentration. It is recommended that course choices for each semester be discussed with the department's concentration advisor.

Of the minimum ten courses:

At least four courses in French and Francophone Studies numbered 950 and above, such as:

FREN 0950A	Advanced Written and Oral French: Traduction	1
FREN 0960A	Ateliers d'écriture	1
FREN 1070M	La question animale	1
FREN 1110F	Le Roman contemporain	1
FREN 1120F	L'enfer, c'est les autres	1
FREN 1130G	Modernismes poétiques	1
FREN 1210F	L'œuvre romanesque de Marguerite Duras	1
FREN 1310N	La Pornographie	1
FREN 1310P	La théorie féministe en France	1
FREN 1410X	Dés/Accords franco-américains	1

At least one course covering a pre-Revolutionary period (i.e. a course focusing on medieval, Renaissance, 17th or 18th century France), such as:

FREN 1000B	Littérature et culture: Chevaliers, sorcières, philosophes, et poètes	1
FREN 1040B	Pouvoirs de la scène: le théâtre du XVIIe siècle	1
FREN 1040C	Le Grand Siècle à l'écran	1
FREN 1040D	Molière et son monde	1
FREN 1410I	Sorcellerie et Renaissance: le sort de la sorcière	1

At least one course focusing primarily on a Francophone literature or a cultural context other than that of France, such as:

FREN 1410R	Images d'une guerre sans nom: The Algerian War in Literature and Film	1
FREN 1410T	L'expérience des réfugiés: déplacements, migrations	1

- FREN 0600, FREN 0610, and FREN 0620 (Advanced French) and FREN720 (First Year Seminar) may count for concentration credit

Additional guidelines:

- A senior capstone project (<https://www.brown.edu/academics/french-studies/undergraduate/senior-capstone/>) will be completed during the senior year.

- Up to four courses (taken in French) from a semester's study abroad (and up to five courses from a full year abroad) may count towards the concentration. A year or semester of study abroad in France or a Francophone country is considered an integral part of the concentration and is therefore highly recommended. Students should consult the concentration advisor prior to going abroad to find out which types of courses will count for the concentration.
 - Up to two 1000-level courses taught in English with a meaningful engagement with French/Francophone texts and/or contexts may be accepted for concentration credit. These may be courses offered within the Department of French and Francophone Studies or other departments at Brown. (Appropriate courses on French or Francophone topics from other departments must be approved by the concentration advisor.)
- | | | |
|------------|--|---|
| FREN 1140A | French Theory | 1 |
| FREN 1150G | New Wave Cinema from Paris to Hollywood | 1 |
| FREN 1330A | Fairy Tales and Culture | 1 |
| HIST 1272D | The French Revolution | 1 |
| MUSC 1677 | Music and Culture in Third Republic France | 1 |

The Concentration Advisor for the Department of French and Francophone Studies, Prof. Lewis Seifert (fall 2021), will be happy to discuss the concentration program in French and Francophone Studies with interested students.

The Senior Capstone

The senior capstone is a research project, a translation or a piece of creative work undertaken by all concentrators of French and Francophone Studies in their final year. As a culminating piece of work for their concentration, it is a conceptually rigorous, in-depth treatment of a subject (or a body of work) within French and Francophone Studies, and an opportunity for concentrators to demonstrate the specific strengths and forms of competence—linguistic, analytic, interpretive, critical, theoretical, cultural—developed in the course of the concentration. The learning goals of the capstone project include: building on writing proficiency in French, demonstrating critical reasoning skills, and showing, in writing, the ability to engage thoughtfully with salient questions of French and/or Francophone culture.

The senior capstone experience is usually fulfilled by a research essay completed for a 1000-level (or a 2000-level) course taken in the department during the senior year. In some cases, where appropriate to the course materials and focus, the capstone project may take the form of a work of translation or a piece of creative writing. The project will be 8-12 pages in length and will be written in French. By mid-semester, students will submit to the professor of the course a 300-word statement of the objectives and methods of the project. Students will then meet with the professor to discuss plans for the project. At the end of the academic year, students will give a presentation of 5-7 minutes on their projects at the annual Senior Forum. The professor evaluating the project will inform the DUS of successful completion of the capstone project.

In the case of students pursuing Honors, the senior thesis fulfills the role of the senior capstone.

The senior capstone is intended as a meaningful scholarly experience where concentrators may follow their intellectual passions and best express their growth as students of French and Francophone Studies. Concentrators should discuss their plans for the senior capstone with the Concentration Advisor at the end of their junior year or the beginning of their senior year.

Honors

The Honors Program welcomes applications from students who wish to deepen their study of French and Francophone literature and culture by pursuing during their senior year an independent research-based inquiry into a particular set of texts or questions (literary, historical, cultural, theoretical or linguistic), a translation project or a creative work under the supervision of a thesis advisor. Students may earn honors in the concentration by successfully presenting a thesis, for the preparation of

which they will normally enroll in FREN 1990 in either or both semesters of their senior year.

Eligibility and Application Procedure

Candidates for honors in French Studies are expected to have a strong track record in courses taken for their concentration, and will have completed at least two-thirds of the courses required for the concentration (6 courses) by the application deadline.

Applications for admission to the Honors Program are submitted by the end of September in the student's seventh semester. This means that the candidate should ideally begin to think of their thesis project, and establish contact with a potential thesis advisor by the end of the spring semester of their junior year or in the first weeks of the fall semester of their senior year. Students generally choose as advisor a faculty member with whom they have taken a class, but they are also encouraged to contact others whose specialization aligns with their interests. If in doubt, the concentration advisor can be consulted for suggestions of an appropriate advisor. (Note that faculty may not be easy to contact over the summer. Students are thus advised to seek contact during the academic year.) For the application (form available below), the student will provide a brief thesis proposal (1 or 2 paragraphs in French presenting the object of study and intended approach). The application must also feature a thesis title, the name and signature of the thesis advisor, and two recommendations from French and Francophone Studies faculty. Upon admission, the student will also choose a second reader.

Students applying for admission to the Honors Program must submit a completed application (https://docs.google.com/forms/d/e/1FAIpQLSfZ3UPzEjSxhCaCm-b_gJOgsaMvZghzuP5Q-a17rg3PK4K4Dg/viewform/) to the French Studies Honors/Concentration Advisor by **September 26** (or the weekday closest to that date). Recommendations should be from department faculty who have close knowledge of the student's work, preferably through a course taken by the student during their sophomore or junior year. **Please submit these forms to your faculty recommenders no later than September 18** (or the weekday closest to that date). They will then be forwarded to the Honors Advisor who, after reviewing the complete application along with the student's transcript(s), will make a determination about admission to the Honors Program.

A successful application allows the student to pursue the Honors Thesis Project. Honors is officially granted only when the student's two readers approve the completed thesis.

Requirements

Students pursuing honors in French Studies take a minimum of eleven courses. In addition to the standard requirement of ten courses, FREN 1990 (Senior Thesis) is to be taken in either or both semesters of the student's senior year. This independent study is designed for the student to devote time to thesis research and writing under the supervision of a thesis advisor.

The student is expected to work in close consultation with his/her thesis advisor and to respect deadlines for completion of the outline, drafts, and the final version of the thesis, which at the latest must be submitted by the end of the week after Spring Recess (see deadlines below). It is expected that the student and the thesis advisor will establish a schedule and meet on a regular basis through the entire year. (Meetings once every two weeks on average, particularly during the spring semester, are encouraged). The second reader may or may not be from the Department of French and Francophone Studies, and may be consulted less frequently during the earlier stages of the research/writing, according to their availability and the student's needs. However, the student is expected to share at least one advanced draft with the second reader before the final submission.

The final complete version of the thesis must be submitted by **April 16** (or whichever weekday falls closest to that date). Students should submit one copy to each reader and one electronic **and** one hard copy of the thesis to the Concentration advisor.

Work submitted after the final submission deadline will not be accepted for Honors. In such cases, a grade will be given for the Senior Thesis course, but Honors cannot be awarded.

The Senior Thesis

Theses ordinarily range from 50 to 80 pages and are written in French. Topics, approach, and precise calendar of work should be decided in close consultation with the thesis advisor. Students are encouraged to consult previous French Honors theses to get a sense of the range of projects that are possible. At every stage of their research and writing, students are expected to adhere rigorously to Brown University's Academic Code (http://www.brown.edu/Administration/Dean_of_the_College/curriculum/academic_code.php) which may be consulted online.

The Research Essay: The thesis is usually a research-based essay dealing with primary sources (literary works, historical archives, etc.) consulted and cited in the original French. A meritorious Honors thesis will be written in competent and precise language and evince meaningful internal structure and coherence. It will formulate precisely its framing questions and provide textual support for its propositions while making clear their furthest stakes. While students are encouraged to cultivate the originality of their own questions or perspectives, they are also expected to be in productive dialogue with scholarship in the field. Accordingly, to be awarded Honors, a thesis will demonstrate a consistent citation style and clear and correct attribution of all terms and ideas not the student's own.

The Translation Thesis: Students may alternatively choose to undertake for their Honors thesis a work of translation. This choice must be made with prudence and in close consultation with the thesis advisor, so that there is agreement on the difficulty level of the chosen text, the argument for translating it, and expected standards of ambitiousness and precision in the translation. Usually the translation will be from French to English, though the case may be made on the rare occasion for translation from English to French. Students may choose to translate a whole work, select excerpts, or a series of texts (as in the case of poems or shorter narratives). In all cases, a translation thesis must, to qualify for French Honors, include a critical introduction or preface (a minimum of 10 pages) in which the translator demonstrates advanced knowledge of the place of the chosen text in its original cultural and literary context, engages reasonably with scholarship pertaining to the original text, and shows a mature understanding of the stakes and debates of translation as a practice.

The Creative Project: Some students may elect to undertake for their Honors project a creative work. This decision must be made in close consultation with the thesis advisor, so that there is agreement on the level of ambition and interest of such a project. The creative thesis may be a narrative, poetic, theatrical or experimental/hybrid text. Written in French, it is expected to involve a reading- or research-based dimension. In other words, the creative work will demonstrate meaningful engagement with analogous work in the French/Francophone context, and the pursuit of a certain scholarly intention through creative means—whether to advance knowledge or examination of a certain topic, to experiment with the formal means by which to express or explore a certain issue, or to creatively rewrite an existing work with a view to questioning it or investing it with new meanings. As with the translation thesis, a creative thesis must, to qualify for Honors, include a critical introduction or preface (a minimum of 10 pages) in which the author discusses, in informed and articulate terms, the cultural, literary and/or critical stakes of the project: its intentions, its context and background, its formal choices.

Honors students will be invited to present their work to members of the Department and fellow and potential French concentrators at the end of term sometime after the April final submission date.

Calendar of Deadlines:

Precise details regarding deadlines and nature/length of submissions must be established clearly between the student and his/her advisor. Suggested deadlines for major stages are as follows:

- Submission of Applications to Honors Program -- **September 26**
- Rough outline of thesis due to thesis advisor by **the first week of November**
- First portion of written work due to thesis advisor (**minimum of 20 pages**) by **mid-December**
- Submission of full draft to both readers by **March 10**

Completed thesis submitted to both readers by **April 16**

Gender and Sexuality Studies

Gender and Sexuality Studies is an interdisciplinary concentration that examines the construction of gender and sexuality in social, cultural, political, economic, and scientific contexts.

Each Gender and Sexuality Studies (GNSS) concentrator develops a well-defined topic or question and works closely with an advisor to design a program that rigorously investigates their focus area and supplements it with foundational courses in the relevant disciplines.

Graduates of GNSS have focused on topics such as intersex healthcare, trans memoir, queer archival practice, incest in the postbellum South, racial disparities in reproductive healthcare, sex positivity in the #MeToo era, comparative models of sex education, garment workers and environmental justice, and LGBTQ+ migration. Introductory and methodology courses in the discipline appropriate to the concentrator's research area provide knowledge of the principles grounding their research methods in order to deploy disciplinary tools or challenge disciplinary boundaries with intentionality.

More information is available on the Gender and Sexuality Studies website (<http://pembroke.brown.edu/academics/undergraduate-concentration/>).

Requirements:

The concentration requires 10 courses, 12 for honors concentrators. No more than two courses may count for multiple concentrations.

1. GNSS 0120. Introductory course on gender and sexuality across the disciplines
2. Four-course focus on some thematic, theoretical, or historical aspect of gender and sexuality
3. Two introductory or methodology courses in disciplines pertinent to the focus
4. One course in gender history, women's history, or history of sexuality
5. One course in feminist theory or theory of sexuality
6. GNSS 1990. A senior seminar which counts as your capstone course. Senior seminar participants are expected to write a research essay. The senior seminar fulfills the second half of Brown's writing requirement.
7. Prior to Commencement, all graduating senior concentrators are required to give a short presentation of either their senior essay or thesis project.

Honors

Candidates for honors must apply to the program's director at the beginning of their seventh semester. Honors concentrators fulfill the regular requirements plus completing a two-semester thesis as their capstone project.

For more information, please consult the GNSS concentration webpage at <https://pembroke.brown.edu/academics/undergraduate-concentration/> (<https://pembroke.brown.edu/academics/undergraduate-concentration/>)

Geochemistry and Environmental Chemistry

The Geochemistry and Environmental Chemistry concentration offers two different emphases. Low-temperature geochemistry involves study of chemical and biochemical processes on and near Earth's surface, including land, oceans and freshwater bodies, and how the geochemical record reflects climate conditions. High-temperature geochemistry includes study of the formation and evolution of the Earth and other planets, magma formation and properties, volcanic activity, and metamorphism.

Both A.B. and Sc.B. degrees are offered, requiring 12 and 19 courses, respectively. These degrees build skills in critical thinking, data analysis and modeling, finding solutions to complex problems, and written and oral communication. DEEPS provides a highly collaborative learning environment that emphasizes process-oriented, hands-on approaches in

the classroom, in labs and on field trips. There are many opportunities for students to do paid research during the summer or academic year.

Students interested in this concentration may also wish to consider related concentrations: Earth, Climate and Biology, Geophysics and Climate Physics, and Earth and Planetary Science.

Standard program for the A.B. degree

This program is recommended for students interested in applying chemical and physical principles toward an understanding of Earth and planetary history and processes, and environmental and resource issues, while pursuing diverse academic goals. The program prepares students for careers in environmental science, Earth and planetary science, and global change. Some course requirements may be flexible based on consultation with the concentration advisor.

Note - For students still enrolled with the prior Concentration in Geology-Chemistry A.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Three basic supporting science courses

CHEM 0330	Equilibrium, Rate, and Structure	1
Two courses to build quantitative skills:		2
BIOL 0495	Statistical Analysis of Biological Data	
or APMA 1650	Statistical Inference I	
MATH 0090	Single Variable Calculus, Part I (or higher)	
ENGN 0040	Engineering Statics and Dynamics (or higher)	
CSCI 0111	Computing Foundations: Data (or higher)	
APMA 0350	Applied Ordinary Differential Equations (or higher)	
PHYS 0050	Foundations of Mechanics (or higher)	

Nine Concentration courses

Two of these four fundamentals courses:		2
EEPS 0220	Understanding Earth and Environmental Processes	
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	
EEPS 0240	Earth: Evolution of a Habitable Planet	
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	
Three additional chemistry courses such as:		3
CHEM 0350	Organic Chemistry I	
CHEM 0360	Organic Chemistry II	
CHEM 0500	Inorganic Chemistry	
CHEM 1060	Advanced Inorganic Chemistry	
CHEM 1140	Physical Chemistry: Quantum Chemistry	
CHEM 1150	Physical Chemistry: Thermodynamics and Statistical Mechanics	
BIOL 0280	Biochemistry	
Two courses from the following:		2
EEPS 1410	Mineralogy	
EEPS 1420	Petrology	
EEPS 1130	Ocean Biogeochemical Cycles	
EEPS 1370	Environmental Geochemistry	
Two additional upper-level EEPS courses or substitutes with approval from the concentration advisor.		2

Total Credits 12

Standard program for the Sc.B. degree

This program is recommended for students interested in more in-depth study in geochemistry, climate science, planetary science and related fields, potentially including graduate school and wide-ranging careers in these areas. Some course requirements may be flexible based on consultation with the concentration advisor.

Note - For students still enrolled with the prior Concentration in Geology-Chemistry Sc.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Basic Supporting Science Courses:

CHEM 0330	Equilibrium, Rate, and Structure	1
Four courses to build quantitative skills:		4
MATH 0090	Single Variable Calculus, Part I (or higher)	
BIOL 0495	Statistical Analysis of Biological Data	
or APMA 1650	Statistical Inference I	
CSCI 0111	Computing Foundations: Data	
ENGN 0040	Engineering Statics and Dynamics (or higher)	
APMA 0350	Applied Ordinary Differential Equations (or higher)	
PHYS 0050	Foundations of Mechanics (or higher)	
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	

Fourteen Concentration Courses

EEPS 0220	Understanding Earth and Environmental Processes	1
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	1
EEPS 0240	Earth: Evolution of a Habitable Planet	1
EEPS 1370	Environmental Geochemistry	1
EEPS 1410	Mineralogy	1
Three additional chemistry courses such as:		3
CHEM 0350	Organic Chemistry I	
CHEM 0360	Organic Chemistry II	
CHEM 0500	Inorganic Chemistry	
CHEM 1060	Advanced Inorganic Chemistry	
CHEM 1140	Physical Chemistry: Quantum Chemistry	
CHEM 1150	Physical Chemistry: Thermodynamics and Statistical Mechanics	
BIOL 0280	Biochemistry	
Two upper level courses from EEPS such as		2
EEPS 1130	Ocean Biogeochemical Cycles	
EEPS 1240	Stratigraphy and Sedimentation	
EEPS 1380	Environmental Stable Isotopes	
EEPS 1420	Petrology	
Three additional upper-level science or math courses with approval from the concentration advisor		3
EEPS 1970	Individual Study of Geologic Problems	1

Total Credits 19

Geophysics and Climate Physics

The Geophysics and Climate Physics concentration involves applying physics and mathematics to study processes that operate on and within the Earth and other planets, over short and long timescales. Geophysical approaches are fundamental for understanding how the oceans, atmosphere and ice sheets respond to climate change, managing resources such as water and geothermal energy, mitigating natural hazards such as earthquakes and volcanoes, and understanding the dynamic processes that shape the surfaces and control the interiors of Earth and other planetary bodies. Geophysics spans both theoretical modeling of physical processes and the analysis of geophysical data (including remote sensing and machine learning), and typically involves computing, as well as lab experiments and field work.

Both A.B. and Sc.B. degrees are offered, requiring 12 and 19 courses, respectively. These degrees build skills in critical thinking, data analysis and modeling, finding solutions to complex problems, and written and

oral communication. DEEPS provides a highly collaborative learning environment that emphasizes process-oriented, hands-on approaches in the classroom, in labs and on field trips. There are many opportunities for students to do paid research during the summer or academic year.

Students interested in this concentration may also wish to consider related concentrations: Earth, Climate and Biology, Geochemistry and Environmental Chemistry, and Earth and Planetary Science.

Standard program for the A.B. degree

This program is recommended for students interested in applying physical and mathematical principles toward understanding and modeling processes affecting Earth, its environment and climate, and other planets.

Its requirements are well-suited to students seeking to combine these fields with other educational interests, while preparing them for diverse careers including environmental science, global change, and Earth and planetary science. Some course requirements may be flexible based on consultation with the concentration advisor.

Note - For students still enrolled with the prior Concentration in Geology-Physics/Mathematics A.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Five supporting science courses:

CHEM 0330	Equilibrium, Rate, and Structure (or equivalent)	1

A course involving mechanics such as: 1

PHYS 0050	Foundations of Mechanics	
PHYS 0070	Analytical Mechanics	
ENGN 0040	Engineering Statics and Dynamics (or the equivalent)	

Three courses in APMA or MATH, one of which must be APMA 0350 or equivalent 3

Seven concentration courses:

Two of these four fundamentals courses: 2

EEPS 0220	Understanding Earth and Environmental Processes	
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	
EEPS 0240	Earth: Evolution of a Habitable Planet	
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	
or EEPS 0350	Mathematical Methods of Fluid	

One of these courses: 1

EEPS 1430	Principles of Planetary Climate	
EEPS 1610	Solid Earth Geophysics	

Two of the following courses, can combine different foci: 2

Climate focus:		
EEPS 1310	Global Water Cycle	
EEPS 1510	Dynamic Meteorology	
EEPS 1520	Ocean Circulation and Climate	

Solid Earth and planets focus:

EEPS 1410	Mineralogy	
EEPS 1450	Structural Geology	
EEPS 1620	Continuum Physics of the Solid Earth	

Data science focus:

EEPS 1340	Machine Learning for the Earth and Environment	
or DATA 1340	Machine Learning for the Earth and Environment (EEPS 1340).	
EEPS 1690	Introduction to Methods in Data Analysis	
EEPS 1720	Tackling Climate Change with Machine Learning	

or DATA 1720 Tackling Climate Change with Machine Learning (EEPS 1720)

One additional EEPS course such as: 1

Climate focus:

EEPS 1130	Ocean Biogeochemical Cycles	
EEPS 1630	Introduction to Quantitative Glaciology	
EEPS 1820	Geophysical Fluid Dynamics: Rotating, Stratified Turbulence Edition	

Solid Earth and planets focus:

EEPS 1560	Global Tectonics	
EEPS 1650	Earthquake Seismology	
EEPS 1810	Physics of Planetary Evolution	

Data science focus:

EEPS 1330	Global Environmental Remote Sensing	

Other alternatives:

EEPS 1970	Individual Study of Geologic Problems	
	a field or sea course or any EEPS course listed in the concentration	

One course in physics or engineering such as: 1

PHYS 0060	Foundations of Electromagnetism and Modern Physics	
PHYS 0470	Electricity and Magnetism	
PHYS 0500	Advanced Classical Mechanics	
PHYS 1600	Computational Physics	
ENGN 0310	Mechanics of Solids and Structures	
ENGN 0490	Fundamentals of Environmental Engineering	
ENGN 0510	Electricity and Magnetism	
ENGN 0810	Fluid Mechanics	
ENGN 1370	Advanced Engineering Mechanics	

Total Credits 12

Standard program for the Sc.B. degree

This program is recommended for students interested in more in-depth study in climate science, geophysics, planetary science and related fields, potentially including graduate school and careers in these areas. Students will gain hands-on experience with theoretical and numerical modeling of processes, data analysis, and computing. Some course requirements may be flexible based on consultation with the concentration advisor.

Note - For students still enrolled with the prior Concentration in Geology-Physics/Mathematics Sc.B., please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Five supporting science courses:

CHEM 0330	Equilibrium, Rate, and Structure	1

A course involving mechanics such as: 1

PHYS 0050	Foundations of Mechanics	
PHYS 0070	Analytical Mechanics	
ENGN 0040	Engineering Statics and Dynamics (or the equivalent)	

Three courses in APMA or MATH, one of which must be APMA 0350 or equivalent 3

Fourteen Concentration Courses:

EEPS 0220	Understanding Earth and Environmental Processes	1
EEPS 0230	Geochemistry: Earth and Planetary Materials and Processes	1
or EEPS 0240	Earth: Evolution of a Habitable Planet	
EEPS 0250	Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction	1
or EEPS 0350	Mathematical Methods of Fluid	

EEPS 1430	Principles of Planetary Climate	1
EEPS 1610	Solid Earth Geophysics	1
Three of the following courses, can combine different foci:		3
Climate focus:		
EEPS 1310	Global Water Cycle	
EEPS 1510	Dynamic Meteorology	
EEPS 1520	Ocean Circulation and Climate	
Solid Earth and planets focus:		
EEPS 1410	Mineralogy	
EEPS 1450	Structural Geology	
EEPS 1620	Continuum Physics of the Solid Earth	
Data science focus:		
EEPS 1340	Machine Learning for the Earth and Environment	
EEPS 1690	Introduction to Methods in Data Analysis	
EEPS 1720	Tackling Climate Change with Machine Learning	
One additional EEPS course such as:		1
Climate focus:		
EEPS 1130	Ocean Biogeochemical Cycles	
EEPS 1630	Introduction to Quantitative Glaciology	
EEPS 1820	Geophysical Fluid Dynamics: Rotating, Stratified Turbulence Edition	
Solid Earth and planets focus:		
EEPS 1560	Global Tectonics	
EEPS 1650	Earthquake Seismology	
EEPS 1810	Physics of Planetary Evolution	
Data science focus:		
EEPS 1330	Global Environmental Remote Sensing	
Other alternatives:		
a field or sea course		
or any EEPS course listed in the concentration		
Three courses in physics or engineering such as:		3
PHYS 0060	Foundations of Electromagnetism and Modern Physics	
PHYS 0470	Electricity and Magnetism	
PHYS 0500	Advanced Classical Mechanics	
PHYS 1600	Computational Physics	
ENGN 0310	Mechanics of Solids and Structures	
ENGN 0490	Fundamentals of Environmental Engineering	
ENGN 0510	Electricity and Magnetism	
ENGN 0810	Fluid Mechanics	
ENGN 1370	Advanced Engineering Mechanics	
One additional upper-level science or math course with approval from the concentration advisor		1
EEPS 1970	Individual Study of Geologic Problems	1
Total Credits		19

German Studies

German Studies exposes students to the language, literature, and culture of the German speaking areas of Central Europe. Concentrators combine intensive study of the German language with interdisciplinary studies by complementing courses from the German Studies core program with courses from other departments that deal with topics from the German cultural tradition. The quest for national identity that dominated German history in the nineteenth and twentieth centuries has been augmented by contemporary Germany's efforts to come to terms with its past and create new ways of dealing with diversity. Our curriculum therefore looks back at the German literary, cultural, and historical tradition, examining figures from Goethe or Christa Wolf to Marx, Freud, Nietzsche, and

Heidegger, alongside the "texts" of contemporary German media, including television, film, and music. Most concentrators study abroad for one or two semesters.

*In spring 2017, Professor Jane Sokolosky will serve as concentration advisor. Professor Kristina Mendicino will return as concentration advisor in fall 2017.

Standard program for the A.B. degree

Many students elect to complete a double concentration, combining German Studies with one of the above areas, or with fields such as International Relations or Economics, Comparative Literature or History of Art and Architecture.

Knowledge of the German language is not required for declaring a concentration in German Studies. However, since language fluency is the basis for sophisticated understanding of German culture, students must meet a language requirement by the time they graduate.

Concentration Requirements

- Nine courses beyond GRMN 0400 or GRMN 0450;
- At least six of the nine courses must be at the 1000-level (or higher);
- Two of the 1000-level courses must involve writing assignments in German, and students must obtain at least a grade of B in these courses;
- At least five of the nine courses must be taken in the Department of German Studies (or four if a student spends a whole year in Germany on Study Abroad);
- Completion of a Senior Seminar (i.e. a course from the German Studies 1900 series) as part of the five courses within the Department of German Studies; and
- If a student studies abroad for one semester, as many as four courses, in the case of two semesters, as many as five courses, from study abroad may count toward the concentration.

GRMN 0500F	Twentieth-Century German Culture
GRMN 0600C	From Faust to Freud: Germany's Long 19th Century
GRMN 0750B	Tales of Vampirism and the Uncanny
GRMN 0750D	The Poetics of Murder: Crime Fiction from Poe to the Present
GRMN 0750F	Historical Crime Fiction
GRMN 1200C	Nietzsche - The Good European
GRMN 1200D	Repetition: Kierkegaard, Nietzsche and Freud
GRMN 1320A	German Aesthetics from Lessing to Heidegger
GRMN 1320D	Goethe
GRMN 1320E	Classical German Literature: Goethe und die Klassik
GRMN 1320F	Eighteenth-Century German Aesthetics
GRMN 1320G	Drama and Religion
GRMN 1320I	What is an Image? German Aesthetics and Art from Lessing to Heidegger
GRMN 1320O	Freudian Inspirations: Psychoanalysis and the Arts
GRMN 1320S	Reading Friedrich Hölderlin; An Introduction
GRMN 1330A	The Individual in the Age of Industry
GRMN 1340A	Crime and Punishment: Introduction to German Mystery Texts and Films
GRMN 1340B	Guilt Management: Postwar German Culture
GRMN 1340C	Jahrhundertwende 1900
GRMN 1340D	Modern German Prose, 1978-1998
GRMN 1340I	Turn of the Century
GRMN 1340J	The Works of Franz Kafka

GRMN 1340K	Unmittelbar nach 1945: Literatur und Film in Deutschland	GRMN 1661A	Race and Classical German Thought
GRMN 1340L	The Modern Period	GRMN 1661E	Germany, Alcohol, and the Global Nineteenth Century
GRMN 1340M	Kafka's Writing	GRMN 1661F	Music, Religion, Politics (MUSC 1675)
GRMN 1340Q	Vergangenheitsbewältigung: German Literature of Memory	GRMN 1661G	The Case of Wagner (MUSC 1640G)
GRMN 1440A	Dada-Performance and Digital-Interactivity	GRMN 1661L	The Promise of Being: Heidegger for Beginners (COLT 1610V)
GRMN 1440C	Poetry and the Sublime	GRMN 1700A	Introduction to Yiddish Culture and Language (JUDS 1713)
GRMN 1440D	Modernity and Its Discontents: The German Novella	GRMN 1770	Introduction to Yiddish Culture and Language (JUDS 1713)
GRMN 1440E	Märchen	GRMN 1770A	Introduction to Yiddish Culture (JUDS 1713)
GRMN 1440F	Lyric Poetry From the Middle Ages to the Present	GRMN 1800	Posthumanism and the Ends of Man (COLT 1814Y)
GRMN 1440H	Projections of America	GRMN 1800A	Berlin: Dissonance, Division, Revision (COLT 1813J)
GRMN 1440L	German Lyric Poetry: From Goethe to Heine	GRMN 1900A	The Weimar Republic (1918-1933)
GRMN 1440N	Kunstmaerchen: the Literary Fairytale in the Nineteenth Century	GRMN 1900B	Sites of Memory
GRMN 1440O	Modern German Drama	GRMN 1900C	Cultural Industry and the Aesthetics of the Spectacle
GRMN 1440P	Heroes, Failures and Other Peculiar Characters-The German Novel from Goethe to Kafka	GRMN 1900D	Fleeing the Nazis: German Culture in Exile, 1933-1945
GRMN 1440S	Grimms' Fairy Tales	GRMN 1900E	Made in Germany - A Cultural History of Science, Technology, and Engineering
GRMN 1440W	The European Novel from Goethe to Proust (COLT 1420)	GRMN 2320B	The Works of Heinrich Kleist
GRMN 1440X	"Stranger Things: The German Novella"	GRMN 2320C	Enlightened Laughter
GRMN 1440Y	Return to Sender: Love, Letters, and Literature	GRMN 2320D	Kafka in English
GRMN 1441A	Theater and Revolution (COLT 1411B)	GRMN 2320E	Political Romanticism
GRMN 1441C	Introduction to German Romantic Poetry	GRMN 2330A	Vision and Narration in the 19th Century
GRMN 1450A	German-Jewish Literature	GRMN 2340A	German Literature 1968-1989
GRMN 1450B	Die Berliner Republik und die Vergangenheit	GRMN 2340B	Poetik der AutorInnen
GRMN 1450C	National Socialism and the Shoah in Recent German Prose	GRMN 2340C	German Modernism
GRMN 1450F	20 Years After: The End of GDR and German Reunification	GRMN 2460A	German Literature 1945-1967
GRMN 1450G	Love and Death	GRMN 2460C	Literature of the German Democratic Republic
GRMN 1450H	Images of America in German Literature	GRMN 2460D	Thomas Mann: Die Romane
GRMN 1640C	German National Cinema from 1917 to 1989, and Cold War Germanys in Film	GRMN 2500A	Rethinking the Bildungsroman (COLT 2520G)
GRMN 1660B	Berlin: A City Strives to Reinvent Itself	GRMN 2660A	On the Sublime
GRMN 1660C	German Culture in the Nazi Era	GRMN 2660C	Socialism and the Intellectuals
GRMN 1660F	After Hitler: German Culture and Politics, 1945 to Present	GRMN 2660G	Reading (in) German Literature
GRMN 1660G	Kafka	GRMN 2660H	Historicism, Photography, Film
GRMN 1660H	Literary Discourse of Minority Cultures in Germany	GRMN 2660I	Torture in European Literature and Aesthetic Theory
GRMN 1660I	Literature and Other Media	GRMN 2660O	From Hegel to Nietzsche: Literature as/and Philosophy
GRMN 1660K	Thinking After Philosophy	GRMN 2660P	The Essay: Theory and Praxis
GRMN 1660L	German Jews and Capitalist Markets in the Long Nineteenth Century	GRMN 2660Q	Freud and Lacan (ENGL 2900T)
GRMN 1660P	Having Beethoven Over in 1970	GRMN 2661A	"Other Worlds"
GRMN 1660Q	Film and the Third Reich	GRMN 2661F	Textual Border Crossings: Translational Literature
GRMN 1660R	Freud	GRMN 2661J	Art, Philosophy, and Truth: A Close Reading of Benjamin's Essay on Goethe's Elective Affinities
GRMN 1660S	Mord und Medien. Krimis im intermedialen Vergleich	GRMN 2661Q	Goethe's Faust
GRMN 1660T	Germans/Jews, Deutsche (und) Juden	GRMN 2662A	Theories of Poetry and the Poetic
GRMN 1660U	What was Socialism? From Marx to "Goodbye Lenin"		
GRMN 1660V	Nietzsche		
GRMN 1660W	Early German Film and Film Theory		

Honors

Candidates for honors will be expected to have a superior record in departmental courses and will have to be approved by the Department of German Studies. Honors candidates must take one additional course

at the 1000-level from the German studies offerings and present an acceptable Senior Honors Thesis. The additional course may be used for preparation of the honors thesis. Students are encouraged to discuss their thesis topics with the concentration advisor no later than the third week of classes in Fall of their Senior year.

Health & Human Biology

Health and Human Biology is an interdisciplinary concentration that provides a rigorous foundation in the biological sciences with substantive course work in humanities and social sciences within a subfield of Human Health and Disease. The program includes: background courses, biology core courses, a set of theme courses, and a Senior Capstone activity. Background courses provide the essential foundations in chemistry, mathematics, methods, and basic biology. These support the Biology core, which is comprised of a flexible menu of intermediate and advanced courses. A required portion of the Biology core is Genetics, a cornerstone of human biology and its interface with other fields. The Biology core underscores the related coursework within the Health and Disease Theme. The Theme courses are social science and humanities courses that form a cohesive, thoughtful grouping. Theme groupings must be approved by the advisor. A required senior capstone course or activity builds on the program's focus.

Program Requirements

REQUIRED BACKGROUND:

Four (4) courses including:

MATH 0090	Single Variable Calculus, Part I (or equivalent placement)	1
OR		
MATH 0050 & MATH 0060	Analytic Geometry and Calculus and Analytic Geometry and Calculus	
OR		
MATH 0100 or MATH 0170	Single Variable Calculus, Part II (Accelerated)	
CHEM 0330	Equilibrium, Rate, and Structure	1
BIOL 0200	The Foundation of Living Systems	1
Statistics or methods course chosen with advisor's help.		1

CORE PROGRAM:

In addition to the stated background in Chemistry, Math, Biology and Statistics, five (5) Biology plus four (4) coherently-grouped Theme courses, plus a Senior-Year Capstone course or project. (See description of Capstone at link below this table).

BIOLOGY:

Five (5) courses, including: 5
Genetics, which can be fulfilled in the following ways:

BIOL 0470	Genetics	
-OR-		
BIOL 0480 & BIOL 0500	Evolutionary Biology and Cell and Molecular Biology	
-OR-		
BIOL 0480 & BIOL 0510	Evolutionary Biology and Introductory Microbiology	
-OR-		
BIOL 0480 & BIOL 0280	Evolutionary Biology and Biochemistry	

Select one course in structure/function/development such as:

BIOL 0400	Biological Design: Structural Architecture of Organisms	
BIOL 0800	Principles of Physiology	
BIOL 1310	Developmental Biology	
BIOL 1800	Animal Locomotion	
NEUR 0010	The Brain: An Introduction to Neuroscience	

One course in organismal/population biology such as:

BIOL 0380	The Ecology and Evolution of Infectious Disease	
BIOL 0410	Invertebrate Zoology	
BIOL 0420	Principles of Ecology	
BIOL 0480	Evolutionary Biology	
BIOL 1470	Conservation Biology	
BIOL 1555	Methods in Informatics and Data Science for Health	
ENVS 0490	Environmental Science in a Changing World	

Or a course from the NEUR 1940 series

Two Biology or Neuroscience courses. At least one must be at the advanced level.

THEME: With the advisor's assistance, a theme is chosen and a cohesive set of courses are selected from outside of Biology and Neuroscience. 4

No more than TWO courses from a given department may be included in the theme portion

Students will then select from FOUR theme options: 1) Mind, Brain, Behavior, 2) Planetary Health, 3) Global Health, 4) Social Determinants of Health

SENIOR CAPSTONE ACTIVITY: Must be conducted during the senior year, fulfilled by one of the following, and related to the students learning goals in the concentration: 1

1) Advisor approved senior seminar or advanced course related to the theme

2) One semester of independent research/independent study (BIOL 1950 or BIOL 1960); in the case of a senior honors thesis, either BIOL 1950 or BIOL 1960 can be used as the capstone.

3) An appropriate internship with a scholarly context can be used if coupled with independent study mentored by a Brown faculty member the following semester.

Total Credits 14

CAPSTONE: See <https://www.brown.edu/academics/biology/undergraduate-education/undergraduate/health-and-human-biology/> for more information on the Capstone Activity.

HONORS: See more information about Honors at <https://www.brown.edu/academics/biology/undergraduate-education/honors-biological-sciences/>.

Hispanic Literatures and Cultures

Spanish is the second most widely spoken language in the world and the second language of the United States. In our society, knowing Spanish is not just an asset; it is increasingly a necessity. The Spanish language program offers a sequence of courses ranging from basic to advanced. Students at all levels develop proficiency in speaking, listening, reading, and writing while also studying the cultures and societies of the contemporary Spanish-speaking world. The Hispanic Literatures and Cultures concentration enables students to develop advanced Spanish skills while acquiring a solid background in the complex history, literature, cultures, and intellectual traditions of Spain, Latin America, and the Latinx-U.S. The department offers a variety of courses on topics related to literary history and theory; multicultural contact; linguistics and the history of the language; visual culture, film, and performance studies. Interdisciplinarity is a hallmark of the department, and students in this concentration are encouraged to broaden their perspectives by taking relevant courses in other departments. Most choose to strengthen their academic preparation by participating in a study abroad program in Spain or Latin America and by engaging with Latin American and Latinx communities in the United States.

Concentration Requirements and Overview of the Curriculum

The concentration requires a minimum of ten courses: one required course, HISP 0650 *Advanced Spanish through Literature and Film* (unless waived¹); up to six courses from HISP 0550, HISP 0600 or at the 700 level; and at least three courses at the 1000 level (or equivalent with the approval of the concentration advisor). HISP 0650 gives students fundamental tools for critical analysis while also specifically targeting the development of advanced grammar and writing skills. The 700 level encompasses panoramic courses in the literary and cultural histories of Spain, Latin America, and the Latinx USA, as well as introductory courses on professional and literary translation and Spanish linguistics, all of which place emphasis on continued refinement of written and oral expression in Spanish. Courses at the 1000 level focus on particular authors, genres, periods, or special topics and introduce students to major critical voices and scholarly perspectives on the materials studied.

Concentrators must take at least one Hispanic Studies course with the WRIT designation.

¹ Students can waive this course with an AP of 5 in Spanish Literature; or an SAT II of 750 or above; or a Brown Placement Score in Spanish of 651 or above. For more information on placements go to: <https://www.brown.edu/academics/hispanic-studies/language-placement>

Students may apply up to four related courses from outside the department toward the concentration, with prior approval from the Director of Undergraduate Studies (DUS). These courses may come from study abroad, transfer credit, and other departments and programs at Brown (e.g., Latin American and Caribbean Studies, Comparative Literature, History, Ethnic Studies, Anthropology), as long as they deal with themes related to the literatures, histories, languages², and/or cultures of Spain, Latin America, or the Latinx USA.

Capstone colloquium: Giving students an opportunity to reflect upon and celebrate their achievements in the Hispanic Literatures and Cultures concentration, there is an annual colloquium with graduating seniors, faculty and friends. Each graduating senior shares a piece of work or a text, whether studied in class or produced as an assignment, that stands out as particularly significant to their time in Hispanic Studies. This can take several forms: it can be an extract from a poem, novel, play, or critical essay; it can also be a film or music clip or piece of art; or, a translation done by the student, or an original creative text.

The Hispanic Studies Literatures and Cultures concentration is designed to encourage and support language-specific study, for we believe that the linguistic cultural products of the Spanish-speaking world are most deeply appreciated in the original language. Hispanic Studies courses are therefore generally taught in Spanish, unless otherwise specified in the course description. Up to two courses taken in English or another language, whether in the department or outside, can count toward the concentration.

² Up to two courses in languages other than Spanish that are spoken in or are closely related to Spain and/or Latin America can count towards the concentration. As with all courses taken outside the department, students must petition the DUS in advance to have these courses counted, demonstrating their direct link to the student's interests, for instance, for Honors Thesis research.

Required Course:

HISP 0650	Advanced Spanish Through Literature & Film

Up to six courses from HISP 0550, HISP 0600, or at the 700-level, such as:

HISP 0550	Intermediate Spanish for Heritage Speakers
HISP 0600	Advanced Spanish II
HISP 0710B	Hispanic Culture Through Cinema
HISP 0710C	Introducción a la lingüística hispánica
HISP 0710E	Introduction to Professional Translation and Interpretation

HISP 0730	Encounters: Latin America in Its Literature and Culture
HISP 0740	Intensive Survey of Spanish Literature
HISP 0750B	The Latin American Diaspora in the US
HISP 0750G	Wildeyed Stories
HISP 0750Q	Health, Illness and Medicine in Spanish and Spanish American Literature and Film
At least three 1000-level courses, such as:	
HISP 1240A	Fashion and Fiction in the Early Modern Hispanic World
HISP 1210F	History of the Spanish Language
HISP 1240L	Don Quijote de la Mancha
HISP 1330W	War, Revolution and the Cult of the Hero in Latin American Culture
HISP 1331E	Visions and Voices of Indigenous Mexico
HISP 1331J	Hablan los hijos: una nueva generación de escritores latinoamericanos
HISP 1331U	Underground Studies: Extractivism and Decolonization in the Americas/Abiyala (ENVS 1233).
HISP 1371T	Reimagining the Line: Contemporary Arts and Political Imagination at the Mexico-US Border
Students can also take up to two cross-listed courses, such as:	
COLT 0510F	Fidel Castro and Che Guevara, The Men and the Myths
COLT 0610E	Crisis and Identity in Mexico, 1519-1968
COLT 0710I	New Worlds: Reading Spaces and Places in Colonial Latin America
COLT 1813I	The Colonial and the Postcolonial Marvelous
LACA 0500	Around Latin America in 80 Days: An Historical and Cultural Journey
LACA 1630	Engaged Humanities: Storytelling in the Americas
Students can take up to two courses in languages other than Spanish, such as:	
ANTH 1650	Ancient Maya Writing
ETHN 1200D	Latinx Literature
HIST 0234	Modern Latin America
HIST 1967T	History of the Andes from the Incas to Evo Morales
NAHU 0100	Beginning Nahuatl
POBS 0400	Writing and Speaking Portuguese
SOC 1281	Migration in the Americas
Total Credits = 10	

Honors Thesis or Project

Students with an excellent record in their Hispanic Studies courses will be eligible to write an Honors Thesis or write and produce an Honors Project. Students pursuing honors must have a record of all A's or a final grade of S with distinction in courses they have as S/NC. Typically, the Honors Thesis is a major research paper of approximately 40 to 80 pages in Spanish, depending on the topic and treatment necessary. Alternatively, a student may, with prior permission of the Director of Undergraduate Studies, present a film, gallery exhibition, or other appropriate project, together with a paper that clearly demonstrates the academic foundations and relevance of the project. For additional details regarding the Honors Thesis in Hispanic Studies, please refer to our website (<https://www.brown.edu/academics/hispanic-studies/honors-program/>).

History

History is the study of how societies and cultures across the world change over time. History concentrators learn to write and think critically, and to understand issues from a variety of perspectives. The department offers a wide variety of courses concerned with changes in human experience through time, ranging from classical Greek and Roman civilizations to the histories of Africa, the Middle East, the Americas, and Asia. While some courses explore special topics, others concentrate on the history of a particular country (e.g. China or Brazil) or period of time (e.g. Antiquity or the 20th century). By taking advantage of our diverse course offerings, students can engage in and develop broad perspectives on the past and the present.

Prospective concentrators should visit the History site (<https://www.brown.edu/academics/history/undergraduate/history-concentration/>) and visit the office hours of their prospective concentrator advisor (<https://www.brown.edu/academics/history/undergraduate/history-concentration/concentration-advisors/>) (assigned according to student surname).

Concentration Requirements

Basic requirement: A minimum of 10 courses, at least 8 of which must be courses taught by a Brown University History Department faculty member (<https://www.brown.edu/academics/history/faculty/>) (including their cross-listed courses) and/or courses offered by the Brown History Department (such as those taught by Visiting or Adjunct Professors). Transfer students or study-abroad students who have spent a year or more at another institution must have at least 7 of 10 history courses taught by Brown History faculty or otherwise offered through the Brown History Department.

Summary

Two (2) Courses in the "Premodern" era (P)

One (1) Course in Africa OR Middle East - South Asia

One (1) Course in East Asia OR Latin America

One (1) course in Europe OR North America

One (1) course designated Global

Students may take a maximum of 5 courses in any single geography

Field of Focus (FF) - Students must take four courses in the field of focus. These courses may be used to satisfy different requirements (geography and field of focus, etc.).

Capstone Seminar: All concentrators must complete at least one capstone seminar (HIST 1960s and HIST 1970s series and select HIST 1980s courses), ideally, in the field of focus.

Honors (optional) 3 additional courses related to writing a thesis (one of which, HIST 1992, can count towards your 10 concentration requirements)

Note: Courses can fulfill more than one of these requirements at a time. For instance, HIST1963Q "Sex, Power, God: A Medieval Perspective" would count as "Premodern," a "Europe" class, and a capstone seminar. It could also count towards a field of focus in premodern Europe or the history of sexuality or the history of religion, etc.

Courses below 1000: Students may count no more than four courses numbered below 1000 toward the concentration requirements. Students considering a concentration in History are encouraged to take First Year and Sophomore seminars, as well as courses in the HIST 0150 and 0200 series, for an introduction to historical reasoning, discussion, and writing.

Field of focus: In History, concentrators choose or create their own "track," rather than having to select an existing track. The field of focus must include a minimum of four courses, and it may be: geographical (such as Latin America); geographical and chronological (such as Modern North America); or transnational (such as ancient world); or thematic (such as urban history). All students should consult a concentration advisor early in the process about their potential field of focus. All fields are subject to approval by the concentration advisor.

Thematic fields of focus include but are not restricted to:

- Comparative Colonialism
- Gender and Sexuality
- Law and Society
- Race and Ethnicity
- Science, Technology, Environment and Medicine (STEAM)
- Urban History

Examples of transnational foci include:

- The Ancient World
- The Early Modern Atlantic World
- Africa and the Diaspora
- The Mediterranean World from Antiquity to the Middle Ages
- The Pacific World

Geographic Distribution: Concentrators must take at least four courses defined by geography as follows:

- One course in Africa or Middle East-South Asia
- One course in East Asia or Latin America
- One course in Europe or North America
- One course in Global

Maximum of five courses in a single geography

"Global" courses are defined as those that deal with at least three different regions of the world.

For details on which courses count toward which geographical distribution requirement click here (<https://docs.google.com/spreadsheets/d/1NT5l7zAqIXDCivZXcTdsdceSnMD5v28ke6550tnBrnE/edit/#gid=2138711521>).

Chronological Distribution: All concentrators must complete at least two courses designated as "P" (for pre-modern).

For a listing of which courses count as "P" courses click here (<https://docs.google.com/spreadsheets/d/1NT5l7zAqIXDCivZXcTdsdceSnMD5v28ke6550tnBrnE/edit/#gid=2138711521>).

Capstone Seminar: All concentrators must complete at least one capstone seminar (HIST 1960s and HIST 1970s series and select HIST 1980s courses). They provide students with an opportunity to delve deeply into a historical problem and to write a major research and/or analytical paper which serves as a capstone experience. Students considering writing a senior honors thesis are advised to take an advanced seminar in their junior year. First-Year students are not advised to take these courses.

Transferring Courses: The History Department encourages students to take history courses at other institutions, either in the United States or abroad, as well as history-oriented courses in other departments and programs at Brown. Students may apply two courses taken in other departments/programs at Brown to the ten-course minimum for the History concentration. Students who spend one semester at another institution may apply to their concentration a maximum of two courses from other departments or institutions, and those who spend more than one semester at another institution may apply to their concentration a third course transferred from another institution.

Students wishing to apply such courses must present to their concentration advisor justification that those courses complement some aspect of their concentration. Courses from other Brown departments *may not* be applied toward the chronological distribution requirement. History courses taught by trained historians from other institutions (e.g., from study abroad or a previous institution) *may* be applied toward the chronological distribution requirement so long as at least 2/3 of the course content examine the "premodern" or "early modern" periods.

It is normally expected that students will have declared their intention to concentrate in History and have their concentration programs approved before undertaking study elsewhere. Students taking courses in Brown-run programs abroad automatically receive University transfer credit, but concentration credit is granted only with the approval of a concentration advisor. Students taking courses in other foreign-study programs or at other universities in the United States must apply to the Transfer Credit Advisor and then get approval from a concentration advisor.

Regular Consultation: Students are strongly urged to consult regularly with their concentration advisor or a department advisor about their program. During the seventh semester, all students must meet with their concentration advisor for review and approval of their program.

COURSES BELOW 1000

LECTURE COURSES

150's: Thematic Courses that Cut Across Time and Place

HIST 0150A	History of Capitalism
HIST 0150B	The Philosophers' Stone: Alchemy From Antiquity to Harry Potter
HIST 0150C	Locked Up: A Global History of Prison and Captivity
HIST 0150D	Refugees: A Twentieth-Century History
HIST 0150F	Pirates
HIST 0150G	History of Law: Great Trials
HIST 0150H	Foods and Drugs in History
HIST 0150I	The Making of the Modern World
HIST 0150J	The Ocean in Global History

Gateway Lecture Courses

HIST 0202	African Experiences of Empire
HIST 0203	Modern Africa: From Empire to Nation-State
HIST 0212	Histories of East Asia: China
HIST 0214	Histories of East Asia: Japan
HIST 0215	Modern Korea: Contending with Modernity
HIST 0218	The Making of Modern East Asia
HIST 0228A	War, Tyranny, and Peace in Modern Europe
HIST 0232	Clash of Empires in Latin America
HIST 0233	Colonial Latin America
HIST 0234	Modern Latin America
HIST 0243	Modern Middle East Roots: 1492 to the Present
HIST 0244	Understanding the Middle East: 1800s to the Present
HIST 0247	Civilization, Empire, Nation: Competing Histories of the Middle East
HIST 0248	'Neither of the East nor West': The Ottoman Empire
HIST 0250	American Exceptionalism: The History of an Idea
HIST 0252	The American Civil War
HIST 0253	Religion, Politics, and Culture in America, 1865 - Present
HIST 0255A	Mexican American History
HIST 0256	Introduction to Latinx History
HIST 0257	Modern American History: New and Different Perspectives
HIST 0259	Labor, Land and Culture: A History of Immigration in the U.S.
HIST 0270A	From Fire Wielders to Empire Builders: Human Impact on the Global Environment before 1492
HIST 0270B	From the Columbian Exchange to Climate Change: Modern Global Environmental History
HIST 0273A	The First Globalization: The Portuguese in Africa, Asia, and the Americas
HIST 0276	A Global History of the Atomic Age
HIST 0276B	Science and Capitalism
HIST 0285A	Modern Genocide and Other Crimes against Humanity

HIST 0286A History of Medicine I: Medical Traditions in the Old World Before 1700

HIST 0286B History of Medicine II: The Development of Scientific Medicine in Europe and the World

SEMINAR COURSES

First-Year Seminars

HIST 0510A	Shanghai in Myth and History
HIST 0520A	Athens, Jerusalem, and Baghdad: Three Civilizations, One Tradition
HIST 0521A	Christianity in Conflict in the Medieval Mediterranean
HIST 0521M	The Holy Grail and the Historian's Quest for the Truth
HIST 0522G	An Empire and Republic: The Dutch Golden Age
HIST 0522N	Reason, Revolution and Reaction in Europe
HIST 0522O	What is Enlightenment?
HIST 0523A	The Holocaust in Historical Perspective
HIST 0523B	State Surveillance in History
HIST 0523M	History of Fascism
HIST 0523P	The First World War
HIST 0535A	Atlantic Pirates
HIST 0535B	Conquests
HIST 0537A	Popular Culture in Latin America and the Caribbean
HIST 0537B	Tropical Delights: Imagining Brazil in History and Culture
HIST 0550A	Object Histories: The Material Culture of Early America
HIST 0551A	Abraham Lincoln: Historical and Cultural Perspectives
HIST 0552A	A Textile History of Atlantic Slavery
HIST 0555B	Robber Barons
HIST 0556A	Sport in American History
HIST 0556B	Inequality and American Capitalism in the Twentieth Century
HIST 0557A	Slavery and Historical Memory in the United States
HIST 0557B	Slavery, Race, and Racism
HIST 0557C	Narratives of Slavery
HIST 0557D	World of Walden Pond: Transcendentalism in the Age of Reform
HIST 0558B	History of American Feminism
HIST 0558C	Latinx Social Movement History
HIST 0559A	Culture and U.S. Empire
HIST 0559B	Asian Americans and Third World Solidarity
HIST 0574A	The Silk Road, Past and Present
HIST 0576A	The Arctic: Global History from the Dog Sled to the Oil Rig
HIST 0577A	The Chinese Diaspora: A History of Globalization
HIST 0577B	The US-Mexico Border and Borderlands: A Bilingual English-Spanish Seminar
HIST 0580M	The Age of Revolutions, 1760-1824
HIST 0580O	Making Change: Nonviolence in Action
HIST 0582A	Animal Histories
HIST 0582B	Science and Society in Darwin's England

Sophomore Seminars

HIST 0621B The Search for King Arthur

HIST 0623B	The Russian Revolution
HIST 0623C	Americans in the USSR
HIST 0637B	Fractious Friendships: The United States and Latin America in the Twentieth Century
HIST 0654A	Welfare States and a History of Modern Life
HIST 0654B	American Patriotism in Black and White
HIST 0655A	Culture Wars in American Schools
HIST 0656A	History of Intercollegiate Athletics
HIST 0657A	Early American Lives
HIST 0658D	Walden + Woodstock: The American Lives of Ralph Waldo Emerson and Bob Dylan
HIST 0675A	The Chinese Diaspora: A History of Globalization
HIST 0685A	The Social Lives of Dead Bodies in China and Beyond

COURSES WITH NUMBERS 1000-1999**LECTURE COURSES**

HIST 1030	Entangled South Africa
HIST 1060	Colonial Africa
HIST 1070	"Modern" Africa
HIST 1080	Humanitarianism and Conflict in Africa
HIST 1101	Chinese Political Thought from Confucius to Xi Jinping
HIST 1110	Imperial China/China: Culture and Legacy
HIST 1111	Women and Gender Relations in China
HIST 1112	China's Early Modern Empires
HIST 1118	China's Late Empires
HIST 1120	At China's Edges
HIST 1121	The Modern Chinese Nation: An Idea and Its Limits
HIST 1122	China Pop: The Social History of Chinese Popular Culture
HIST 1141	Japan in the Age of the Samurai
HIST 1149	Imperial Japan
HIST 1150	Modern Japan
HIST 1155	Japan's Pacific War: 1937-1945
HIST 1156	Postwar Japan
HIST 1200A	Mediterranean Culture Wars: Archaic Greek History, c 1200 to 479 BC
HIST 1200B	The Fall of Empires and Rise of Kings: Greek History to 478 to 323 BCE
HIST 1200C	History of Greece: From Alexander the Great to the Roman Conquest
HIST 1201A	Roman History I
HIST 1201B	Roman History II: The Empire
HIST 1202	Formation of the Classical Heritage: Greeks, Romans, Jews, Christians, and Muslims
HIST 1205	The Long Fall of the Roman Empire
HIST 1210A	The Viking Age
HIST 1211	Becoming Medieval: Self, Other, and the World
HIST 1216	The Paradox of Early Modern Europe
HIST 1230A	Modern European Intellectual and Cultural History: Revolution and Romanticism, 1760-1860
HIST 1230B	Modern European Intellectual and Cultural History: The Fin de Siecle, 1880-1914
HIST 1230C	The Search for Renewal in 20th century Europe

HIST 1240A	Politics of Violence in 20C Europe
HIST 1241A	Migration in European History
HIST 1260D	Living Together: Muslims, Christians, and Jews in Medieval Iberia
HIST 1261E	After Empire: Modern Spain in the 20th Century
HIST 1262F	Women, Gender, and Feminism in Early Modern Italy
HIST 1262M	Truth on Trial: Justice in Italy, 1400-1800
HIST 1264M	Cultural History of the Netherlands in a Golden Age and a Global Age
HIST 1266C	English History, 1529-1660
HIST 1266D	British History, 1660-1800
HIST 1268A	The Rise of the Russian Empire
HIST 1268B	Russia in the Era of Reforms, Revolutions, and World Wars
HIST 1268C	The Collapse of Socialism and the Rise of New Russia
HIST 1270C	German History, 1806-1945
HIST 1272D	The French Revolution
HIST 1272E	Paris: Sacred and Profane, Imagined and Real
HIST 1280	Death from Medieval Relics to Forensic Science
HIST 1310	History of Brazil
HIST 1312	Brazil: From Abolition to Emerging Global Power
HIST 1313	Brazilian Biographies
HIST 1320	Rebel Island: Cuba, 1492-Present
HIST 1331	The Rise and Fall of the Aztecs: Mexico, 1300-1600
HIST 1332	Reform and Rebellion: Mexico, 1700-1867
HIST 1333	The Mexican Revolution
HIST 1340	History of the Andes from Incas to Evo Morales
HIST 1360	Amazonia from the Prehuman to the Present
HIST 1370	The United States and Brazil: Tangled Relations
HIST 1381	Latin American History and Film: Memory, Narrative and Nation
HIST 1440	The Ottomans: Faith, Law, Empire
HIST 1445	The Making of the Ottoman World, 15th - 20th Centuries
HIST 1455	The Making of the Modern Middle East
HIST 1456	Bankrupt: An Economic and Financial History of the Middle East in the 19th and 20th Centuries
HIST 1457	Understanding the Palestinians
HIST 1460	Modern Turkey: Empire, Nation, Republic
HIST 1470	Legal History in the Middle East
HIST 1501	The American Revolution
HIST 1502	The Early Republic United States
HIST 1503	Antebellum America and the Road to Civil War
HIST 1505	Making America Modern
HIST 1507	American Babylon: Crisis and Reckoning in the Postwar United States, 1945-1980
HIST 1511	Sinners, Saints, and Heretics: Religion in Early America
HIST 1512	First Nations: The People and Cultures of Native North America to 1800

HIST 1513	U.S. Cultural History from Revolution to Reconstruction
HIST 1514	Capitalism, Slavery and the Economy of Early America
HIST 1515	American Slavery
HIST 1530	The Intimate State: The Politics of Gender, Sex, and Family in the U.S., 1873-Present
HIST 1531	Movement Politics in Modern America
HIST 1532	Black Freedom Struggle Since 1945
HIST 1550	American Urban History, 1600-1870
HIST 1551	American Urban History, 1870-1965
HIST 1553	Empires in America to 1890
HIST 1554	American Empire Since 1890
HIST 1570	American Legal and Constitutional History
HIST 1571	The Intellectual History of Black Women
HIST 1620	Resisting Empire: Gandhi and the Making of Modern South Asia
HIST 1640	Inequality + Change: South Asia after 1947
HIST 1730	"Cannibals", "Barbarians" and "Noble Savages": Travel and Ethnography in the Early Modern World
HIST 1735	Slavery in the Early Modern World
HIST 1736	A Global History of the Reformation
HIST 1800	Religion and Power in North America to 1865
HIST 1820A	Environmental History
HIST 1820B	Environmental History of East Asia
HIST 1820G	Nature on Display
HIST 1825F	Nature, Knowledge, Power in Early Modern Europe
HIST 1825H	Science, Medicine and Technology in the 17th Century
HIST 1825J	History of Artificial Intelligence
HIST 1825L	The Roots of Modern Science
HIST 1825M	Science at the Crossroads
HIST 1825S	Science and Capitalism
HIST 1830B	Politics and the Psyche from Sigmund Freud to Donald Trump
HIST 1830M	From Medieval Bedlam to Prozac Nation: Intimate Histories of Psychiatry and Self
HIST 1835A	Unearthing the Body: History, Archaeology, and Biology at the End of Antiquity

SEMINAR COURSES

Non-Capstone Seminars

HIST 1947Q	History of Jews in Brazil
HIST 1952A	World of Walden Pond: Transcendentalism as a Social and Intellectual Movement
HIST 1956A	Thinking Historically: A History of History Writing
HIST 1956B	Rites of Power in Modern China
HIST 1956S	History of Artificial Intelligence
HIST 1958A	Archives of Desire: Non-Normative Genders and Sexualities in the Hispanophone World

SEMINAR COURSES

Capstone Seminars

HIST 1960G	Southern African Frontiers, c. 1400-1860
HIST 1960Q	Medicine and Public Health in Africa
HIST 1960R	South Africa Since 1990
HIST 1960S	North African History: 1800 to Present

HIST 1961B	Cities and Urban Culture in China
HIST 1961C	Knowledge and Power: China's Examination Hell
HIST 1961D	Heaven Above, Suzhou and Hangzhou Below: Urban Culture in Early Modern China
HIST 1961N	Colonization and Ethnicity in East Asian History
HIST 1962B	Life During Wartime: Theory and Sources from the Twentieth Century
HIST 1962C	State, Religion and the Public Good in Modern China
HIST 1962D	Japan in the World, from the Age of Empires to 3.11
HIST 1962E	Print and Power in Modern Southeast Asia
HIST 1963L	Barbarians, Byzantines, and Berbers: Early Medieval North Africa, AD 300-1050
HIST 1963M	Charlemagne: Conquest, Empire, and the Making of the Middle Ages
HIST 1963Q	Sex, Power, and God: A Medieval Perspective
HIST 1964A	Age of Impostors: Fraud, Identification, and the Self in Early Modern Europe
HIST 1964B	The Enchanted World: Magic, Angels, and Demons in Early Modern Europe
HIST 1964D	Women in Early Modern England
HIST 1964E	The English Revolution
HIST 1964F	Early Modern Ireland
HIST 1964G	Spin, Terror and Revolution: England, Scotland and Ireland, 1660-1720
HIST 1964H	Race and Empire in 18th Century France
HIST 1964K	Descartes' World
HIST 1964L	Slavery in the Early Modern World
HIST 1965A	City as Modernity: Popular Culture, Mass Consumption, Urban Entertainment in Nineteenth-Century Paris
HIST 1965B	Fin-de-Siècle Paris and Vienna
HIST 1965C	Stalinism
HIST 1965D	The USSR and the Cold War
HIST 1965E	Politics of the Intellectual in 20C Europe
HIST 1965H	Europe and the Invention of Race
HIST 1965I	Industrial Revolution in Europe
HIST 1965M	Double Fault! Race and Gender in Modern Sports History
HIST 1965L	Appetite for Greatness: Cuisine, Power, and the French
HIST 1965R	The Crisis of Liberalism in Modern History
HIST 1967C	Making Revolutionary Cuba, 1959-Present
HIST 1967E	In the Shadow of Revolution: Mexico Since 1940
HIST 1967F	The Maya in the Modern World
HIST 1967L	Politics and Culture Under The Brazilian Military Dictatorship, 1964-1985
HIST 1967Q	Gender and Sexuality in the Modern History of Latin America
HIST 1967R	History of Rio de Janeiro
HIST 1967T	History of the Andes from the Incas to Evo Morales
HIST 1968A	Approaches to the Middle East
HIST 1968F	History of Capitalism: The Eastern Mediterranean and the World Around
HIST 1968V	America and the Middle East: Histories of Connection and Exchange

HIST 1969A	Israel-Palestine: Lands and Peoples I
HIST 1969B	Israel-Palestine: Lands and Peoples II
HIST 1969C	Debates in Middle Eastern History
HIST 1969D	Palestine versus the Palestinians
HIST 1969F	Nothing Please Me: Understanding Modern Middle Eastern History Through Literature
HIST 1970A	Colonial Encounters: Indians, Europeans, and the Making of Early America
HIST 1970B	Enslaved! Indians and Africans in an Unfree Atlantic World
HIST 1970D	Problem of Class in Early America
HIST 1970F	Early American Money
HIST 1970G	Captive Voices: Atlantic Slavery in the Digital Age
HIST 1971D	From Emancipation to Obama
HIST 1972A	American Legal History, 1760-1920
HIST 1972E	Theory and Practice of Local History
HIST 1972F	Consent: Race, Sex, and the Law
HIST 1972G	Lesbian Memoir
HIST 1972H	U.S. Human Rights in a Global Age
HIST 1972I	Loss, Political Activism and Public Feelings: Between Fact and Affect
HIST 1972J	Racial Capitalism and U.S. Liberal Empire
HIST 1974A	The Silk Roads, Past and Present
HIST 1974B	War and Peace: A Global History
HIST 1974G	Nonviolence in History and Practice
HIST 1974J	Decolonizing Minds: A People's History of the World
HIST 1974K	Maps and Empires
HIST 1974M	Early Modern Globalization
HIST 1974P	Modernity's Crisis: Jewish History from the French Revolution to the Election of Donald Trump
HIST 1974S	The Nuclear Age
HIST 1974Y	Moral Panic and Politics of Fear
HIST 1976A	Native Histories in Latin America and North America
HIST 1976B	The History of Extinction
HIST 1976C	Animal, Vegetable, Mineral: Environmental Histories of Non-Human Actors
HIST 1976D	Powering the Past: The History of Energy
HIST 1976E	The Anthropocene: Climate Change as Social History
HIST 1976G	Animal Histories
HIST 1976H	Environmental History of Latin America 1492-Present
HIST 1976I	Imperialism and Environmental Change
HIST 1976J	Earth Histories: From Creation to Countdown
HIST 1976N	Topics in the History of Economic Thought
HIST 1976R	Histories of the Future
HIST 1977B	Feathery Things: An Avian Introduction to Animal Studies
HIST 1977I	Gender, Race, and Medicine in the Americas
HIST 1977J	War and Medicine since the Renaissance
HIST 1990	Undergraduate Reading Courses
HIST 1992	History Honors Workshop for Prospective Thesis Writers
HIST 1993	History Honors Workshop for Thesis Writers, Part I

HIST 1994	History Honors Workshop for Thesis Writers, Part II

Honors (OPTIONAL):

History concentrators in the 5th or 6th semester may apply for honors. To be admitted, students must have achieved two-thirds "quality grades" in History department courses. A "quality grade" is defined as a grade of "A" or a grade of "S" accompanied by a course performance report indicating a performance at the "A" standard.

Students who wish to enroll in honors are recommended to take HIST 1992, "History Honors Workshop for Prospective Students." HIST 1992 can count as one of the 10 courses required for graduation in history. HIST 1992 students who prepare a prospectus that receives a grade of A- or above will be admitted to the honors program. Students in their 7th semester who have not taken HIST 1992 (including but not limited to those who are away from Brown during that semester) may apply to the program by submitting a prospectus no later than the first day of that semester. All honors students must complete one semester of HIST 1993 "History Honors Workshop for Thesis Writers, Part I" and one semester of HIST 1994 "History Workshop for Thesis Writers, Part II." HIST 1993 and HIST 1994 do not count towards the 10 courses required for graduation in history; they are an additional two courses to the minimum of 10 required history courses. Students who contemplate enrolling in the honors program in History should consult the honors section of the department website. They are also encouraged to meet with the Director of the Honors Program (DHP), who serves as the honors advisor.

History of Art and Architecture

The concentration in History of Art and Architecture (HIAA) introduces students to the history of art, architecture, and material culture. Students in HIAA explore a wide range of artistic traditions from around the world, and develop the skills necessary to analyze artworks, artifacts, and the built environment dating from the paleolithic to the contemporary. Concentrators are encouraged to develop familiarity with the distinctive periods, regions, sub-fields, and theoretical approaches that collectively inform the discipline, while at the same time developing an individualized program. Concentrators will receive essential training in perceptual, historical, and critical analysis.

History of Art and Architecture Requirements

To complete the concentration, you will be expected to take a minimum of ten courses. Our goal in setting out these requirements is to welcome students into a lively and diverse department that also shares a cohesive and strong commitment to the field. We as a faculty want students to cultivate their special interests and also to venture into areas that may not be so familiar but that will open new and exciting possibilities for them. Ten courses are only the minimum requirement. Beyond that students are encouraged to take courses at RISD, participate in study abroad programs, and take courses in other Brown departments. As we are a truly interdisciplinary department, you will also find that our faculty collaborates with members of other departments to teach courses that bring together the strengths of different disciplines. We encourage both experimentation and concentration.

Since the history of art and architecture addresses issues of practice within specific historical contexts, concentrators are encouraged to take at least one studio art course. Courses in history also train students in methods and approaches that are highly relevant to the history of art and architecture. Study abroad can be a valuable enrichment of the academic work available on campus, in that it offers opportunities for first-hand knowledge of works of art and monuments as well as providing exposure to foreign languages and cultures. Study abroad should be planned in consultation with the concentration advisor in order to make sure that coursework will relate meaningfully to the concentrators program of study.

Summary of Concentration Requirements

5 Lecture Courses, numbered HIAA 0001-HIAA 0999 in at least three different geographic regions and two differed periods.	5
3 Seminars, numbered HIAA 1000-HIAA 1999	3

1 Elective taught in the department, cross-listed courses from other departments, or courses in other departments	1
1 Capstone Course	1
Total Credits	10

5 Lecture Courses, numbered HIAA 0001–HIAA 0999. The courses should engage at least three different geographic regions (Africa, Americas, Asia, Europe) and two different periods (Ancient-Medieval, Early Modern, Modern-Contemporary). Individual courses can be used to fulfill either the geographic or temporal breadth requirement, but not both. Courses tagged as “Multiple Regions” and “Multiple Periods” can be used to fulfill one geographic and one temporal breadth requirement, respectively.

Temporal Periods

Ancient/Medieval:

HIAA 0022	The Art of Enlightenment
HIAA 0024	Arts of Asia: Beginnings to 1300
HIAA 0032	Art and Architecture of the Roman Empire
HIAA 0322	The Arts of Religion and Ritual in the Ancient World

Early Modern:

HIAA 0063	Food and Art in the Early Modern World
HIAA 0660	Giotto to Watteau: Introduction to the Art of Europe from Renaissance to French Revolution

Modern/Contemporary:

HIAA 0070	Introduction to American Art: The 19th Century
HIAA 0072	Introduction to American Art: The Twentieth Century
HIAA 0075	Introduction to the History of Art: Modern Photography
HIAA 0077	Revolutions, Illusions, Impressions: A History of Nineteenth-Century Art
HIAA 0084	Postwar to Postmodernism: Art Since 1945
HIAA 0087	Contemporary Art
HIAA 0089	Contemporary Photography
HIAA 0090	The Other History of Modern Architecture
HIAA 0820	Art and Technology from Futurism to Hacktivism
HIAA 0850	Modern Architecture
HIAA 0860	Contemporary Architecture
HIAA 0861	City and Cinema

Multiple Periods:

HIAA 0023	South Asian Art and Architecture
HIAA 0081	Architecture of the House Through Space and Time
HIAA 0770	Architecture and Urbanism of Africa

Geographic Regions:

Africa:

HIAA 0770	Architecture and Urbanism of Africa

Americas:

HIAA 0070	Introduction to American Art: The 19th Century
HIAA 0072	Introduction to American Art: The Twentieth Century
HIAA 0089	Contemporary Photography

Asia:

HIAA 0022	The Art of Enlightenment
HIAA 0023	South Asian Art and Architecture

Europe:	
HIAA 0032	Art and Architecture of the Roman Empire
HIAA 0075	Introduction to the History of Art: Modern Photography
HIAA 0077	Revolutions, Illusions, Impressions: A History of Nineteenth-Century Art
HIAA 0660	Giotto to Watteau: Introduction to the Art of Europe from Renaissance to French Revolution
Multiple Regions:	
HIAA 0041	The Architectures of Islam
HIAA 0081	Architecture of the House Through Space and Time
HIAA 0084	Postwar to Postmodernism: Art Since 1945
HIAA 0087	Contemporary Art
HIAA 0090	The Other History of Modern Architecture
HIAA 0322	The Arts of Religion and Ritual in the Ancient World
HIAA 0820	Art and Technology from Futurism to Hacktivism
HIAA 0850	Modern Architecture
HIAA 0860	Contemporary Architecture
3 Seminars, numbered HIAA 1000–HIAA 1931	3
HIAA 1181	Prefabrication and Architecture
HIAA 1201	Brushwork: Chinese Painting in Time
HIAA 1202	Mountains and Waters: Art and Ecology in East Asia
HIAA 1212	The Pictured Text
HIAA 1213	The Bureaucracy of Hell: Envisioning Death in East Asian Art
HIAA 1305	Pre-Columbian Art + Architecture
HIAA 1307	Politics and Spectacle in the Arts of Ancient Rome
HIAA 1308	Arts of Memory in Ancient Rome
HIAA 1620	Arts Between Europe and the World: 1500-1700
HIAA 1720	The Art of Portraiture: Pre-Histories of the Selfie
HIAA 1771	Eclectic Arts in the Global 19th Century
HIAA 1810	Contemporary Art and Activism
HIAA 1811	Possible Futures: Art and the Social Network before the Internet (1950-1979)
HIAA 1820	Abstraction in Theory and Practice
HIAA 1822	Dada and Surrealism: Anarchy, Exile, Alterity
HIAA 1850G	Contemporary American Urbanism: City Design and Planning, 1945-2000
HIAA 1850H	Berlin: Architecture, Politics and Memory
HIAA 1880	Criticality and Modern Art
HIAA 1888	Exhibition as Medium
HIAA 1890G	Contemporary Art of Africa and the Diaspora
HIAA 1900	Museum Interpretation Practices
HIAA 1910A	Providence Architecture
HIAA 1930	The History and Methods of Art Historical Interpretation
HIAA 1931	Museums, Histories, Critiques
1 Elective: This can include courses taught in the department, cross-listed courses from other departments, or courses in other departments approved by the concentration advisor.	1

1 Capstone course. Capstone projects are required for all concentrators. The Capstone is intended to challenge you with an opportunity to synthesize at a high level of achievement the knowledge and understanding you have gained by concentrating in the History of Art and Architecture. Capstone projects embrace many possibilities. You can perfect a seminar paper in which you have developed a strong interest. You can participate in a graduate seminar to which the instructor has admitted you. You can develop work that you do as a museum or gallery intern. You might work on an archaeological excavation. You can participate in the Honors Program. Beyond these opportunities, the Department is open to other approaches. Capstones are often completed under the auspices of an independent study course. But a capstone may be completed under the umbrella of an existing course. All capstone's must be discussed with and approved by a faculty sponsor and your concentration advisor.

Total Credits

10

¹ A maximum of four credits may be allowed for courses taken at other universities (transfer credits or from study abroad) or courses on art historical subjects taken in other departments. No concentration credit will be granted for AP/IB/A-level scores.

Self-Assessment

All concentrators are required to write an essay when they file for the concentration that lays out what they expect to gain from the course of study they propose. All second-semester seniors will be required to write a final essay that takes measure of what they have learned from the concentration, including their capstone and other experiences relating to their study of the history of art and architecture. The self-assessment should be submitted through ASK with a revised list of courses actually taken at least one month prior to graduation.

Honors

During the second semester of the junior year all concentrators will be invited to apply for admission to the Honors Program in History of Art and Architecture. The honors program is an opportunity for concentrators to mobilize what they have learned to make an original research contribution to the field.

Students wishing to write an honors thesis should have produced consistently excellent work and maintained a high level of achievement (i.e. a majority of "A" or "S with distinction" grades) in all concentration courses. It is advisable for them to have taken at least one seminar in the department and written a research paper before choosing to undertake a thesis. Acceptance into the Honors program depends on the persuasiveness of the thesis topic and the availability of relevant faculty to advise the thesis. No honors student may take more than four courses either semester of their senior year—with the honors seminar being considered one of the four courses. Students interested in honors who are expecting to graduate in the middle of the year should contact the concentration advisor no later than the beginning of their junior year.

During both fall and spring semesters you will participate in the monthly meetings of the Honors cohort, in which honors students in both HIAA concentrations share their work-in-progress with each other and with the faculty member who supervises the seminar. These monthly meetings, usually three per semester, are mandatory. Students must enroll in HIAA 1990 (Honors Thesis) in both semesters. Students are also expected to meet separately and regularly with their own thesis advisor.

Finished drafts of the thesis, which will generally be no more than 30–35 pages in length (exceptions to be determined in consultation with the instructor), not counting bibliography and visual materials, will be due to the advisor and second reader by March 1 of the Spring semester or by November 1 of the Fall semester if you plan on graduating in December. Comments will be returned to the students for final corrections at that point. There will be a public presentation of Honors work at the end of the Spring semester.

1 Independent Concentration

The Independent Concentration program is for students interested in actively constructing an interdisciplinary concentration, representing a coherent field of study that Brown does not offer and that cannot be studied cohesively within a standard concentration. Such fields may include emerging areas of study in the academy, such as "Disability Studies" or "Educational Neuroscience," and broader interdisciplinary areas, such as "Aesthetics," "Geography," or "Migration Studies." The proposal process consists of the following steps: (1) Meeting with the Curricular Resource Center's IC Peer Coordinators or IC Dean (<https://www.brown.edu/academics/college/advising/curricular-resource-center/brown.edu/go/ic/>); (2) Completing a draft IC Application (<https://www.brown.edu/academics/college/advising/curricular-resource-center/independent-concentrations/ic-proposal-submission/ic-proposal/>) and soliciting feedback from the Peer Coordinators; (3) Identifying an approved Faculty Sponsor (an advisor) and obtaining a letter of support; and (4) Submitting the application and letter of support by one of the six deadlines during the academic year. Independent Concentration proposals are reviewed and approved by the College Curriculum Council.

Once approved, all independent concentrators receive dedicated advising support from their IC Faculty Advisor and the IC Dean. Independent Concentrators must complete a senior capstone. Students interested in pursuing honors should read the IC Honors Thesis Guidelines (<https://www.brown.edu/academics/college/advising/curricular-resource-center/independent-concentrations/independent-concentrations/resources-current-icers/>).

Independent concentration proposals are reviewed and approved by the College Curriculum Council.

Once approved, all independent concentrators receive dedicated advising support from their IC Faculty Advisor and the IC Dean. Independent Concentrators must complete a senior capstone. Students interested in pursuing honors should read the IC Honors Thesis Guidelines (<https://crc.brown.edu/curricular-options/independent-concentrations/find-resources-current-icers/>).

International and Public Affairs

The concentration in International and Public Affairs equips students with the knowledge and skills necessary to be engaged global citizens. This concentration offers three tracks: Development, Policy & Governance, and Security. All students take a common core of five classes, beginning with a choice of thematic gateway lecture courses (ideally taken during freshman or sophomore year), and then building through a required junior seminar and a required senior seminar (eligible students may choose to write an honor's thesis to satisfy the senior seminar requirement). All students choose one of three tracks of substantive specialization: Development, in which students explore issues of human development in local and global contexts, and across both the developing world and advanced industrial settings; Security, which allows students to explore issues of security in both local and global contexts; and Policy and Governance, in which students explore the design, implementation, and evaluation of public policies to resolve societal challenges, as well as the governing structures that yield those policies. The concentration is committed to engaging students in the classroom, enabling research opportunities with faculty and in the field, and supporting experiential learning opportunities. Advisors' office hours and an online appointment scheduler are available here (<https://watson.brown.edu/iapa/advising/>).

Concentration Requirements

The concentration comprises 11 courses (12 for an honors degree). Students take a Gateway course, which introduces them to multidisciplinary perspectives on social challenges that cut across global regions. The Foundational course introduces students to central themes and texts in the three IAPA tracks: Development, Policy and Governance, and Security. Gateway and Track Foundational courses are not interchangeable or substitutable with courses offered in other concentrations. They should both be taken in the first or second year.

Once a student has chosen a track, they take five electives, selected from a pre-approved list for each track on our website. Approval of track elective courses not on the pre-approved list is permitted only in extenuating circumstances. Note that that list of electives is subject to change. We encourage students to cluster two or three of these electives around a region, theme, or social problem to create coherence in their plan of study and prepare for future work.

Students also take courses in qualitative and quantitative methods (a high-level course in language instruction can substitute for one of the two methods courses).

All International and Public Affairs concentrators take a junior seminar (1700 level) during the fall or spring semester of the junior year. The seminars, which are not track specific, focus on issues in international and public affairs that can be studied in comparative perspective, that can be subjected to multidisciplinary analysis, and that often cut across concerns about development, policy and governance, and security. The seminars are designed to help students hone skills of critical thinking, argumentation, and the design and operation of social science research and scholarship. Junior seminar students write papers on topics that can later be pursued as capstone or thesis projects. Junior seminars are not interchangeable or substitutable with courses in other concentrations. Junior seminars are typically WRIT-designated.

All International and Public Affairs concentrators complete a capstone course during their senior year. Designated IAPA Senior Seminars (1800 level) require students to write a research paper or extended policy brief that draws on analytic expertise, thematic expertise, regional expertise, and foreign language skills, if applicable. The capstone research project is typically about 20-25 pages in length. Senior capstone seminars are not interchangeable or substitutable with courses offered in other concentrations. Senior seminars are typically WRIT-designated. Eligible seniors may choose to write a two-semester honors thesis to satisfy the senior capstone requirement.

Honors

Students who demonstrate exceptional academic performance and scholarly achievement in the International and Public Affairs concentration have the opportunity to be recommended for graduation with honors. Students submit applications to the Honors Program (<https://home.watson.brown.edu/iapa/honors/>) in the spring semester of their junior year. Students who are graduating in December can apply for the honors program in the spring semester (their 5th) to complete their thesis in the 7th semester with the spring cohort.

To apply, students must meet IAPA honors course and GPA prerequisites and turn in a well-developed social science research question, method, and bibliography along with a plan for completing the thesis by April of senior year. They must also have secured signatures of a primary thesis advisor and a second reader. Only those students with an approved thesis application will be permitted to enter the senior thesis seminar in the fall and /or receive thesis grant funding for the summer.

Concentration Requirements Summary

Gateway Course	1
IAPA 0210	Life and Politics on the US-Mexico Border
IAPA 0300	Costs of War
IAPA 0400	Fiscal Plumbing 101: The American Tax State in Comparative and Historical Perspective
IAPA 0900	How We Compete: The Race for Industrial Supremacy Over Time and Place
ECON 1000	Using Big Data to Solve Economic and Social Problems
POLS 1020	Politics of the Illicit Global Economy
SOC 1490	Power, Knowledge and Justice in Global Social Change
Track Foundational	1
IAPA 1001	Foundations of Development
IAPA 1002	Foundations of Policy and Governance
IAPA 1003	Foundations of Security

Track Electives (See tables below)	5
Qualitative Research Methods ¹	1
IAPA 1500A	Ethnographic Research Methods
SOC 1020	Methods of Social Research
Quantitative Research Methods ²	1
ECON 1620	Introduction to Econometrics
IAPA 1502	What Works: Evaluating the Impact of Social Programs
POLS 1600	Political Research Methods
SOC 1100	Introductory Statistics for Social Research
Junior Seminar ³	
IAPA 1700P	Displaced: How Global Systems Shape Refugee Families
IAPA 1700R	Inequality, Policy, and Economics
IAPA 1700S	Survey of Time: Temporality, Social Theory, and Difference
IAPA 1701M	Justice, Gender, and Markets
IAPA 1701N	Diplomacy, an Art That Isn't Lost
IAPA 1701V	Democratization
IAPA 1701W	The Cold War in Latin America
IAPA 1701X	American Education Policy in Historical and Comparative Perspective
IAPA 1701Y	Climate Change, Power, & Money
IAPA 1701Z	Animals and War
IAPA 1702D	Beyond Refugeehood: Politics of mobility, border regimes, and humanitarianism
IAPA 1702H	The Politics of Industrial Transformation
IAPA 1702I	Governance from Socialist to Post-socialist China
Senior Capstone ⁴	
IAPA 1800D	Law and Public Policy
IAPA 1801D	Politics & Journalism: A Practical Guide to How We Got Here and Where We're Going
IAPA 1801F	Prison Abolition as Policy
IAPA 1802M	Rwanda Past and Present
IAPA 1803	Humanitarian Response in Modern Conflict
IAPA 1804	Diplomacy, Crisis, War in the Modern Era
IAPA 1804A	Iran and the Islamic Revolution
IAPA 1804D	Legal Methods for Public Policy
IAPA 1804M	Overcoming Threats to Human Security
IAPA 1810	Democratization and Autocratization
IAPA 1811	Contemporary Digital Policy and Politics
IAPA 1821P	Political Psychology of International Relations
IAPA 1816A	Senior Honors Seminar
IAPA 1817A	Senior Honors Thesis
Total Credits	11

¹ A comparable course from an outside department (including ANTH 1236, ANTH 1940, BIOL 1575, EDUC 1240, SOC 1117, SOC 1260, SOC 1340) may also be used.

² A comparable course from an outside department including (APMA 1650, CLPS 0900, CSCI 0300, CSCI 0111, ECON 1620, EDUC 1110, EDUC 1230) may also be used.

³ Other 1700-level approved IAPA courses may also fulfill the Junior Seminar requirement

⁴ Other 1800-level approved IAPA courses may also fulfill the Senior Seminar requirement. Students pursuing honors are required to take the IAPA Honors Seminar (IAPA 1816A or IAPA 1850) in the fall and a directed reading independent study with their primary thesis reader in the spring.

Track Specialization and Electives

IAPA students must take the track foundational course associated with their track specialization (Development, Security, or Policy & Governance).

Track foundational courses are not interchangeable or substitutable with courses offered in other concentrations. Students select 5 elective courses from the list of pre-approved electives consistent with their track specialization. Approval of track elective courses not on the pre-approved list is permitted only in extenuating circumstances. Note - the list of electives is subject to change.

Examples of track electives include the following: (Note that a full list is available on the IAPA website (<https://home.watson.brown.edu/iapa/requirements/track-electives/>)).

DEVELOPMENT TRACK

ANTH 1150	Middle East in Anthropological Perspective
ANTH 1301	Anthropology of Homelessness
ECON 1500	Current Global Macroeconomic Challenges
ECON 1560	Economic Growth
ENVS 1554	Farm Planet: Hunger, Development, and the Future of Food and Agriculture
HIST 1267	The Global British Empire, 1600-The Present
IAPA 1401	Economic Development in Latin America
IAPA 1402	Beyond Sun, Sea and Sand: Exploring the Contemporary Caribbean
JUDS 1711	History of the State of Israel: 1948 to the Present
PHP 1460	Public Health in a Changing World: Law, Policy & Justice
POLS 1290	The Rise of China
POLS 1440	Security, Governance and Development in Africa
SOC 1270	Race, Class, and Ethnicity in the Modern World
URBN 1871G	Urban Asia: Beyond Tradition, Modernity, and Crisis

SECURITY TRACK

CSCI 1800	Cybersecurity and International Relations
ECON 1340	Economics of Global Warming
HIST 1080	Humanitarianism and Conflict in Africa
IAPA 1201B	Victory, Defeat, and Everything In-Between: History, Strategy, and Politics
IAPA 1203	History of American Intervention
POLS 1225	Nuclear Weapons
POLS 1500	The International Law and Politics of Human Rights
POLS 1822I	Geopolitics of Oil and Energy
SOC 1128	Migrants, Refugees and the Mediterranean
UNIV 1001	The Israeli-Palestinian Conflict: Contested Narratives

POLICY & GOVERNANCE TRACK

AFRI 1170	African American Women's History
ANTH 1300	Anthropology of Addictions and Recovery
CSCI 1850	Deep Learning in Genomics
ECON 1385	Intergenerational Poverty in America
ECON 1570	The Economics of Latin Americans
IAPA 1201B	Victory, Defeat, and Everything In-Between: History, Strategy, and Politics
ENVS 1400	Sustainable Design in the Built Environment

HIST 1121	The Modern Chinese Nation: An Idea and Its Limits
HIST 1531	Movement Politics in Modern America
PHP 1450	COVID-19, Public Health, and Health Policy
PHP 1681	Reproductive Health, Rights and Justice
POLS 1090	Polarized Politics
POLS 1280	Politics, Economy and Society in India
SOC 1116	Criminal Courts and the Law in an Era of Mass Incarceration
URBN 1250	The Political Foundations of the City

Italian Studies

Inherently interdisciplinary, the Italian Studies concentration allows students to strengthen their language skills in Italian and deepen their knowledge of Italian literature, history, art, and culture. Most concentrators have some background in Italian language. However, it is possible to concentrate in Italian studies without having studied the language before coming to Brown, although doing so requires an early start. After fulfilling the language requirement by completing up to Italian 0600 (or the equivalent), students enroll in a variety of advanced courses, reflecting the interdisciplinary nature of the concentration. Junior concentrators often study abroad in the Brown Program in Bologna. All senior concentrators participate in the "senior conference" by delivering brief presentations on academic topics of their choice in Italian Studies. Concentrators might also pursue capstone research, writing, or multimedia projects.

The concentration requires that students demonstrate proficiency in the Italian language by completing up to ITAL 0600 (or the equivalent in Bologna). ITAL 0400 is the first language course that counts toward the ten required courses for the concentration (except for students who place out of ITAL 0400, who will need to complete a total of nine courses). At least four of the ten courses should be taken in Italian.

ITALIAN STUDIES COURSES

ITAL 0550	Gold, Wool and Stone: Painters and Bankers in Renaissance Tuscany (HIAA 0550)
ITAL 0560	Constructing the Eternal City: Popes and Pilgrims in Renaissance Rome (HIAA 0560)
ITAL 0600	Advanced Italian II
ITAL 0750	Truth on Trial: Justice in Italy
ITAL 0751	When Leaders Lie: Machiavelli in International Context
ITAL 0950	Introduction to Italian Cinema: Italian Film and History
ITAL 0951	The Grand Tour, or a Room with a View: Italy and the Imagination of Others
ITAL 0975	Let's Eat, Italy: Italian History and Culture through Food
ITAL 0981	When Leaders Lie: Machiavelli in International Context
ITAL 0985	Visions of War: Representing Italian Modern Conflicts
ITAL 1000A	Luigi Pirandello: Masks and Society
ITAL 1000B	Reading Recent Italian Fiction
ITAL 1000C	Nord - Sud e Identità Italiana
ITAL 1000D	Italian National Identity: Criticisms and Crises
ITAL 1000E	Masterpieces of Italian Cinema - Capolavori del cinema italiano
ITAL 1000F	20th Century Italian Poetry
ITAL 1000G	Italian Identity
ITAL 1000H	Resounding Cinema

ITAL 1010	Dante in English Translation: Dante's World and the Invention of Modernity
ITAL 1020	Boccaccio's Decameron
ITAL 1029	World Cinema in a Global Context
ITAL 1030A	Fellini
ITAL 1310	Literature of the Middle Ages
ITAL 1320	Great Authors and Works of Italian Renaissance: Ariosto's Orlando furioso
ITAL 1340	The Panorama and 19th-Century Visual Culture
ITAL 1350A	Transmedia Storytelling and the New Italian Epic.
ITAL 1350B	Non Fiction
ITAL 1360	Renaissance Italy
ITAL 1380	Italy: From Renaissance to Enlightenment
ITAL 1390	Modern Italy
ITAL 1400A	"Italian (Mediterranean) Orientalisms" Major Italian Writers and Filmmakers
ITAL 1400B	Fascism and Antifascism: Culture and Literature between the Two World Wars
ITAL 1400C	Literature and Adolescence
ITAL 1400D	Photography and Literature: Italian Examples of an Uncanny Relationship
ITAL 1400F	Twentieth Century Italian Culture
ITAL 1400H	Early Modern Italy
ITAL 1400I	Rituals, Myths and Symbols
ITAL 1400J	The Many Faces of Casanova
ITAL 1400K	Italy as Other
ITAL 1400L	History of Masculinity and Femininity from the Unification to 1968
ITAL 1400M	Giorgio Agamben and Radical Italian Theory
ITAL 1400P	The Southern Question and the Colonial Mediterranean
ITAL 1400Q	From Neorealism to Reality TV
ITAL 1420	Sex and the Cities: Venice, Florence, and Rome, 1450-1800
ITAL 1430	Popular Culture, 1400 - 1800
ITAL 1431	Truth on Trial: Justice in Italy, 1400-1800 (HIST 1262M)
ITAL 1550	Italian Representations of the Holocaust
ITAL 1550B	Topics in the Early History of Printmaking: Festival and Carnival (HIAA 1550B)
ITAL 1560A	Italy and the Mediterranean (HIAA 1560A)
ITAL 1580	Word, Image and Power in Early Modern Italy
ITAL 1590	Word, Media, Power in Modern Italy
ITAL 1610	The Divina Commedia: Inferno and Purgatorio
ITAL 1620	The Divina Commedia: Dante's Paradiso: Justifying a Cosmos
ITAL 1920	Independent Study Project (Undergraduate)
ITAL 1990	Senior Conference
ITAL 2100	Introduction to Italian Studies
ITAL 2190B	Fascism and Antifascism: Culture and Literature between the Two World Wars
ITAL 2190G	Letteratura Italiana del Novecento
ITAL 2220	New Perspectives on Fascism
COURSES IN OTHER DEPARTMENTS	
HIAA 0340	Roman Art and Architecture: From Julius Caesar to Hadrian

HIAA 0550	Painters, Builders, and Bankers in Early Modern Italy
HIAA 0560	Constructing the Eternal City: Popes and Pilgrims in Early Modern Rome
HIAA 1200D	Pompeii
HIAA 1301	The Palaces of Ancient Rome
HIAA 1302	Women and Families in the Ancient Mediterranean
HIAA 1303	Pompeii: Art, Architecture, and Archaeology in the Lost City
HIAA 1550B	Topics in the Early History of Printmaking: Festival and Carnival
HIAA 1560A	Italy and the Mediterranean
HIAA 1560C	Renaissance Venice and the Veneto
HIAA 1560D	Siena from Simone Martini to Beccafumi
HIAA 1560F	Topics in Italian Visual Culture: The Visible City, 1400- 1800
HIAA 1600C	Italian Baroque Painting and Sculpture
ARCH 1155	Cities, Colonies and Global Networks in the Western Mediterranean
MUSC 0071	Opera

Italian Studies Concentration and the Brown Program in Bologna

Concentrators who enroll in the Brown in Bologna program should fulfill the requirements according to the following sequence: prior to departure, the student should complete the level of Italian language study required (ITAL 0300) and enroll in one of the courses in the four distribution areas -- Italian literature; Italian History; history of Italian art and architecture; film or performance. Upon return from Bologna, the student should enroll in at least one advanced course offered by the department, preferably a course taught in Italian. Any student returning from the Bologna program must enroll in a course above the language level of ITAL 0600.

Credits toward the Italian Studies concentration may also be transferred from the Brown in Bologna Program. Concentrators may count three courses per semester toward the concentration (or six courses total for the year), although the course content must focus on Italy if the student wishes to count the course toward the concentration requirements. Concentrators should consult the concentration advisor to know which courses may or may not transfer as credits toward the concentration.

Honors in Italian Studies

Concentrators are encouraged to expand their understanding of Italian language, history, or culture through independent research that will result in a thesis, a translation, or a multimedia project, developed in consultation with the undergraduate concentration advisor and the individual faculty member who will advise the student's project. The Honors thesis in Italian Studies is a two-semester thesis. Students who intend to complete an honors project should enroll for the first semester in ITAL 1920 (Independent Study), and have their project approved by their advisor by October 15. During the second semester, honors students enroll in ITAL 1990 and continue to work with their advisor to complete the project. ITAL 1990 does not count as one of the eight courses required for the concentration.

Capstone Experiences in Italian Studies

A Capstone experiences in Italian Studies would consist of a course or project that a student, in consultation with the undergraduate advisor, feels would integrate the various intellectual engagements of this interdisciplinary concentration, and constitute a culminating experience in Italian Studies at Brown. Such experiences are strongly encouraged, and should be arrived at through conversations with the concentration advisor or a professor in the department. This could include the Brown Program in Bologna, typically taken in the Junior year, and/or the honors thesis in the senior year. However, students may also apply early in the Fall or Spring semester of their senior year for permission to designate one of their courses (1000-level or above) a Capstone course. In consultation

with the professor, students in Capstone courses complete an independent research, writing, or multimedia project that is well beyond the required assignment for the course. ITAL 1920 (Independent Study) may also be designated a Capstone course with the permission of the instructor.

Judaic Studies

Jews have lived and flourished over thousands of years in a variety of social contexts, stretching from the Land of Israel and the eastern Mediterranean to Asia, Africa, Europe, and the Americas. Concentrators will have the opportunity to study Jews in these contexts, getting to know their social structures, and what they have created. The subjects of study cover an astonishing range, including history and society, Jewish law and philosophy, and Jewish literature and ritual. Students will learn to unlock this wealth in both the ancient and the modern worlds through a number of academic disciplines - History, Religious Studies, and Literature. These also provide tools for studying and analyzing human societies and cultures in general, for which Jewish experiences provide an important perspective.

Program in Judaic Studies

Required Coursework

A concentration in Judaic Studies includes the following requirements:

1. All students are required to take a total of 10 courses that count toward the concentration.
2. All students must take one full year of modern Hebrew (two of the 10 required courses for the concentration) or fulfill the Hebrew requirement through examination. Usually, the Hebrew requirement is fulfilled by taking HEBR 0100 and HEBR 0200. Fulfillment of the Hebrew requirement through examination does not reduce the total number of 10 courses required for the concentration.
3. Students choosing to continue with Hebrew language study may count up to two additional Hebrew courses (HEBR 0300, HEBR 0400, or HEBR 0500) toward fulfillment of the concentration requirements. HEBR 0600 is counted as a regular, non-language course for the purposes of fulfilling concentration requirements.
4. Of the courses required for a concentration in Judaic Studies, students must fulfill both a historical and a methodological breadth requirement. For example, students primarily studying ancient Judaism must enroll in at least one course in medieval or modern Judaism, and students studying primarily modern Judaism must enroll in at least one class focusing on the ancient or medieval period. In addition, at least one course should offer training in a discipline different from the student's primary disciplinary interest (e.g., a student whose main interest is Jewish history will take at least one course in Jewish thought, literature or religion). These two breadth requirements ensure that the student gains a broader perspective on Judaic Studies as an interdisciplinary/multidisciplinary field of study concerned with Jews and Judaism over three millennia of history.
5. Subject to the approval of the concentration adviser, up to two courses outside of Judaic Studies that relate directly to the concentration may be counted toward the concentration (e.g., a course on a particular historical context, in a particular discipline, or on a relevant topic, including courses taken abroad that are approved by Brown for transfer credit).
6. After consultation with the concentration adviser, each senior concentrator who is not writing a senior thesis in Judaic Studies to fulfill the capstone requirement will designate an advanced course (1000 level) in Judaic Studies as that student's capstone course. Alternatively, seniors may choose to do an independent study with a Judaic Studies faculty member that will function as the capstone course. Within the context of the capstone course, the student will conduct independent research and write a substantial paper of 20-25 pages on a topic in Judaic Studies that displays in an appropriate way the theoretical and methodological approaches, as well as the interpretive issues, most of interest to the student, thereby engaging the student's particular disciplinary focus/foci in a serious and substantive way. The student, in consultation with the capstone instructor, will complete the capstone form by the end of the second week of classes of the semester during which the capstone will be undertaken and submit the form to the concentration adviser for final approval. The form includes questions about the capstone course, the topic of the paper, the disciplinary approach(es) the student intends to utilize, and how the paper will fulfill the goals of the capstone. The capstone is an opportunity for students to hone their writing skills, to enhance their ability to undertake independent research, to learn more about and experience Judaic Studies as an interdisciplinary/multidisciplinary field, to make well-considered choices with regard to the topic or problem to be examined and the disciplinary approach(es) to be utilized, and to make use of language skills where appropriate.
7. Double concentrators may count up to two courses that deal with Jewish history, society, culture or religion that they have used to complete the requirements of their other concentration toward their Judaic Studies concentration.
8. Each student who opts to write a senior thesis to fulfill the capstone requirement will approach a potential thesis adviser in Judaic Studies before the end of the second semester of the junior year and secure that faculty member's agreement to advise the thesis. The thesis will be written over two semesters during the senior year and constitute two of the 10 required courses for the concentration. By the end of the second week of classes of the senior year, the student will present the concentration adviser with a succinct thesis plan approved by the thesis adviser. The second reader of each thesis will be chosen by the concentrator in consultation with the thesis adviser before the end of September of the senior year. Once the second reader has agreed to participate, the second reader will read a draft of each chapter of the thesis and provide feedback after it has been approved by the thesis adviser. In no case will the second reader be invited to participate after the thesis has been completed.
9. Study Abroad or Elsewhere in the US: Students who study at other institutions, either in the United States or abroad, may apply up to two topical courses (non-language study) toward completion of the concentration's requirements as long as Brown approves the courses for transfer credit. These approved courses will count as the two courses taken outside Judaic Studies. Students who study in Israel are required to enroll in a one month Summer/Winter Ulpan (a Hebrew language and cultural immersion course) prior to the beginning of the semester as well as a Hebrew language course during their semester in Israel. Students will receive one transfer credit toward the concentration for both of these language courses combined. Students whose level of proficiency allows them to enroll in a university course conducted in Hebrew are exempt from the Ulpan requirement.

Student Goals

Students in this concentration will:

- Have an opportunity to explore aspects of the history, culture, literature, religion, politics, thought and societies of the Jews from ancient times to the present
- Acquire at minimum an elementary proficiency in Hebrew
- Complete a capstone course or honors thesis
- Have an opportunity to explore some of the ways in which more than one discipline contributes to the study of Jews and Judaism through time and space
- Have an opportunity to learn about the often complex dynamics characteristic of the interactions of Jews with others in their larger environment as well as the reciprocal influences of Jewish and non-Jewish cultures.

Further Information

Students who are interested in further information about the concentration should contact the Judaic Studies Office at 163 George Street to make an appointment with the undergraduate concentration advisor. [Tel: 401.863.3910] or Judaic@brown.edu.

Latin American and Caribbean Studies

The concentration in Latin American and Caribbean Studies (LACA) leads to a strong, interdisciplinary understanding of culture, history, and contemporary issues in Latin America, the Caribbean, and the Latinx diaspora.

Requirements are intentionally broad and flexible to accommodate the focused interests of students in understanding the diverse reality of this region. Concentration requirements include four themes: language, area studies, research, and internship or service work. A wide selection of courses from departments across the University expose students to the methods and materials of different disciplines and provide a background in the contemporary and historical contours of Latin American, Caribbean, and Latinx societies. For more information, contact the Director of Undergraduate Studies, Professor Erica Durante (erica_durante@brown.edu?subject=LACA%20concentration).

Concentration Requirements

1. Ten courses on Latin American, Caribbean, and/or Latinx subjects.

These may be explicitly designated as LACA classes, but do not need to be. Up to two of these courses can be language learning classes. Relevant courses from study abroad may count toward this total. For double concentrators, up to two classes can count toward the course requirements of both LACA and another concentration. At least two different academic disciplines should be represented in the ten courses. Courses in which the student did substantial work on a Latin American, Caribbean, or Latinx subject may count toward this total, even if the course as a whole has a more general subject matter. Concentrators should periodically update their courses on ASK and confirm with the Director of Undergraduate Studies that they are on track to meeting the coursework requirement.

The courses must include at least one survey course providing a comprehensive and comparative view of the region. Examples include the following:

LACA 0500	Around Latin America in 80 Days: An Historical and Cultural Journey
LACA 1504G	Arts of the Environment in the Americas
LACA 1510I	Urban Latin America
LACA 1630	Engaged Humanities: Storytelling in the Americas
HISP 0730	Encounters: Latin America in Its Literature and Culture
HISP 1330Z	Tropical Fictions: Geography and Literature in Latin American Culture
HIST 0234	Modern Latin America
HIST 1966Q	Colonial Encounters and the Creation of Latin America
POLS 1210	Latin American Politics
POBS 0280	Mapping Food, Eating Meaning, Making Community: A Welcome to the Lusophone world

2. Competence in a Latin American and/or Caribbean language.

Competence in Spanish, Portuguese, French, Haitian Kreyol, Kaqchikel Maya, etc. may be demonstrated through a departmental test, AP credit, language courses at Brown or elsewhere, study abroad, etc; please contact the concentration advisor to confirm. (If the student's primary area of study is the Anglophone Caribbean, a field language is not necessary.)

3. An internship or volunteer service, located in the U.S. or overseas, for one semester or one summer. Work completed during study abroad may count toward this requirement. The service work will connect theory to practice, applying scholarly knowledge to social challenges. Students are encouraged to consult with the Swearer Center for Public Service for assistance finding a volunteer placement. Students should also meet with the DUS by the beginning of junior year to discuss their work plan for their service component. Upon completion of the internship or service work, students fill and submit via ASK the Internship, Work or Volunteer Service Form, available online in the LACA Undergraduate Concentration webpage (<https://watson.brown.edu/clacs/education/undergraduate>) (<https://watson.brown.edu/clacs/education/undergraduate/>). In addition they are expected to submit via ASK a short letter from a supervisor confirming the completion of the work.

4. A capstone project. This may be a senior honors thesis or creative project, supervised by a primary advisor and a secondary reader; a non-

honors research paper; or a reflective paper about non-academic work (such as service or foreign study) related to Latin America, the Caribbean or the Latinx experience.

The project may be completed for honors if the student is eligible (see Honors, below).

All concentrators are required to enroll in LACA 1900 during their junior or senior year to complete their Capstone project requirement (capstone project or honors thesis). In addition to this course, students may also elect to enroll in one or two semesters of independent study (LACA 1990, LACA 1991) with their thesis/project advisor. All Honors Candidates are expected to attend the Annual Concentration Research Day and to give a 10-minute oral presentation of their honors thesis project followed by a short Q&A.

Writing Requirement

To satisfy Brown's writing requirement as a LACA concentrator (which must be completed by the end of the 7th semester), students are encouraged to consider courses that have an emphasis on revision and feedback such as the following:

LACA 1900	Preparation for Honors and Capstone Projects on Latin American and Caribbean Topics
ETHN 1200D	Latinx Literature
LACA 0500	Around Latin America in 80 Days: An Historical and Cultural Journey
LACA 1504G	Arts of the Environment in the Americas
LACA 1630	Engaged Humanities: Storytelling in the Americas
COLT 0710I	New Worlds: Reading Spaces and Places in Colonial Latin America
HISP 0730	Encounters: Latin America in Its Literature and Culture
HIST 0233	Colonial Latin America
HIST 1977I	Gender, Race, and Medicine in the Americas

Engaged Scholars Program

The concentration also allows students to pursue the Engaged Scholars Program (<http://watson.brown.edu/clacs/node/654/>). The Engaged Scholars Program (ESP) in Latin American and Caribbean Studies (LACA) is designed for LACA concentrators who are especially interested in making deeper connections between their academic work and local communities in Providence and beyond. Engaged Scholars combine hands-on experiences such as internships, public service, humanitarian, and development work with their academic learning in order to develop a deeper understanding of, and appreciation for, social engagement.

Honors

Qualified undergraduates may work towards the A.B. in Latin American and Caribbean Studies with Honors.

Requirements to graduate with Honors:

1. Maintenance of at least an A- average in the ten courses counting for the Latin American and Caribbean Studies concentration
2. Maintenance of at least a B+ average in all course work at Brown
3. Completion of a senior honors thesis or project with a grade of A

Grades of S do not negatively affect the eligibility for honors.

Graduating seniors with Honors in Latin American and Caribbean Studies are eligible for an award administered by the concentration for Outstanding Senior Thesis or Project.

Senior Honors Thesis or Project Timeline:

For Senior-Year Students-

- **By the end of sixth semester:** Students fill and submit a one page proposal to the concentration advisor the Honors Thesis Declaration Form available online in the LACA Undergraduate Concentration webpage (<https://watson.brown.edu/clacs/education/undergraduate>)

- (<https://watson.brown.edu/clacs/education/undergraduate/>). In the form, they are expected to indicate their thesis or project title and short description. The Honors Thesis Declaration Form must be signed by a primary advisor. Students who study abroad spring semester junior year may apply for admission to the Honors Program but must meet the application deadline. Students in this position should start thinking about a proposal and contact advisors well in advance.
- **By January 15:** Students submit the first section of their thesis or project to their research advisor for review. They should agree with their advisor on the schedule for the remaining portions.
 - **By March 15:** A draft of the entire thesis or project is due to the primary advisor and the secondary reader for review and feedback.
 - **By 5 pm EST on April 15:** The final, complete senior honors thesis or project is due.
 - Students submit one copy each to the primary advisor and the secondary reader.
 - Students submit one paper copy and one electronic copy to the concentration advisor and one electronic copy to the Brown Library Digital Repository (BDR).

For Mid-Year Completers:

Mid-year completors must apply for the Honors Program their 6th semester, as 2nd semester Juniors. They undertake the thesis in their 7th and 8th semesters, allowing them to complete the following Honors course sequence:

- **By the end of the 6th semester:** Students fill and submit to the concentration advisor the Honors Thesis Declaration Form available online in the LACA Undergraduate Concentration webpage (<https://watson.brown.edu/clacs/education/undergraduate/>). In the form, they are expected to indicate their thesis or project title and short description. The Honors Thesis Declaration Form must be signed by a primary advisor.
- **By September 15:** Students submit the first section of their thesis or project to their research advisor for review. They should agree with their advisor on the schedule for the remaining portions.
- **By October 15:** A draft of the entire thesis or project is due to the primary advisor and the secondary reader for review and feedback.
- **By 5 pm on November 15:** The final, complete senior honors thesis or project is due.
- Students submit one copy each to the primary advisor and the secondary reader.
- Students submit one paper copy and one electronic copy to the concentration advisor and one electronic copy to the Brown Library Digital Repository (BDR).

Linguistics

Language is a uniquely human capacity that enables us to communicate a limitless set of messages on any topic. While human languages can differ greatly in certain respects, all are intricate, complex, rule-governed systems. Linguistics is the scientific study of these systems, their use for communication in rich social settings, and their cognitive underpinnings. The linguistics concentration at Brown gives students a background in the “core” aspects of the language system: phonetics/phonology (the study of speech sounds and their patterning), syntax (the study of combinatorics of words, phrases, and sentences), semantics/pragmatics (the study of the meanings of both words and larger expressions, and how they interact with communicative goals), and how language is produced, understood, and learned by children and adults (psycholinguistics). Beyond this, students may focus more heavily in one or more of these areas and/or explore related questions such as how core aspects of language do (and do not) vary, including through the use linguistic fieldwork on understudied languages, or how probabilistic tendencies and variability in language usage relate to grammar. Other areas such as historical linguistics, computational linguistics, sociolinguistics, philosophy of language, and linguistic anthropology can also be pursued in conjunction with offerings in other departments.

Students who wish to pursue one or more aspects of Linguistics in greater depth than does the Bachelor of Arts, and to focus on some of

the more technical, computational, and/or experimental areas of the field may choose to take a Bachelor of Science in Linguistics. Students will choose a focus pathway which will direct their choices. Pathways include: Language, Computation, and Information; Language, Mind, and Brain; Meaning and Logic, or one of the student’s design, with approval from the concentration advisor.

A.B. Requirements (10 courses)

The core requirements are:

One gateway course:

- LING 0100 (Introduction to Linguistics)

Four breadth requirements:

- Phonology (LING 1200) or Phonetics (CLPS 1311)
- Syntax (LING 1310) or Linguistics Variation and Universals (LING 1311).
- Lexical Semantics (LING 1410), Compositional Semantics (LING 1440), or Pragmatics (LING 1412)
- Language variation (at the individual, community, or cross-linguistic level; see examples below)

Five additional appropriate electives forming a thematically related set (to be determined in consultation with the Concentration Advisor):

- At least one of these must be drawn from the list of advanced and methods courses listed below. No more than 2 of these courses may be drawn from below 1000 level courses. Every linguistics course offered by the Linguistics Program counts. Electives may also be drawn from courses in other departments and programs in consultation with the Concentration Advisor.

Gateway Course		1
LING 0100	Introduction to Linguistics	
Phonetics/Phonology Courses		1
LING 1200	Phonology	
CLPS 1311	Phonetics	
Syntax Courses		1
LING 1310	Introduction to Syntax	
LING 1311	Linguistic Variation and Universals	
Semantics/Pragmatics Courses		1
LING 1410	Lexical Semantics	
LING 1440	Compositional Semantics	
LING 1412	Pragmatics	
Linguistic Variation Courses		1
CLPS 1393	Sociolinguistics	
CLPS 0340	Language and Gender	
CLPS 0530	Making Visual Illusions	
LING 1311	Linguistic Variation and Universals	
CLPS 0800	Language and the Mind	
CLPS 1650	Child Language Acquisition	
CLPS 1660	Learning Compositional Language	
CLPS 1800	Language Processing	
CLPS 1850	Language Processing in Humans and Machines	
CLPS 1890	Laboratory in Psycholinguistics	

5 additional appropriate electives forming a thematically related set to be determined in consultation with the Concentration Advisor. At least one of these must be drawn from the list of advanced courses listed below, and we strongly recommend that at least one course be an appropriate methods and a topics course. No more than 2 of these courses may be drawn from below 1000 level courses. The electives can be drawn from any of the above courses, or any of the other linguistic/language related courses in the program. Electives may also be drawn from courses in other departments in consultation with the Concentration Advisor; a list of courses which standardly count towards the Linguistics Concentration (provided they form part of the thematically related set) is appended below.

5

CLPS 1650	Child Language Acquisition
SLAV 1300	Sociolinguistics (with Case Studies on the Former USSR and Eastern Europe)

Advanced and Methods Courses

LING 1440	Compositional Semantics
LING 1771	Introduction to Corpus Linguistics
LING 1870	Linguistic Field Methods
CSCI 1460	Computational Linguistics
CLPS 1890	Laboratory in Psycholinguistics

NOTE: This is NOT an exhaustive list of courses that can be applied towards the Linguistics Concentration requirements.

Total Credits

10

Honors (12 courses)

Candidates for Honors in Linguistics must meet all of the requirements above, write an Honors thesis, and take two additional courses. One course is normally LING 19XX (Directed Research in Linguistics) - intended for work on the Honors thesis.

Three of the total 12 courses must be drawn from the advanced list above (the Directed Research course counts as one of the advanced courses).

Refer to the Program in Linguistics webpage for detailed information about the Linguistics Honors program.

Independent Study

Independent study is encouraged for the A.B. degree. Students should sign up for LING 19XX with a faculty advisor who is a member of the Program in Linguistics. Arrangements should be made in Semester 6 for students expecting to do independent study during Semesters 7 and/or 8.

Do Foreign Language Courses Count?

Foreign language courses will generally not count towards the concentration requirements, except those that focus on the structure or history of the language. Students are, however, advised to gain familiarity with a foreign language, and are encouraged to take at least one course which deals with the structure of a language other than English.

ScB Requirements (16 courses)

Students who wish to pursue one or more aspects of Linguistics in greater depth than does the A.B., and to focus on some of the more technical, computational, and/or experimental areas of the field may choose to take an Sc.B in Linguistics. Students will choose a focus pathway which will direct their choices. Three possible pathways are described below in additional detail, though other pathways are possible, if approved by the Concentration Advisor.

The core requirements are:

- One gateway course
- Four breadth requirements, one each in Phonology, Syntax, Semantics or Pragmatics, and Psycholinguistics.
- Three electives in the focus area (see individual pathways below)
- Four non-linguistic focus area electives (see individual pathways below)

- Two breadth requirements that satisfy the Linguistics AB requirement. These could serve as a secondary focus area.
- One Capstone course

Language, Computation, and Information Pathway

Gateway course		1
LING 0100	Introduction to Linguistics	
At least one course in phonetics / phonology, such as:		1
LING 1200	Phonology	
CLPS 1311	Phonetics	
At least one course in syntax, such as:		1
LING 1310	Introduction to Syntax	
LING 1311	Linguistic Variation and Universals	
At least one course in semantics / pragmatics, such as:		1
LING 1410	Lexical Semantics	
LING 1412	Pragmatics	
LING 1440	Compositional Semantics	
At least one course in linguistics variation, such as:		1
LING 1311	Linguistic Variation and Universals	
CLPS 0340	Language and Gender	
CLPS 0530	Making Visual Illusions	
CLPS 1393	Sociolinguistics	
CLPS 0800	Language and the Mind	
CLPS 1650	Child Language Acquisition	
CLPS 1660	Learning Compositional Language	
CLPS 1800	Language Processing	
CLPS 1890	Laboratory in Psycholinguistics	
Three electives specifically in the focus area, such as:		3
LING 1741	Information Theory in Language	
LING 1771	Introduction to Corpus Linguistics	
CSCI 1460	Computational Linguistics	
CLPS 1800	Language Processing	
CLPS 1850	Language Processing in Humans and Machines	
Four non-linguistic focus area electives, such as:		4
APMA 1650	Statistical Inference I	
CSCI 0220	Introduction to Discrete Structures and Probability	
CSCI 1410	Artificial Intelligence	
CSCI 1420	Machine Learning	
CSCI 1951A	Data Science	
PHP 1560	Statistical Programming in R	
MATH 0520	Linear Algebra	
CLPS 0950	Introduction to programming	
CLPS 2908	Multivariate Statistical Techniques	
Three additional electives in Linguistics, preferably outside the main focus area, such as:		3
LING 1311	Linguistic Variation and Universals	
LING 1870	Linguistic Field Methods	
LING 1440	Compositional Semantics	
ANTH 1800	Sociolinguistics, Discourse and Dialogue	
SLAV 1300	Sociolinguistics (with Case Studies on the Former USSR and Eastern Europe)	
CLPS 1660	Learning Compositional Language	
CLPS 1850	Language Processing in Humans and Machines	
Or many other courses		
One independent study / capstone requirement		1
LING 19XX: Directed Research		
Total Credits		16

Language, Mind and Brain Pathway

Gateway course	1
LING 0100 Introduction to Linguistics	
At least one course in phonetics / phonology, such as:	1
LING 1200 Phonology	
CLPS 1311 Phonetics	
At least one course in syntax, such as:	1
LING 1310 Introduction to Syntax	
LING 1311 Linguistic Variation and Universals	
At least one course in semantics / pragmatics, such as:	1
LING 1410 Lexical Semantics	
LING 1412 Pragmatics	
LING 1440 Compositional Semantics	
At least one course in linguistic variations, such as:	1
LING 1311 Linguistic Variation and Universals	
CLPS 1393 Sociolinguistics	
CLPS 0340 Language and Gender	
CLPS 0530 Making Visual Illusions	
CLPS 0800 Language and the Mind	
CLPS 1650 Child Language Acquisition	
CLPS 1660 Learning Compositional Language	
CLPS 1800 Language Processing	
CLPS 1890 Laboratory in Psycholinguistics	
Three electives specifically in the focus area, such as:	3
LING 1310 Introduction to Syntax	
CLPS 0800 Language and the Mind	
CLPS 1385 Topics in Language Acquisition: Language Acquisition and Cognitive Development	
CLPS 1650 Child Language Acquisition	
CLPS 1660 Learning Compositional Language	
CLPS 1800 Language Processing	
CLPS 1850 Language Processing in Humans and Machines	
CLPS 1890 Laboratory in Psycholinguistics	
Four non-linguistic focus area electives, such as:	4
CSCI 1420 Machine Learning	
CSCI 1460 Computational Linguistics	
NEUR 0680 Introduction to Computational Neuroscience	
PHIL 1770 Philosophy of Mind	
CLPS 0200 Human Cognition	
CLPS 0400 Cognitive Neuroscience	
CLPS 0610 Children's Thinking: The Nature of Cognitive Development	
CLPS 0900 Statistical Methods	
CLPS 1492 Computational Cognitive Neuroscience	
CLPS 1610 Cognitive Development	
CLPS 1620 Developmental Cognitive Neuroscience	
CLPS 1900 Research Methods And Design	
Three additional electives in Linguistics, preferably outside the focus area, such as:	3
LING 1311 Linguistic Variation and Universals	
LING 1440 Compositional Semantics	
LING 1870 Linguistic Field Methods	
LING 1771 Introduction to Corpus Linguistics	
ANTH 1800 Sociolinguistics, Discourse and Dialogue	
SLAV 1300 Sociolinguistics (with Case Studies on the Former USSR and Eastern Europe)	
CLPS 1660 Learning Compositional Language	

Or many other courses

One independent study / capstone requirement	1
LING 19XX Directed Research	
Total Credits	16

Meaning and Logic Pathway

Gateway course	1
LING 0100 Introduction to Linguistics	
At least one course in phonetics / phonology, such as:	1
LING 1200 Phonology	
CLPS 1311 Phonetics	
At least one course in syntax, such as:	1
LING 1310 Introduction to Syntax (*INCORRECT)	
LING 1311 Linguistic Variation and Universals	
At least one course in semantics / pragmatics, such as:	1
LING 1410 Lexical Semantics	
LING 1412 Pragmatics	
LING 1440 Compositional Semantics	
At least one course in linguistic variation, such as:	1
LING 1311 Linguistic Variation and Universals	
CLPS 1393 Sociolinguistics	
CLPS 0340 Language and Gender	
CLPS 0530 Making Visual Illusions	
CLPS 0800 Language and the Mind	
CLPS 1650 Child Language Acquisition	
CLPS 1660 Learning Compositional Language	
CLPS 1800 Language Processing	
CLPS 1890 Laboratory in Psycholinguistics	
Three electives specifically in the focus area, such as:	3
LING 1270 Laboratory in Phonetics	
LING 1311 Linguistic Variation and Universals	
LING 1410 Lexical Semantics	
LING 1412 Pragmatics	
LING 1440 Compositional Semantics	
PHIL 0990X Conditionals	
CLPS 1660 Learning Compositional Language	
Four non-linguistics focus area electives, such as:	4
MATH 0750 Introduction to Higher Mathematics	
CSCI 0220 Introduction to Discrete Structures and Probability	
PHIL 0990T Paradox and Infinity	
PHIL 1630 Mathematical Logic	
CLPS 0200 Human Cognition	
CLPS 0610 Children's Thinking: The Nature of Cognitive Development	
CLPS 0700 Social Psychology	
Three additional electives in Linguistics, preferably outside the main focus area, such as:	3
LING 1311 Linguistic Variation and Universals	
LING 1741 Information Theory in Language	
LING 1870 Linguistic Field Methods	
ANTH 1800 Sociolinguistics, Discourse and Dialogue	
SLAV 1300 Sociolinguistics (with Case Studies on the Former USSR and Eastern Europe)	
CLPS 1800 Language Processing	
CLPS 1850 Language Processing in Humans and Machines	
Or many other courses	
One independent study / capstone requirement	1

LING 19XX: Directed Research

Total Credits**16****Honors (17 courses)**

The Honors program requires one additional elective, which will typically be a second LING 19XX Directed Research course during the senior year (thus leading to a full year of Directed Reading or Directed Research). Admission to the honors program requires a majority of A grades in the concentration. The student's work will culminate in an Honors' thesis on an approved topic (learn more about regulations regarding Honors' theses at <https://linguistics.brown.edu/concentrations> (<https://linguistics.brown.edu/concentrations/>)), written under the direction of one or more faculty members, and read by a committee of at least two faculty members (one of whom may be from another department).

NOTE: Please refer to the undergraduate Linguistics concentration site for updates not listed here.

Literary Arts

Brown's Department in Literary Arts provides a home for innovative writers of fiction, poetry, playwriting, screenwriting, literary translation, digital/cross-disciplinary and mixed media. The concentration allows student writers to develop their skills in one or more genres while deepening their understanding of the craft of writing. Many courses in this concentration require a writing sample; students should consult a concentration advisor or the concentration website for strategies on getting into the appropriate course(s).

Candidates for the Bachelor of Arts degree with concentration in Literary Arts will be expected to complete the following course work:

1. At least four writing workshops from among the following series: LITR 0100A, LITR 0100B, LITR 0110A, LITR 0110B, LITR 0110D, LITR 0110E, LITR 0110H the various courses under LITR 0210, LITR 0310/0311, LITR 0610, LITR 1010, LITR 1110, LITR 1150/1151/1152 and LITR 1410. At least two genres must be covered within the four workshops taken. An independent study in literary arts (LITR 1310 and LITR 1510) may count toward the workshop requirement. Other writing-intensive courses may also count, at the discretion of the advisor.
2. Six elective reading and research in literary arts courses, which must include:

- a course in literary theory or the history of literary criticism
- a course that primarily covers readings and research in literary arts created before 1800
- a course that primarily covers readings and research in literary arts created before 1900
- a course that primarily covers readings and research in literary arts created after 1900

These courses, selected in consultation with a concentration advisor, may come from (but are not limited to) the following departments: Africana Studies, American Civilization, Classics, Comparative Literature, East Asian Studies, Egyptology, French Studies, German Studies, Hispanic Studies, Italian Studies, Judaic Studies, Linguistics, Literatures and Cultures in English, Middle East Studies, Modern Culture and Media, Music, Portuguese and Brazilian Studies, Slavic Studies, South Asian Studies, Theatre, Speech and Dance, Visual Arts. With approval from the concentration advisor, courses covering pre-20th century time periods may be distributed in a variant manner, so long as they cover two distinct literary time periods that precede the 20th century

3. Among the ten required courses, at least four must be at the 1000-level or above. At least six classes (workshops and reading/research courses) that shall count toward the concentration must be taken at Brown through the Literary Arts Department; up to one of the six LITR courses may be a course taken in another department but cross-listed by Literary Arts. No more than two of the ten required courses for the concentration may also count toward fulfilling a second concentration.

4. During the senior year, all students must take at least one course within the Literary Arts course offerings (courses with LITR designation by the Registrar, or courses approved by the concentration advisor).

Honors in Creative Writing: Course requirements are the same as those for the regular concentration (four workshops, six elective literature-reading courses), with the following changes and additions: honors candidates must include two 1000-level workshops or independent studies among their courses; and complete a thesis. Students in their seventh semester who are enrolled in or have completed at least one 1000-level workshop (or independent study) may submit honors applications to the Literary Arts Department from the first day of the fall semester to 25 September; and from 1 through 25 February in the spring. Interested students should obtain information from the office of the Literary Arts Department.

Honors in Literary Arts Production: Course requirements are the same as those for the regular concentration (four workshop, six literature-reading courses), with the following changes and additions: honors candidates must include two 1000-level workshops, production courses or related independent studies among their courses; and complete a production capstone project. Students in their seventh semester who are enrolled in or have completed at least one 1000-level workshop, production course or independent study, may submit honors applications to the Literary Arts Department from the first day of the fall semester to 25 September; and from 1 through 25 February in the spring. Interested students should obtain information from the Literary Arts Department.

Materials Engineering

Materials engineers design, create, and manufacture materials which include semiconductors, polymers, ceramics, metal alloys, and composites. Their contributions have led to breakthroughs in many fields including computing, communications, automobiles, energy, aerospace, buildings/infrastructure, and biomedical devices. The Materials Engineering curriculum at Brown provides graduates with both the expertise necessary to practice their profession as well as the interdisciplinary foundation necessary to collaborate with the engineers who will use the materials that they develop. A substantial fraction of Materials Engineering students at Brown participate in research which allows them to make use of Brown's state-of-the-art facilities in microscopy, materials characterization, materials processing, and fabrication.

The Materials Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The Program Educational Objectives (PEOs) of the Materials Engineering Sc.B. Program are to prepare the graduates: (1) To build on the knowledge gained in their undergraduate program in terms of strong engineering fundamentals, a specific strength in materials engineering, advanced written and verbal communication, and societal awareness and engagement, as well as new knowledge learned in their first years of employment or graduate school, to move toward positions of responsibility, leadership, and influence in the field; and (2) to be viewed as outstanding engineering leaders, whether in start-ups or multinational corporations or academia, in terms of technical competence and in their understanding of an engineer's responsibility to society and to ethical behavior. Through this reputation they will be having a significant organizational influence in their work. The student outcomes of this program are the (1) - (7) Student Outcomes as defined by the "ABET Criteria for Accrediting Engineering Programs" available online at <http://www.abet.org/accreditation-criteria-policies-documents/>

Note: For students still enrolled with the prior ScB in Engineering with tracks structure please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Please note that all students concentrating in Engineering need to file a concentration declaration using the University's ASK advising system. This declaration must be first reviewed by the relevant Concentration Advisor and then approved by the Director of Undergraduate Studies after assuring compliance with all relevant program and accreditation requirements.

Standard Program for the Sc.B. degree

Mathematics Requirements

As mathematics is a cornerstone of all engineering programs, significant attention is given to early preparation in mathematics in engineering concentrations. It is recognized that students entering Brown will have different levels of mathematics preparation, and the following is offered as general guidance, though the actual choices of courses should be made in consultation with an exploratory advisor. MATH 0190 (or MATH 0100), followed by MATH 0200 (or MATH 0180) is the preferred sequence of courses to be taken in the freshman year. MATH 0100 and MATH 0180 offer content like that in MATH 0190 and MATH 0200, respectively, but the latter courses are highly recommended for future engineering students because they offer more examples of relevance to the field. Students who would prefer, or require, a more introductory level calculus course may start the sequence with MATH 0090. They may then take MATH 0200 (or MATH 0180) in the subsequent semester and in that case, would receive engineering concentration credit equivalent to that which they would have received having taken MATH 0190 and MATH 0200. However, students who find that the step up from MATH 0090 to MATH 0200 is too challenging, have a choice to take MATH 0190 (or MATH 0100) upon completion of MATH 0090, but in this case, MATH 0090 would not carry engineering concentration credit and the student would then need to take MATH 0200 (or MATH 0180) in the sophomore year.

Students who have taken Advanced Placement (AP) calculus courses in high school and/or have shown proficiency through AP examinations may start the calculus sequence at a higher level than that suggested above. If a student has AP credit and accepts to use it, it then allows the student to place out of MATH 0190 (or MATH 0100). These students should enroll in the appropriate higher-level math course, e.g., MATH 0200 (or MATH 0180) or possibly MATH 0350 (a more theoretical course that covers similar material). Although it is impossible to place out of MATH 0200 or MATH 0350 with AP credit, we recognize that some students enter with an even higher level of preparation. Those students are advised to enroll in MATH 0520 (Linear Algebra), or MATH 0540 (Honors Linear Algebra), and take their second freshman mathematics course at a higher level, for example, MATH 1460 (Complex Analysis), MATH 1210 (Probability), or MATH 1220 (Mathematical Statistics). Alternatively, for some engineering concentrations, this second MATH credit requirement may be satisfied by taking a course from the Applied Mathematics Department, such as APMA 0350 (Applied Ordinary Differential Equations), APMA 0360 (Applied Partial Differential Equations), APMA 1650 (Statistical Inference) or APMA 1210 (Operations Research: Deterministic Models) if one of those courses listed is not taken for two APMA concentration credits. Details regarding the mathematics requirement for each concentration are listed in the corresponding programs.

Advanced Placement

Courses that have been taken at the secondary school level are typically only used for placement into the appropriate course level at Brown. The examples of how this can be done in mathematics are given above, and there are other instances (such as in selection of the appropriate introductory chemistry course) where AP credit is considered. It should be noted, however, that advanced placement credits cannot be used to substitute for any Engineering concentration requirements; they are instead used to ensure that students are placed into the correct level of courses.

Transfer Credits

Some students will also complete courses at other universities during the time they are Brown students (sometimes during summers while they are not in residence at Brown; sometimes during a junior semester abroad). Students who have successfully completed college courses elsewhere may apply to the University for transfer credit. (See the "Study Elsewhere" section of the University Bulletin for procedures). In addition to the general rules governing such transfers, there are specific rules governing courses that will be offered as satisfying Engineering concentration requirements.

If the course proposed for transfer credit is offered by another department at Brown (i.e., that it carries a course number that does not start with

ENGN), then the equivalent of the course must be established by that other department. This is done by submitting a formal request through the ASK system (https://ask.brown.edu/transfer_credits/information/index). Once this approval has been received from the other department, the student's internal transcript will show the equivalence and the course in question can be shown in the Engineering concentration declaration as having been completed elsewhere. If the equivalence to a Brown course is not approved, then there may still be "unassigned credit" given for the course. In this case, the situation relative to how it does or does not count for concentration credit needs to be discussed with the Concentration Advisor. In rare cases, students may petition the Engineering Concentration Committee to use courses that do not have an equivalent offered at Brown in order to meet a concentration requirement. Substitutions of this nature can only be approved if the student's overall program meets published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses to meet relevant accreditation requirements. Students should consult their Concentration Advisor for assistance with drafting a petition. The decision whether to award concentration credit is made by majority vote of the Engineering Concentration Committee.

If the student wishes to transfer a course taken outside of Brown that would normally carry an Engineering course number, the sequence is a bit different. First, the student needs to fill out an Engineering Transfer Credit Approval Request (see <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad>)). This routes the request to the relevant Brown Engineering faculty member for approval. Once this has been obtained, then transfer approval is requested through the ASK system, as described above. This process ensures that the transcript will capture the equivalence of the externally completed course.

Substitutions for Required Courses

Students may petition the Engineering Concentration Committee to substitute a course in place of a defined concentration requirement. Such substitutions can only be approved if the student's modified program continues to meet the published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses needed to meet accreditation requirements. If the substitution involves taking an equal or higher level course in substantially the same area, whether at Brown or elsewhere, it can be approved by the Concentration Advisor without requiring a formal petition to the Concentration Committee. (For courses taken elsewhere, the credit must be officially transferred as described above.) Students wishing to make substitutions of a broader nature should consult their Concentration Advisor for assistance in drafting their petition to the Engineering Concentration Committee. Such petitions may be approved by a majority vote of the Committee.

1. Core Courses:

ENGN 0030	Introduction to Engineering	1
or ENGN 0031	Honors Introduction to Engineering	
or ENGN 0032	Introduction to Engineering: Design	
ENGN 0040	Engineering Statics and Dynamics	1
ENGN 0410	Materials Science	1
ENGN 0510	Electricity and Magnetism	1
ENGN 0520	Electrical Circuits and Signals	1
ENGN 0720	Thermodynamics	1
ENGN 0310	Mechanics of Solids and Structures	1
or ENGN 0810	Fluid Mechanics	
CHEM 0330	Equilibrium, Rate, and Structure	1
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
or MATH 0100	Single Variable Calculus, Part II	
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
or MATH 0180	Multivariable Calculus	
or MATH 0350	Multivariable Calculus With Theory	

APMA 0350	Applied Ordinary Differential Equations ¹	1
APMA 0360	Applied Partial Differential Equations I ¹	1
or MATH 0520	Linear Algebra	
or APMA 1210	Operations Research: Deterministic Models	
or APMA 1650	Statistical Inference I	
CHEM 0350	Organic Chemistry I	1
or CSCI 0111	Computing Foundations: Data	
or CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
or CSCI 0170	Computer Science: An Integrated Introduction	
or CSCI 0190	Accelerated Introduction to Computer Science	
or ENGN 1230	Instrumentation Design	
or ENGN 1740	Computer Aided Visualization and Design	
or ENGN 1750	Advanced Mechanics of Solids	
or APMA 0160	Introduction to Scientific Computing	
2. Upper-Level Materials Engineering Curriculum		
ENGN 1410	Physical Chemistry of Solids	1
ENGN 1420	Kinetics Processes in Materials Science and Engineering	1
ENGN 1440	Mechanical Properties of Materials	1
PHYS 0790	Physics of Matter	1
or CHEM 0350	Organic Chemistry I	
or CHEM 1140	Physical Chemistry: Quantum Chemistry	
Three of the following: ²		3
ENGN 1450	Properties and Processing of Electronic Materials	
ENGN 1470	Composite Materials	
ENGN 1475	Soft Materials	
ENGN 1480	Metallic Materials	
ENGN 1490	Biomaterials	
3. Capstone Design ³		
ENGN 1000	Projects in Engineering Design I	1
or ENGN 1001	Projects in Engineering Design II	
or ENGN 1930L	Biomedical Engineering Design and Innovation	

* In addition to program requirements above, students must take four courses in the humanities and social sciences.

Total Credits **21**

¹ Students who completed APMA 0330 and/or APMA 0340 prior to AY2021-22 may count these as satisfying the APMA 0350 and/or APMA 0360 requirements.

² These courses are taken in either the junior or senior year. Note that ENGN 1450, ENGN 1470, ENGN 1475, and ENGN 1480 are typically offered in alternate years.

³ Subject to approval by the Concentration Advisor, an independent study course (ENGN 1972/ENGN 1973) may be used to fulfill the Engineering Capstone Design requirement. To qualify for such approval, the independent study project must: (1) contain a significant and definable design component; (2) be based on the knowledge and skills acquired in earlier course work; (3) incorporate appropriate engineering standards; and (4) address multiple realistic constraints. To request approval, please complete the online form available at <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study/>)

Special Sc.B. Concentrations (non-accredited):

In addition to the standard programs described above, students may also petition the Engineering Concentration Committee to pursue a special engineering Sc.B. degree of their own design. Such special Sc.B. programs are not ABET-accredited. Students with a special concentration will receive an Sc.B. degree in engineering, but a specific area of specialization will not be noted on their transcript. A special Sc.B. concentration is intended to prepare graduates for advanced study in

engineering or for professional practice, but in an area that is not covered by one of the existing Sc.B. programs. Accordingly, special concentration programs are expected to consist of a coherent set of courses with breadth, depth and rigor comparable to an accredited degree. A total of 21 engineering, mathematics, and basic science courses are required. The program must include at least 3 courses in mathematics, at least 2 courses in physical or life sciences; and at least 12 courses in engineering. At least five of the engineering courses must be upper level courses, and one must be a capstone design course or independent study, which must be advised or co-advised by a member of the regular engineering faculty. Note that not all Engineering courses may be used to meet Sc.B. requirements: for example, the courses not allowed to count toward the A.B. will not qualify. Petitions should be prepared in consultation with an engineering faculty advisor, who will submit the petition to the Engineering Concentration Committee. Petitions must include: (i) a statement of the objectives of the degree program, and an explanation of how the courses in the program meet these objectives; (ii) course descriptions for any courses in the program that are not part of standard Sc.B. Engineering concentrations; (iii) a detailed description of any independent study courses used for concentration credit, signed by the faculty advisor for this course; and (iv) an up-to-date internal transcript.

Professional Track

While we do not give course credit for internships, we officially recognize their importance via the optional Professional Tracks. The requirements for the professional tracks include all those of the standard tracks, as well as the following: Students must complete full-time professional experiences (or part-time experiences of equivalent total effort) doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts:

- Describe the organization you worked in and the nature of your responsibilities.
- Which courses were put to use in your work?
- Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your work experience?
- What are the topics from these courses that would have helped you if you had been more familiar with them?
- What topics would have been helpful in preparation for this work experience that you did not learn at Brown?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did something you would like to continue doing once you graduate? Explain.
- Would you recommend your work experience to other Brown students? Explain.

The reflective essays are subject to the approval of the student's Concentration Advisor.

Entry to the Professional Track requires a simple application form to be completed by the student and approved by the Concentration Advisor at the time of the concentration declaration. If the student has not yet declared a concentration, the form may be approved by the Chair of the Concentration Committee. The Concentration Advisor will certify that all Professional Track students have completed the necessary internships and will grant approval for the associated reflective essays. All other requirements remain identical to those in the standard tracks in the concentrations.

Degrees with Honors in Engineering

Honors are granted by the University to students whose work in a field of concentration has demonstrated superior quality and culminated in an 'Honors Thesis of Distinction.' Honors recipients in the School of Engineering must meet the following criteria: (1) Demonstrate a strong

academic record (60% A's or "S with Distinction" in their concentration through the seventh semester); (2) Propose and execute an independent research project under the guidance of a faculty member; (3) Complete a written thesis to the satisfaction of the Honors Program Committee; (4) Give a scientific/technical presentation at the Undergraduate Research Symposium in the spring semester; and (5) Fulfill all deadlines for applying for or completing honors to the satisfaction of his/her research advisor and the Honors Program Committee.

Mathematics

Mathematics is a grouping of sciences, including geometry, algebra, and calculus, that study quantity, structure, space, and change. Mathematics concentrators at Brown can explore these concepts through the department's broad course offerings and flexible concentration requirements. The concentration leads to either the Bachelor of Arts or Bachelor of Science degree (the latter is strongly recommended for students interested in pursuing graduate study in mathematics or related fields). Concentrators begin their learning with multivariable calculus, linear algebra, and abstract algebra. Beyond these prerequisites, students take a variety of advanced topics on the 1000 level based on their interests. After sufficient preparation and with permission of the instructor, students may also take courses on the 2000 level. Students also have the option of completing a thesis project.

Concentrators in mathematics should complete the prerequisites by the end of their sophomore year. It is strongly recommended that students take MATH 1010 before taking MATH 1630, (formerly MATH 1130).

Standard program for the A.B. degree

Prerequisites:

Multivariable calculus and linear algebra (choose one of the following sequences): 2

MATH 0180 & MATH 0520 Multivariable Calculus and Linear Algebra

MATH 0180 & MATH 0540 Multivariable Calculus and Linear Algebra With Theory

MATH 0200 & MATH 0520 Multivariable Calculus (Physics/Engineering) and Linear Algebra

MATH 0350 & MATH 0540 Multivariable Calculus With Theory and Linear Algebra With Theory

Or the equivalent

Program:

MATH 1530 Abstract Algebra 1

Five other 1000- or 2000-level Mathematics courses. The year-long sequence 0750/0760 may be substituted for one of these course credits. 5

Total Credits 8

Standard program for the Sc.B. degree

Prerequisites:

Multivariate calculus and linear algebra (choose one of the following sequences): 2

MATH 0180 & MATH 0520 Multivariable Calculus and Linear Algebra

MATH 0180 & MATH 0540 Multivariable Calculus and Linear Algebra With Theory

MATH 0200 & MATH 0520 Multivariable Calculus (Physics/Engineering) and Linear Algebra

MATH 0350 & MATH 0540 Multivariable Calculus With Theory and Linear Algebra With Theory

Or the equivalent

Program:

MATH 1630 Real Analysis I (formerly MATH 1130) 1

MATH 1640 Real Analysis II (formerly MATH 1140) 1

MATH 1530 Abstract Algebra 1

MATH 1540 Topics in Abstract Algebra 1

or MATH 1560 Number Theory

Four other 1000- or 2000- level Mathematics courses. The year-long sequence 0750/0760 may be substituted for one of these course credits. 4

Four additional courses in mathematics, science, economics, or applied mathematics approved by the concentration advisor. 4

Total Credits 14

Honors

Honors degrees may be recommended for students who have exhibited high achievement in mathematics. Candidates must complete at least eight mathematics courses at the 1000 or 2000 level with sufficiently good grades and must write an honors thesis under the guidance of a faculty member. The honors thesis is usually written while the candidate is enrolled in MATH 1970. The candidate should consult with the concentration advisor for the precise grade requirements.

Those interested in graduate study in mathematics are encouraged to take:

MATH 1630 Real Analysis I (formerly MATH 1130)

MATH 1640 Real Analysis II (formerly MATH 1140)

MATH 1460 Complex Analysis (formerly MATH 1260)

MATH 1710 Topology (formerly MATH 1410)

MATH 1540 Topics in Abstract Algebra

Mathematics-Computer Science

Students may opt to pursue an interdisciplinary Bachelor of Science degree in Math-Computer Science, a concentration administered cooperatively between the mathematics and computer science departments. Course requirements include math- and systems-oriented computer science courses, as well as computational courses in applied math. Students must identify a series of electives that cohere around a common theme. As with other concentrations offered by the Computer Science department, students have the option to pursue the professional track (<http://www.cs.brown.edu/ugrad/concentrations/professional.track.html>) of the ScB program in Mathematics-Computer Science.

Requirements for the Standard Track of the Sc.B. degree.

Prerequisites

Three semesters of Calculus to the level of MATH 0180, MATH 0200, or MATH 0350 3

MATH 0520 Linear Algebra 1

or MATH 0540 Linear Algebra With Theory

or CSCI 0530 Coding the Matrix: An Introduction to Linear Algebra for Computer Science

Core Courses

MATH 1530 Abstract Algebra 1

Select one of the following series: 2

Series A

CSCI 0150 & CSCI 0200 Introduction to Object-Oriented Programming and Computer Science and Program Design with Data Structures and Algorithms

Series B

CSCI 0170 & CSCI 0200 Computer Science: An Integrated Introduction and Program Design with Data Structures and Algorithms

Series C

CSCI 0190	Accelerated Introduction to Computer Science (and an additional CS course not otherwise used to satisfy a concentration requirement; an intermediate-level CS course, or a 1000-level CS course)	
Series D ¹		
CSCI 0111 & CSCI 0112 & CSCI 0200	Computing Foundations: Data and Computing Foundations: Program Organization and Program Design with Data Structures and Algorithms	
Intermediate Courses: Two courses from the following:		2
a. Algorithms/Theory Foundations		
CSCI 0500	Data Structures, Algorithms, and Intractability: An Introduction	
CSCI 1010	Theory of Computation	
CSCI 1550	Probabilistic Methods in Computer Science	
CSCI 1570	Design and Analysis of Algorithms	
b. AI/Machine Learning/Data Science Foundations		
CSCI 1410	Artificial Intelligence	
or CSCI 1420	Machine Learning	
or CSCI 1430	Computer Vision	
or CSCI 1460	Computational Linguistics	
or CSCI 1470	Deep Learning	
or CSCI 1850	Deep Learning in Genomics	
or CSCI 1951R	Introduction to Robotics	
c. Systems Foundations		
CSCI 0300	Fundamentals of Computer Systems	
or CSCI 0330	Introduction to Computer Systems	
Three 1000-level Mathematics courses which cannot include arts/policy/humanities courses. One of these can be an additional Foundations Course		3
Three advanced courses in Computer Science ^{2,3}		3
Three additional courses different from any of the above chosen from Mathematics, Computer Science, Applied Mathematics, or related areas ⁴		3
A capstone course in Computer Science or Mathematics ⁵		1
Total Credits		19

¹ Students wishing to go directly from CSCI 0111 to CSCI 0200 (without CSCI 0112) will need to successfully complete additional exercises to receive an instructor override code for CSCI 0200. In 2020-21, these exercises will be offered within CSCI 0111. Students from prior CSCI 0111 offerings should contact the current CSCI0111 instructor to arrange to do this work.

² These must be CSCI courses at the 1000-level or higher. Two of these courses and the intermediate courses must satisfy one of the CS pathways (<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-requirements-2020/pathways-for-undergraduate-and-masters-students/>). At most one arts, humanities, or social science CS course can be used for concentration credit (currently CSCI 1250, 1280, 1360, 1370, 1800, 1805, 1870, 1952B, 1952X, 2002, 2952S).

³ Note: CSCI 1010 may be used either as a math-oriented intermediate course or as an advanced course. CSCI 1010 was formerly known as CSCI 510: they are the same course and hence only one may be taken for credit. CSCI 1450 was formerly known as CSCI 450: they are the same course and hence only one may be taken for credit. Applied Math 1650 or 1655 may be used in place of CSCI 1450 in CS pathway requirements (<https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-requirements-2020/pathways-for-undergraduate-and-masters-students/>). However, concentration credit will be given for only one of Applied Math 1650, 1655, and CSCI 1450.

⁴ These must be approved by a concentration advisor.

⁵ A one-semester course, taken in the student's last undergraduate year, in which the student (or group of students) use a significant portion of their undergraduate education, broadly interpreted, in studying some current topic in depth, to produce a culminating artifact such as a paper or software project. The title and abstract of the artifact, along with the student's and faculty-sponsor's names, will be placed in the CS website. The inclusion of a relevant image or system diagram is strongly encouraged. The complete text of the best artifacts of each class will be featured on the CS website. A senior thesis, which involves two semesters of work, may count as a capstone.

Course-based capstones are currently only available through CS. Approved capstone courses and instructions may be found here: <https://cs.brown.edu/degrees/undergrad/concentrating-in-cs/concentration-requirements-2020/capstone/>

Requirements for the Professional Track of the Sc.B. degree.

The requirements for the professional track include all those of the standard track, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts, to be approved by the student's concentration advisor:

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?
- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Mathematics-Economics

The Mathematics Economics concentration is designed to give a background in economic theory plus the mathematical tools needed to analyze and develop additional theoretical constructions. The emphasis is on the abstract theory itself. Students may choose either the standard or the professional track, both award a Bachelor of Arts degree. If you are interested in declaring a concentration in Mathematics Economics, please refer to this page (<https://economics.brown.edu/academics/undergraduate/concentrations/declaring/>) for more information regarding the process.

Standard Mathematics-Economics Concentration

Economics		
ECON 1130	Intermediate Microeconomics (Mathematical) ¹	1
ECON 1210	Intermediate Macroeconomics	1
ECON 1630	Mathematical Econometrics I	1
Two courses from the "mathematical-economics" group: ²		2
ECON 1170	Welfare Economics and Social Choice Theory	

ECON 1225	Advanced Macroeconomics: Monetary, Fiscal, and Stabilization Policies	
ECON 1255	Unemployment: Models and Policies	
ECON 1470	Bargaining Theory and Applications	
ECON 1490	Theory of Market Design	
ECON 1545	Topics in Macroeconomics, Development and International Economics	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1750	Investments II	
ECON 1770	Crisis Economics	
ECON 1805	Economics in the Laboratory	
ECON 1820	Theory of Behavioral Economics	
ECON 1860	The Theory of General Equilibrium	
ECON 1870	Game Theory and Applications to Economics	
One course from the "data methods" group: ²		1
ECON 1301	Economics of Education I	
ECON 1310	Labor Economics	
ECON 1315	Health, Education, and Social Policy	
ECON 1340	Economics of Global Warming	
ECON 1355	Environmental Issues in Development Economics	
ECON 1360	Health Economics	
ECON 1375	Inequality of Opportunity in the US	
ECON 1385	Intergenerational Poverty in America	
ECON 1400	The Economics of Mass Media	
ECON 1430	The Economics of Social Policy	
ECON 1510	Economic Development	
ECON 1530	Health, Hunger and the Household in Developing Countries	
ECON 1629	Applied Research Methods for Economists	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
ECON 1670	Advanced Topics in Econometrics	
ECON 1680	Machine Learning, Text Analysis, and Economics	
ECON 1825	Behavioral Economics and Public Policy	
ECON 1830	Behavioral Finance	
Two additional 1000-level economics courses ³		2
Mathematics		
Calculus: MATH 0180 or higher		1
Linear Algebra - one of the following:		1
MATH 0520	Linear Algebra	
MATH 0540	Linear Algebra With Theory	
Probability Theory - one of the following:		1
MATH 1210	Probability (Formerly MATH 1610)	
MATH 1620	Mathematical Statistics	
APMA 1650	Statistical Inference I	
Analysis - one of the following:		1
MATH 1010	Analysis: Functions of One Variable	
MATH 1630	Real Analysis I (Formerly MATH 1130)	
MATH 1640	Real Analysis II (Formerly MATH 1140)	
Differential Equations - one of the following:		1
MATH 1110	Ordinary Differential Equations	
MATH 1120	Partial Differential Equations	

One additional course from the Probability, Analysis, and Differential Equations courses listed above

1

Total Credits**14**

¹ Or ECON 1110 with permission. For students matriculating at Brown in Fall 2021 or later, note that if ECON 1110 is used, then one additional course from the mathematical-economics group will be required

² No course may be "double-counted" to satisfy both the mathematical-economics and data methods requirement.

³ Students may apply, at most, one Economics course whose number is in the range of 1000 to 1099 toward the concentration. Note that ECON 1620, ECON 1960, and ECON 1970 (independent study) cannot be used for concentration credit. However, ECON 1620 and ECON 1960 can be used for university credit and up to two 1970s may be used for university credit.

⁴ MATH 1630 (formerly MATH 1130) is a prerequisite for MATH 1640 (formerly MATH 1140).

Honors:

Students who meet stated requirements are eligible to write an honors thesis in their senior year. Students should consult the listed honors requirements of whichever of the two departments their primary thesis advisor belongs to, at the respective departments' websites.

Professional Track:

The requirements for the professional track include all those of the standard track, as well as the following:

Students must complete full-time professional experiences doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement.

On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts, to be approved by the student's concentration advisor:

- Which courses were put to use in your summer's work? Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your summer experience? What are the topics from these courses that would have helped you over the summer if you had been more familiar with them?
- Are there topics you should have been familiar with in preparation for your summer experience, but are not taught at Brown? What are these topics?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did over the summer something you would like to continue doing once you graduate? Explain.
- Would you recommend your summer experience to other Brown students? Explain.

Mechanical Engineering

The Sc.B. program in Mechanical Engineering (ME) has a long tradition of excellence at Brown. ME is one of the most versatile engineering disciplines as it explores a wide range of systems spanning fluids and solids. Students from this concentration learn the science of motion, designing and analyzing systems that shape our world: From high-precision nanomechanical machines to large-scale aerospace systems. At Brown, ME students carve unique paths leveraging computational, analytical, or experimental methodologies with other areas of interest in the spirit of the open curriculum. They become distinguished scholars, engineering innovators, and management leaders.

The curriculum in ME is intended to provide students with a broad interdisciplinary foundation complemented by specialized training in mechanical systems and fluid/thermal systems.

The Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The Program Educational Objectives of the Mechanical Engineering program are to prepare the graduates: (1) to pursue careers as creative and innovative mechanical engineers in industry or academia; (2) to advance the frontiers of their field; and (3) to discharge their offices in a professional and responsible manner. The student outcomes of this program are the (1) - (7) Student Outcomes as defined by the "ABET Criteria for Accrediting Engineering Programs" available online at <http://www.abet.org/accreditation-criteria-policies-documents/>

Note: For students still enrolled with the prior ScB in Engineering with tracks structure please refer to the Archived Bulletin link on left hand navigation for your requirements for the year you declared.

Please note that all students concentrating in Engineering need to file a concentration declaration using the University's ASK advising system. This declaration must be first reviewed by the relevant Concentration Advisor and then approved by the Director of Undergraduate Studies after assuring compliance with all relevant program and accreditation requirements.

Standard Program for the Sc.B. degree Mathematics Requirements

As mathematics is a cornerstone of all engineering programs, significant attention is given to early preparation in mathematics in engineering concentrations. It is recognized that students entering Brown will have different levels of mathematics preparation, and the following is offered as general guidance, though the actual choices of courses should be made in consultation with an exploratory advisor. MATH 0190 (or MATH 0100), followed by MATH 0200 (or MATH 0180) is the preferred sequence of courses to be taken in the freshman year. MATH 0100 and MATH 0180 offer content like that in MATH 0190 and MATH 0200, respectively, but the latter courses are highly recommended for future engineering students because they offer more examples of relevance to the field. Students who would prefer, or require, a more introductory level calculus course may start the sequence with MATH 0090. They may then take MATH 0200 (or MATH 0180) in the subsequent semester and in that case, would receive engineering concentration credit equivalent to that which they would have received having taken MATH 0190 and MATH 0200. However, students who find that the step up from MATH 0090 to MATH 0200 is too challenging, have a choice to take MATH 0190 (or MATH 0100) upon completion of MATH 0090, but in this case, MATH 0090 would not carry engineering concentration credit and the student would then need to take MATH 0200 (or MATH 0180) in the sophomore year.

Students who have taken Advanced Placement (AP) calculus courses in high school and/or have shown proficiency through AP examinations may start the calculus sequence at a higher level than that suggested above. If a student has AP credit and accepts to use it, it then allows the student to place out of MATH 0190 (or MATH 0100). These students should enroll in the appropriate higher-level math course, e.g., MATH 0200 (or MATH 0180) or possibly MATH 0350 (a more theoretical course that covers similar material). Although it is impossible to place out of MATH 0200 or MATH 0350 with AP credit, we recognize that some students enter with an even higher level of preparation. Those students are advised to enroll in MATH 0520 (Linear Algebra), or MATH 0540 (Honors Linear Algebra), and take their second freshman mathematics course at a higher level, for example, MATH 1460 (Complex Analysis), MATH 1210 (Probability), or MATH 1220 (Mathematical Statistics). Alternatively, for some engineering concentrations, this second MATH credit requirement may be satisfied by taking a course from the Applied Mathematics Department, such as APMA 0350 (Applied Ordinary Differential Equations), APMA 0360 (Applied Partial Differential Equations), APMA 1650 (Statistical Inference) or APMA 1210 (Operations Research: Deterministic Models) if one of those courses listed is not taken for two APMA concentration credits. Details regarding the mathematics requirement for each concentration are listed in the corresponding programs.

Advanced Placement

Courses that have been taken at the secondary school level are typically only used for placement into the appropriate course level at Brown. The examples of how this can be done in mathematics are given above, and there are other instances (such as in selection of the appropriate introductory chemistry course) where AP credit is considered. It should be noted, however, that advanced placement credits cannot be used to substitute for any Engineering concentration requirements; they are instead used to ensure that students are placed into the correct level of courses.

Transfer Credits

Some students will also complete courses at other universities during the time they are Brown students (sometimes during summers while they are not in residence at Brown; sometimes during a junior semester abroad). Students who have successfully completed college courses elsewhere may apply to the University for transfer credit. (See the "Study Elsewhere" section of the University Bulletin for procedures). In addition to the general rules governing such transfers, there are specific rules governing courses that will be offered as satisfying Engineering concentration requirements.

If the course proposed for transfer credit is offered by another department at Brown (i.e., that it carries a course number that does not start with ENGN), then the equivalent of the course must be established by that other department. This is done by submitting a formal request through the ASK system (https://ask.brown.edu/transfer_credits/information/index). Once this approval has been received from the other department, the student's internal transcript will show the equivalence and the course in question can be shown in the Engineering concentration declaration as having been completed elsewhere. If the equivalence to a Brown course is not approved, then there may still be "unassigned credit" given for the course. In this case, the situation relative to how it does or does not count for concentration credit needs to be discussed with the Concentration Advisor. In rare cases, students may petition the Engineering Concentration Committee to use courses that do not have an equivalent offered at Brown in order to meet a concentration requirement. Substitutions of this nature can only be approved if the student's overall program meets published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses to meet relevant accreditation requirements. Students should consult their Concentration Advisor for assistance with drafting a petition. The decision whether to award concentration credit is made by majority vote of the Engineering Concentration Committee.

If the student wishes to transfer a course taken outside of Brown that would normally carry an Engineering course number, the sequence is a bit different. First, the student needs to fill out an Engineering Transfer Credit Approval Request (see <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/study-abroad>)). This routes the request to the relevant Brown Engineering faculty member for approval. Once this has been obtained, then transfer approval is requested through the ASK system, as described above. This process ensures that the transcript will capture the equivalence of the externally completed course.

Substitutions for Required Courses

Students may petition the Engineering Concentration Committee to substitute a course in place of a defined concentration requirement. Such substitutions can only be approved if the student's modified program continues to meet the published educational outcomes for the concentration and has sufficient basic science, mathematics, and engineering topics courses needed to meet accreditation requirements. If the substitution involves taking an equal or higher level course in substantially the same area, whether at Brown or elsewhere, it can be approved by the Concentration Advisor without requiring a formal petition to the Concentration Committee. (For courses taken elsewhere, the credit must be officially transferred as described above.) Students wishing to make substitutions of a broader nature should consult their Concentration Advisor for assistance in drafting their petition to the

Engineering Concentration Committee. Such petitions may be approved by a majority vote of the Committee.

1. Core Courses:

ENGN 0030	Introduction to Engineering	1
or ENGN 0031	Honors Introduction to Engineering	
or ENGN 0032	Introduction to Engineering: Design	
ENGN 0040	Engineering Statics and Dynamics	1
ENGN 0310	Mechanics of Solids and Structures	1
ENGN 0410	Materials Science ¹	1
ENGN 0510	Electricity and Magnetism	1
ENGN 0520	Electrical Circuits and Signals	1
ENGN 0720	Thermodynamics	1
ENGN 0810	Fluid Mechanics	1
CHEM 0330	Equilibrium, Rate, and Structure	1
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	1
or MATH 0100	Single Variable Calculus, Part II	
MATH 0200	Multivariable Calculus (Physics/Engineering)	1
or MATH 0180	Multivariable Calculus	
or MATH 0350	Multivariable Calculus With Theory	
APMA 0350	Applied Ordinary Differential Equations ²	1
APMA 0360	Applied Partial Differential Equations I ²	1
CSCI 0111	Computing Foundations: Data	1
or CSCI 0150	Introduction to Object-Oriented Programming and Computer Science	
or CSCI 0170	Computer Science: An Integrated Introduction	
or CSCI 0190	Accelerated Introduction to Computer Science	
or APMA 0160	Introduction to Scientific Computing	
or ENGN 1931Z	Interfaces, Information and Automation	

2. Upper-Level Mechanical Engineering Curriculum: Complete at least 6 courses from the following groups:

Mechanical Systems: At least one course from:

ENGN 1300	Structural Analysis
ENGN 1370	Advanced Engineering Mechanics
ENGN 1735	Vibration of Mechanical Systems
ENGN 1750	Advanced Mechanics of Solids

Fluids/Thermal Systems: At least one course from:

ENGN 1860	Advanced Fluid Mechanics
ENGN 1700	High Reynolds Number Flows
ENGN 1710	Principles of Heat Transfer

Capstone: At least one course from the following must be taken in the final two semesters: ³

ENGN 1000	Projects in Engineering Design I
or ENGN 1001	Projects in Engineering Design II
ENGN 1930M	Industrial Design
ENGN 1931D	Design of Mechanical Assemblies
ENGN 1760	Design of Space Systems

Design Electives: Up to two courses from:

ENGN 1230	Instrumentation Design
ENGN 1740	Computer Aided Visualization and Design

Bioengineering Electives: Up to two courses from:

ENGN 1210	Biomechanics
ENGN 1220	Neuroengineering
ENGN 1490	Biomaterials

Robotic and Control Systems Electives: Up to two courses from:

ENGN 1931I	Design of Robotic Systems
ENGN 1931Y	Control Systems Engineering

Engineering Analysis and Computation Electives: Up to two courses from:

ENGN 1840	Numerical Methods in Scientific Computing
ENGN 1950	Advanced Numerical Methods for Data, Simulation, and Optimization
Energy and Environmental Engineering Electives: Up to two courses from:	
ENGN 1932P	Sustainable Energy: Science and Technology
ENGN 1931P	Energy and the Environment
Interdisciplinary Electives: Up to one course from: ⁴	
ENGN 1620	Analysis and Design of Electronic Circuits
or ENGN 1340	Water Supply and Treatment Systems - Technology and Sustainability
or ENGN 1440	Mechanical Properties of Materials
or ENGN 1470	Composite Materials
or ENGN 1570	Linear System Analysis
or ENGN 1931F	Introduction to Power Engineering
or ENGN 1931Z	Interfaces, Information and Automation

3. Upper Level, Advanced Science Course: At least one course from: ⁵

PHYS 0790	Physics of Matter
or BIOL 0800	Principles of Physiology
or CHEM 0350	Organic Chemistry I
or CHEM 1140	Physical Chemistry: Quantum Chemistry
or EEPS 1450	Structural Geology
or EEPS 1370	Environmental Geochemistry

4. General Education Requirement: At least four approved courses must be taken in humanities and social sciences

Total Credits **21**

¹ ENGN 1490 may be substituted if taken in Sophomore year.

² Students who completed APMA 0330 and/or APMA 0340 prior to academic year 2021-22 may count these as satisfying the APMA 0350 and/or APMA 0360 requirements. Other advanced courses in Mathematics or Applied Mathematics may be substituted with approval of the Concentration Advisor.

³ Subject to approval by the concentration advisor, an independent study course (ENGN 1972/ENGN 1973) may be used to fulfill the Engineering Capstone Design requirement. To qualify for such approval, the independent study project must: (1) contain a significant and definable design component; (2) be based on the knowledge and skills acquired in earlier course work; (3) incorporate appropriate engineering standards; and (4) address multiple realistic constraints. To request approval, please complete the online form available at <https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study> (<https://engineering.brown.edu/undergraduate/concentrations/concentration-options/independent-study/>)

⁴ Other advanced alternative courses can be used with the approval of the Concentration Advisor.

⁵ Other non-introductory courses in physics, chemistry, neuroscience, geology, and biology are allowed.

Special Sc.B. Concentrations (non-accredited):

In addition to the standard programs described above, students may also petition the Engineering Concentration Committee to pursue a special engineering Sc.B. degree of their own design. Such special Sc.B. programs are not ABET-accredited. Students with a special concentration will receive an Sc.B. degree in engineering, but a specific area of specialization will not be noted on their transcript. A special Sc.B. concentration is intended to prepare graduates for advanced study in engineering or for professional practice, but in an area that is not covered by one of the existing Sc.B. programs. Accordingly, special concentration programs are expected to consist of a coherent set of courses with breadth, depth and rigor comparable to an accredited degree. A total of 21 engineering, mathematics, and basic science courses are required. The program must include at least 3 courses in mathematics, at least 2

courses in physical or life sciences; and at least 12 courses in engineering. At least five of the engineering courses must be upper level courses, and one must be a capstone design course or independent study, which must be advised or co-advised by a member of the regular engineering faculty. Note that not all Engineering courses may be used to meet Sc.B. requirements: for example, the courses not allowed to count toward the A.B. will not qualify. Petitions should be prepared in consultation with an engineering faculty advisor, who will submit the petition to the Engineering Concentration Committee. Petitions must include: (i) a statement of the objectives of the degree program, and an explanation of how the courses in the program meet these objectives; (ii) course descriptions for any courses in the program that are not part of standard Sc.B. Engineering concentrations; (iii) a detailed description of any independent study courses used for concentration credit, signed by the faculty advisor for this course; and (iv) an up-to-date internal transcript.

Professional Track

While we do not give course credit for internships, we officially recognize their importance via the optional Professional Tracks. The requirements for the professional tracks include all those of the standard tracks, as well as the following: Students must complete full-time professional experiences (or part-time experiences of equivalent total effort) doing work that is related to their concentration programs, totaling 2-6 months, whereby each internship must be at least one month in duration in cases where students choose to do more than one internship experience. Such work is normally done at a company, but may also be at a university under the supervision of a faculty member. Internships that take place between the end of the fall and the start of the spring semesters cannot be used to fulfill this requirement. On completion of each professional experience, the student must write and upload to ASK a reflective essay about the experience addressing the following prompts:

- Describe the organization you worked in and the nature of your responsibilities.
- Which courses were put to use in your work?
- Which topics, in particular, were important?
- In retrospect, which courses should you have taken before embarking on your work experience?
- What are the topics from these courses that would have helped you if you had been more familiar with them?
- What topics would have been helpful in preparation for this work experience that you did not learn at Brown?
- What did you learn from the experience that probably could not have been picked up from course work?
- Is the sort of work you did something you would like to continue doing once you graduate? Explain.
- Would you recommend your work experience to other Brown students? Explain.

The reflective essays are subject to the approval of the student's Concentration Advisor.

Entry to the Professional Track requires a simple application form to be completed by the student and approved by the Concentration Advisor at the time of the concentration declaration. If the student has not yet declared a concentration, the form may be approved by the Chair of the Concentration Committee. The Concentration Advisor will certify that all Professional Track students have completed the necessary internships and will grant approval for the associated reflective essays. All other requirements remain identical to those in the standard tracks in the concentrations.

Degrees with Honors in Engineering

Honors are granted by the University to students whose work in a field of concentration has demonstrated superior quality and culminated in an 'Honors Thesis of Distinction.' Honors recipients in the School of Engineering must meet the following criteria: (1) Demonstrate a strong academic record (60% A's or "S with Distinction" in their concentration through the seventh semester); (2) Propose and execute an independent research project under the guidance of a faculty member; (3) Complete a written thesis to the satisfaction of the Honors Program Committee; (4) Give a scientific/technical presentation at the Undergraduate Research Symposium in the spring semester; and (5) Fulfill all deadlines for applying

for or completing honors to the satisfaction of his/her research advisor and the Honors Program Committee.

Medieval Cultures

The program in Medieval Studies offers a concentration in Medieval Cultures with two tracks with distinct foci: one in Medieval Cultures and the other in Late Antique Cultures. **Medieval Cultures** focuses on the 6th-15th centuries, combining interdisciplinary perspectives with in-depth study of one or two related disciplines.

Late Antique Cultures deals with the 3rd-9th centuries, when ancient cultural forms were still in place but medieval cultures were beginning to take shape simultaneously. The first undergraduate degree of its kind in this country, Late Antique Cultures studies the changing relation of cultural practices, social patterns, political and economics forms, and artistic and literary traditions in this important transition period.

A traditional area of study in Medieval Cultures is Western Europe in the High Middle Ages, but students are encouraged to work comparatively in Byzantine, Islamic, Judaic and/or Slavic cultures in the middle ages.

Medieval Cultures Track

It is recommended that prospective concentrators take the introductory course, *Medieval Perspectives*, during their freshman or sophomore year.

Requirements

Ten courses approved by the Program in Medieval Studies, including two courses in medieval history and one 1000- or 2000-level course that uses primary texts in a medieval language other than Middle English. Interested students are invited to discuss their plans with an appropriate faculty member of the Program. A concentration proposal should be prepared in consultation with the faculty advisor and submitted to the Program Chair for approval.

Under the supervision of the director of the program, students may choose courses from the following:

JUDS 0050M	Difficult Relations? Judaism and Christianity from the Middle Ages until the Present
RELS 0015	Sacred Stories
ENGL 0100D	Matters of Romance
RELS 0110	Christians
RELS 0150	Islam Unveiled
HIST 0150B	The Philosophers' Stone: Alchemy From Antiquity to Harry Potter
ENGL 0150C	The Medieval King Arthur
RELS 0290D	Islamic Sexualities
ENGL 0300F	Beowulf to Aphra Behn: The Earliest British Literatures
ENGL 0310F	Prose Sagas of the Medieval North
HIAA 0321	Toward a Global Late Antiquity:200-800 CE
MDVL 0360	Medieval Bodies: Medieval Perspectives
RELS 0410	Ancient Christianity: Jesus to Muhammad
RELS 0420	Sacred Bodies
HIAA 0460	Muslims, Jews and Christians in Medieval Iberia
COLT 0510K	The 1001 Nights
HIST 0521A	Christianity in Conflict in the Medieval Mediterranean
HIST 0521M	The Holy Grail and the Historian's Quest for the Truth
CLAS 0600	The Literary Worlds of Late Antiquity
MDVL 0620	Muslims, Jews, and Christians in Medieval Iberia
RELS 0640	Dying To Be With God: Jihad, Past and Present

HIST 0621B	The Search for King Arthur
CLAS 0660	The World of Byzantium
JUDS 0681	Great Jewish Books
HISP 0750E	Topics in Hispanic Culture and Civilization
MUSC 0910	Medieval and Renaissance Music
ITAL 1010	Dante in English Translation: Dante's World and the Invention of Modernity
LATN 1110F	Fortunatus
LATN 1110H	Literature at the Court of Charlemagne
LATN 1110L	Medieval Latin Lyric
GREK 1110Q	Greek Erotic Literature: From Plato to the Medieval Romances
GREK 1110T	Rhetors and Philosophers: Intellectual Thought and Sophistic Style in the Ancient World
LATN 1120C	Survey of Late and Medieval Latin
LATN 1120D	Alcuin
CLAS 1120G	The Idea of Self
CLAS 1120V	The Age of Constantine: The Roman Empire in Transition
HIST 1205	The Long Fall of the Roman Empire
HIST 1210A	The Viking Age
HIST 1211	Becoming Medieval: Self, Other, and the World
HIST 1260D	Living Together: Muslims, Christians, and Jews in Medieval Iberia
HIST 1280	Death from Medieval Relics to Forensic Science
COLT 1310E	A Classical Islamic Education: Readings in Arabic Literature
ENGL 1310T	Chaucer
ENGL 1310V	Chaucer: The Canterbury Tales
ENGL 1311E	History of the English Language
ENGL 1311H	Sagas Without Borders: Multilingual Literatures of Early England
ENGL 1311L	From Mead-Hall to Mordor: The Celtic and Germanic Roots of Tolkien's Fiction
RELS 1325C	The Virgin Mary in Christian Tradition
HISP 1330T	El amor en español
ENGL 1360F	Quest, Vision, Diaspora: Medieval Journey Narratives
ENGL 1360H	Introduction to the Old English Language
ENGL 1360J	Middle English Literature
ENGL 1360U	Europe in the Vernacular
ENGL 1361D	Women's Voices in Medieval Literature
ENGL 1361K	Seminar in the Old English Language II
HIST 1440	The Ottomans: Faith, Law, Empire
HIAA 1440B	The Architecture of Solitude: The Medieval Monastery
RELS 1520	Pilgrimage and Sacred Travel in the Lands of Islam
RELS 1530A	Methods and Problems in Islamic Studies
RELS 1530D	Medieval Islamic Sectarianism
HIAA 1560A	Italy and the Mediterranean
ASYR 1600	Astronomy Before the Telescope
JUDS 1630	The Talmud
CLAS 1750L	Erotic Desire in the Premodern Mediterranean
COLT 1813P	Captive Imaginations: Writing Prison in the Middle Ages

HIST 1835A	Unearthing the Body: History, Archaeology, and Biology at the End of Antiquity
ENGL 1900Y	Medieval Manuscript Studies: Paleography, Codicology, and Interpretation
HIST 1963L	Barbarians, Byzantines, and Berbers: Early Medieval North Africa, AD 300-1050
HIST 1963M	Charlemagne: Conquest, Empire, and the Making of the Middle Ages
HIST 1963Q	Sex, Power, and God: A Medieval Perspective
MDVL 1970	Independent Study
HIST 1979H	Prostitutes, Mothers, + Midwives: Women in Pre-modern Europe and North America
MDVL 1990	Honors Thesis
HISP 2030D	Fifteenth-Century Sentimental Romances and Celestina
GREK 2110F	Greek Palaeography and Premodern Book Cultures
ENGL 2360Q	Manuscript, Image, and the Middle English Text
HIST 2970A	New Perspectives on Medieval History

Honors

This is awarded to students who present a meritorious honors thesis in addition to completing the required courses of the concentration. The thesis permits the student to synthesize various disciplines or interests, or to pursue a new interest in greater depth. To be eligible for Honors, candidates must complete a minimum of six approved courses in Medieval Studies by the end of their third year with more grades of A than B. Students should apply for admission to Honors and should meet with their faculty advisor(s) no later than spring of the junior year to plan the thesis project. Accepted candidates write the thesis in a two-semester course sequence under the supervision of a director and second reader drawn from the Medieval Studies faculty.

Interested students should contact the concentration advisor for further details or consultation (863-1994).

Late Antique Cultures Track

Requirements:

One course in Roman history:	1
CLAS 1310	Roman History I: The Rise and Fall of an Imperial Republic
CLAS 1320	Roman History II: The Roman Empire and Its Impact (recommended)
One class in medieval history	1
One course at the advanced level (numbered at least 1000) in one approved language	1
Six other courses drawn from appropriate offerings and with the approval of the concentration advisor. These courses should support a concentrational area of special interest.	6

Total Credits 9

¹ The language in most cases will be Latin, but students will present different competencies and interests; other languages, such as Greek, Hebrew, or one of the medieval vernaculars can be substituted for Latin, with the approval of the concentration advisor and in conjunction with a clearly articulated program of study.

Under the supervision of the director of the program, students may choose courses from the following:

CLAS 0660	The World of Byzantium
CLAS 1120G	The Idea of Self
CLAS 1120V	The Age of Constantine: The Roman Empire in Transition

CLAS 1750L	Erotic Desire in the Premodern Mediterranean
COLT 0510K	The 1001 Nights
COLT 1813P	Captive Imaginations: Writing Prison in the Middle Ages
ENGL 0100D	Matters of Romance
ENGL 0150C	The Medieval King Arthur
ENGL 0300F	Beowulf to Aphra Behn: The Earliest British Literatures
ENGL 0310F	Prose Sagas of the Medieval North
ENGL 1310T	Chaucer
ENGL 1310V	Chaucer: The Canterbury Tales
ENGL 1311H	Sagas Without Borders: Multilingual Literatures of Early England
ENGL 1311L	From Mead-Hall to Mordor: The Celtic and Germanic Roots of Tolkien's Fiction
ENGL 1360F	Quest, Vision, Diaspora: Medieval Journey Narratives
ENGL 1360H	Introduction to the Old English Language
ENGL 1360J	Middle English Literature
ENGL 1360U	Europe in the Vernacular
ENGL 1361D	Women's Voices in Medieval Literature
ENGL 1900Y	Medieval Manuscript Studies: Paleography, Codicology, and Interpretation
ENGL 2360Q	Manuscript, Image, and the Middle English Text
GREK 1110Q	Greek Erotic Literature: From Plato to the Medieval Romances
GREK 1110T	Rhetors and Philosophers: Intellectual Thought and Sophistic Style in the Ancient World
GREK 2110F	Greek Palaeography and Premodern Book Cultures
HIAA 0321	Toward a Global Late Antiquity: 200-800 CE
HIAA 0460	Muslims, Jews and Christians in Medieval Iberia
HIAA 1440B	The Architecture of Solitude: The Medieval Monastery
HISP 2030D	Fifteenth-Century Sentimental Romances and Celestina
HIST 0150B	The Philosophers' Stone: Alchemy From Antiquity to Harry Potter
HIST 0521A	Christianity in Conflict in the Medieval Mediterranean
HIST 0521M	The Holy Grail and the Historian's Quest for the Truth
HIST 0621B	The Search for King Arthur
HIST 1205	The Long Fall of the Roman Empire
HIST 1210A	The Viking Age
HIST 1260D	Living Together: Muslims, Christians, and Jews in Medieval Iberia
HIST 1211	Becoming Medieval: Self, Other, and the World
HIST 1963L	Barbarians, Byzantines, and Berbers: Early Medieval North Africa, AD 300-1050
HIST 1963Q	Sex, Power, and God: A Medieval Perspective
HIST 1963M	Charlemagne: Conquest, Empire, and the Making of the Middle Ages
HIST 1974M	Early Modern Globalization
HIST 2970A	New Perspectives on Medieval History

JUDS 0050M	Difficult Relations? Judaism and Christianity from the Middle Ages until the Present
JUDS 0681	Great Jewish Books
JUDS 1630	The Talmud
LATN 1110F	Fortunatus
LATN 1110H	Literature at the Court of Charlemagne
LATN 1120C	Survey of Late and Medieval Latin
LATN 1120D	Alcuin
MDVL 0360	Medieval Bodies: Medieval Perspectives
MDVL 0620	Muslims, Jews, and Christians in Medieval Iberia
MDVL 1970	Independent Study
MDVL 1990	Honors Thesis
RELS 0025	Wealth: Religious Approaches
RELS 0110	Christians
RELS 0150	Islam Unveiled
RELS 0290D	Islamic Sexualities
RELS 0410	Ancient Christianity: Jesus to Muhammad
RELS 0640	Dying To Be With God: Jihad, Past and Present
RELS 1300	Ancient Christianity and the Sensing Body
RELS 1520	Pilgrimage and Sacred Travel in the Lands of Islam
RELS 1530A	Methods and Problems in Islamic Studies
RELS 1530D	Medieval Islamic Sectarianism

Honors

When in Late Antique Cultures, these are awarded to students who present a meritorious honors thesis in addition to completing the required courses of the concentration. Application for admission to honors should be made in the spring of the junior year, by which time honors candidates must have completed a minimum of six approved courses in Late Antique Studies. Accepted candidates write the thesis in a two-semester course sequence (MDVL 1990) under the supervision of a director and a second reader to be determined in consultation with the advisor.

Middle East Studies

The concentration in Middle East Studies (MES) seeks to build a strong, interdisciplinary understanding of historical and contemporary issues within the Middle East, broadly defined. Requirements are intentionally flexible to accommodate the focused interests of students in understanding the diverse dynamics, histories, and societies of this region. A variety of courses from departments across the University, addressing subjects from antiquity to the present day, expose students to methods and materials of different disciplines and help them build a framework for understanding the Middle East in historical and contemporary context. Concentration requirements are structured around four major cornerstones: language, foundational knowledge and methods, multidisciplinary area studies, and research.

A semester-by-semester roster of courses eligible for MES elective credit can be found on the Center for Middle East Studies (<http://middleeastbrown.org/>) website.

Standard Program for the AB Degree

Foundational Courses: All MES concentrators are expected to take both of the following foundational courses. It is recommended that students take the first foundational course (MES 0100: The Middle East: Cultures and Societies—offered every spring) before taking the second foundational course (MES 1968: Approaches to the Middle East—offered every fall). Foundational course requirements cannot be fulfilled via independent study, study abroad, or transfer credits.

MES 0100	The Middle East: Cultures & Societies ¹

2

MES 1968	Approaches to the Middle East (HIST 1968A) ²	5
Electives: Students must take at least five elective courses chosen in consultation with the Director of Undergraduate Studies (DUS) from among the courses listed by MES as approved electives on its website (https://watson.brown.edu/cmesc/academics/undergraduate-concentration/course-listing/all-courses). Students may apply up to two Middle Eastern language credits (beyond those that fulfill the language requirement: see below) to the MES electives requirement. To allow for exposure of different disciplinary approaches to the Middle East, students must take at least one course in the humanities (offered within the departments of Archaeology and the Ancient World, Classics, Comparative Literature, History of Art and Architecture, Modern Culture and Media, Philosophy, or Religious Studies) and at least one course in the social sciences (offered within the departments of Anthropology, History, International Relations, Political Science, Sociology, or Urban Studies). Some examples of recent courses that would fulfill these requirements include:		
Humanities		
CLAS 0660	The World of Byzantium	
HIAA 0041	The Architectures of Islam	
RELS 0088	Judaism, Christianity, and Islam	
Social Sciences:		
ANTH 1150	Middle East in Anthropological Perspective	
HIST 0244	Understanding the Middle East: 1800s to the Present	
POLS 1822I	Geopolitics of Oil and Energy	
SOC 1871L	Migration, Displacement and Emerging Community Experiences: Contemporary Turkey	
URBN 1870K	Jerusalem Divided: Politics and Cultural Heritage	
Language Semesters: Middle East Studies concentrators are expected to reach a level of language proficiency consistent with completion of four semesters of Brown language coursework in at least one of the modern Middle Eastern languages, such as Arabic, Persian, Hebrew, or Turkish, or the equivalent through transfer or study abroad credits. Students who surpass the language requirement can apply up to two Middle Eastern language credits toward the MES elective requirements (see above). Students who have reached proficiency in a Middle Eastern language but have not received four credits at Brown (including transfer and/or study abroad credits) can fulfill this requirement: ³		
• Through advanced reading and writing courses in that language. Recent examples include:		
COLT 1310J	The Arab Renaissance	
COLT 1431B	Modern Arabic Poetry	
ARAB 0700	Advanced Arabic: Tales of the City	
• Through taking courses in a second Middle Eastern language.		
• Or through courses in a non-Middle Eastern language to be used in a senior capstone project (for example, Spanish for the study of Andalucía or French for the study of North Africa).		

Capstone/Honors Project: MES requires all concentrators to conduct a capstone project within their senior year (i.e., in their last two semesters before graduation). The purpose of the capstone is to synthesize and apply the skills and knowledge that MES concentrators have acquired through the MES curriculum—including disciplinary perspectives, methodological and theoretical approaches, background in the historical and contemporary dynamics of the region, and language competency—to particular interests developed through the concentration. Capstones offer students the opportunity to integrate and build upon their experiences within the concentration, while demonstrating intellectual creativity, research skills, and effective communication, and should serve in some sense as a culmination of or reflection on what one has gained in the concentration. All students are expected to present their capstone research in the final semester before graduation. Presentations of honors theses will be approximately twenty minutes long, and those of non-honors capstone projects will be approximately ten minutes long, both followed by a question-and-answer session. Capstone projects must fulfill the following requirements:

- Must be taken in the final two semesters before graduation (excluding summer and winter sessions)
- Must incorporate research in a Middle Eastern language.
- Must be approved or overseen by a MES or MES-affiliated faculty member.
- Must be presented in the final semester before graduation.

Capstones can take one of three forms:

- a. A Middle East-focused research paper of at least 20 pages for an existing concentration-eligible (MES-coded or X-Listed) course, undertaken with the permission and supervision of the instructor.
- b. An independent study or project (artistic, research, or otherwise), approved by the DUS and supervised by at least one faculty member for at least one semester under the MES 1970 - Independent Study designation.
- c. A two-semester honors thesis, completed under the supervision of a primary reader (who is an MES or MES-affiliated faculty member) and a secondary reader (who can be from other Brown departments and programs), and in coordination with the DUS.⁴

Total Credits **12**

¹ For concentrators graduating before 2023, courses designated "Foundational Courses" under previous concentration requirements may be used to fulfill this requirement. Please meet with the MES Director of Undergraduate Studies (DUS) to discuss any such arrangements.

² Previously HIST 1968 or HIST 1968A: Approaches to the Middle East. Any student who has taken HIST 1968 or HIST 1968A: Approaches to the Middle East, will have fulfilled this requirement.

³ Concentrators are encouraged to discuss options for fulfilling language requirements with the DUS.

⁴ Two semesters of Independent Study (MES 1970 & MES 1971) are required for honors and will raise the number of required courses to 13. One of these Independent Study courses should take the form of a thesis writing workshop supervised by the DUS or other designated MES faculty during the first semester of thesis writing. Students must declare their intention to write an honors thesis and submit a thesis prospectus (to include a thesis proposal, research plan, proposed thesis outline, initial literature review, and initial bibliography) by April 25th of their junior year (for May graduates) or November 20th of their junior year (for December graduates).

* Study Abroad

Concentrators may apply up to two courses per semester of study abroad toward their MES concentration requirements, with a maximum of four courses (for two semesters abroad). Students must meet with their advisors and have them sign off on their specific course selections prior to embarking upon their program. Study abroad transfer credits may only be

applied toward fulfilling elective and language requirements. Study abroad transfer credit may not be used to fulfill foundational course requirements.

** Dual Concentrators

Middle East Studies concentrators may apply up to two courses that fulfill MES concentration requirements toward fulfilling the requirements of another concentration. Language courses do not count toward this two-course limit on overlapping courses.

Honors

Students may graduate with honors in MES by completing an undergraduate honors thesis in MES. To be eligible for honors, students will have earned an 'A' (or 'S' with distinction) in the majority of courses for the concentration and will have submitted a thesis prospectus and secured a faculty advisor by the end of their junior year. Honors theses are substantial research projects driven by a deep interest in engaging with a selected topic of study. They require a time commitment and coordination between students, advisors, and the DUS to ensure completion. Honors students will undertake two semesters of thesis writing in their senior year, the first in a thesis writing workshop (MES 1971) supervised by the DUS or other MES faculty, followed by a second semester of Independent Study (MES 1970) to complete the thesis under the guidance of the thesis advisor. This is typically done during senior year and will raise the total number of required courses to 13.

Modern Culture and Media

Modern Culture and Media (MCM) is an interdisciplinary concentration that explores the ties between media and broader cultural and social formations. We stress creative thinking and critical production: comparative analysis and theoretical reflection, as well as work that integrates practice and theory. We thus bring together aspects of modern culture that are normally separated by departmental structures such as film and media studies, fine art, literature, literary arts and philosophy. This concentration offers the student a range of possible specializations. A student might decide to focus on the critical study and production of a certain type or combination of media (print, photography, sound recording, cinema, video, television, and digital media); or they might focus on certain cultural, theoretical and/or social formations (for example, gender/sexuality in post-Cold war television, postcolonial theory and film, the changing form of the novel, theories of subjectivity and ideology, video games and theories of representation).

These paths are united by a commitment to critical thinking/practice: rather than reproducing conventions, MCM concentrators learn how conventions emerge, what work they do, and explore ways to change them.

Theory Based

Theory Based concentrators may choose to study a particular historical moment, a medium, or a mode of textual production, in combination with theoretical studies that examine the categories of cultural analysis: for example, the distinction between high and low culture. Examples of areas of interest include but are not limited to film, gender/sexuality, digital media, television, post-coloniality, the novel, modern thought, the modern arts, sound, and theories of ideology and subjectivity. Productive work in some modern medium or textual mode is encouraged for all concentrators. MCM's approach to production recognizes the inextricable link between theory and practice, and the possibility of a fruitful complicity between them. Production, in the sense defined here, is a theoretically informed sphere or practice, one within which acknowledged forms of cultural creation are tested and extended in close complementarity with the analyses conducted elsewhere in MCM.

Theory Based consists of 11 courses.

Core courses

MCM 0150	Text/Media/Culture: Theories of Modern Culture and Media	1
Select two of the following: ¹		2
MCM 0220	Print Cultures: Textuality and the History of Books	
MCM 0230	Digital Media	

MCM 0240	Television Studies	
MCM 0250	Visuality and Visual Theories	
MCM 0260	Cinematic Coding and Narrativity	
MCM 1110	The Theory of the Sign	
Additional courses		5
One must be an upper level course from the MCM 1200 series		
Two must be senior seminars from the MCM 1500 or MCM 1700 series		
Two must be at any level in MCM above MCM 0260		
Three additional courses. These courses must be in MCM or in related departments. ²		3
Total Credits		11

¹ No more than three courses from this list may count for concentration requirements.

² The specific courses must be approved by an MCM concentration advisor as part of a coherent program of study.

Other Requirements:

1. Focus Area: Of the 11 courses required for the concentration, at least 3 courses must be in a focus area approved by a concentration advisor. These courses may be MCM courses, related courses, or a combination of the two, and they must represent a focus on some aspect of modern literature, theory, media, art or culture. Examples of possible focus areas are: mass/popular culture, gender/sexuality, language/representation/subjectivity, narrative, digital media, film, modern thought, television, the modern arts, the novel, colonialism and post-colonialism. This is **not** an exhaustive list. Production courses may be in the focus area but must be in addition to the minimum 3 courses.
2. Production: Work in production is encouraged but not required for Theory Based concentrators. Of the 11 courses required for concentration, as many as 3 may be in production. These may be production courses offered by MCM (film, video, digital media) or courses in creative writing, painting, photography, journalism, etc., provided they do not bring the total number of concentration courses taken outside MCM to more than 3.

Honors:

The honors program in MCM is designed for students who wish to integrate their skills in a special project. Students who qualify for Honors in the Theory Based track are eligible to apply to do an Honors project or thesis. Students should submit a letter of intent in their 6th semester, and a formal proposal by the first day of their 7th semester. Applications will be screened by the MCM Honors Committee. (Application forms are available in the MCM office.) If approved, a student must then register for MCM 1980 (taken in the 7th semester), a one-credit course which can count towards their Focus Area requirements, and MCM 1990 (taken in the 8th semester), a one-credit thesis course in which they complete the Honors project/thesis.

Practice Based

The Practice Based concentration combines production courses with the critical study of the cultural role of practice. It aims to engage students in the analysis of theories of production elaborated within philosophical, artistic, and technological traditions, while encouraging them to produce works that interrogate these traditions.

Practice Based consists of 11 courses:

Two core courses:

MCM 0150	Text/Media/Culture: Theories of Modern Culture and Media	1
Select one MCM Introductory Practice course (MCM0700 series). Introductory practice courses in other disciplines may fulfill this requirement and should be selected in consultation with the concentration advisor. Possible disciplines include Literary Arts, Music, Theatre Arts and Performance Studies, Visual Art.		1
MCM 0700A	Introduction to the Production Image	

MCM 0710A	Introduction to Filmic Practice: Time and Form	
MCM 0730A	Introduction to Video Production: Critical Strategies and Histories	
MCM 0750A	Art in Digital Culture	
One additional course from the following:		1
MCM 0220	Print Cultures: Textuality and the History of Books	
MCM 0230	Digital Media	
MCM 0240	Television Studies	
MCM 0250	Visuality and Visual Theories	
MCM 0260	Cinematic Coding and Narrativity	
MCM 1110	The Theory of the Sign	
Three additional courses from the MCM 1200 or MCM 1500 series		3
Four practice courses selected in consultation with an advisor. ²		4
One Senior Seminar from the MCM 1700 series or other equivalent in production		1
Total Credits		11

¹ At least one must be from the MCM 1500 series.

² Courses can be in any medium or combinatory sequence of media from the following departments: Modern Culture and Media, Visual Art, Music, Literary Arts, Theatre Arts and Performance Studies, Computer Science, Engineering, supplemented by approved courses at Rhode Island School of Design and study abroad. This list is not exhaustive.

Honors:

The honors program in MCM is designed for students who wish to integrate their skills in a special project. Students who qualify for Honors in the Practice Based track are eligible to apply to do an Honors project or thesis. Students should submit a letter of intent in their 6th semester, and a formal proposal by the first day of their 7th semester. Applications will be screened by the MCM Honors Committee. (Application forms are available in the MCM office.) If approved, a student must then register for MCM 1980 (taken in the 7th semester), a one-credit course which can count towards their Focus Area requirements, and MCM 1990 (taken in the 8th semester), a one-credit thesis course in which they complete the Honors project/thesis.

Music

The concentration in Music integrates theory, history, ethnomusicology, technology, composition, and performance. Upon completing two foundational courses in theory and musicianship, concentrators have the flexibility to craft an intellectual pathway based on their particular interests and goals. The curriculum is supported by the Orwig Music Library, a state-of-the-art facility with holdings of over 40,000 books and scores and an equal number of sound and video recordings. Concentrators are encouraged to participate in one or more of the departmentally sponsored performing organizations: Chorus, Orchestra, Jazz Band, Wind Symphony, Chamber Music Performance, Electroacoustic Ensemble, Old-time String Band, Javanese Gamelan, or Ghanaian Drumming.

Concentrating in Music

If you choose Music as a Concentration*, you will be expected to achieve well-rounded training as a musician, regardless of the genre(s) in which you specialize. This training is manifested in the following general components:

Fundamental skills are important for any musician, and therefore a minimum of two music theory/musicianship courses are required of all students who wish to Concentrate. Students have the opportunity to enter into various theory courses according to their interest and experience.

Historical and cultural knowledge of music is another key area from which Concentrators are required to complete courses. These courses may be studies of Western or non-Western forms of music.

The creation of music is also central to the Music Concentration. Students are encouraged to make music in a number of ways, including

participation in ensembles, solo performance, composition, music production, and/or conducting.

Music faculty will be available to advise students on shaping the flexible parts of their Concentration and achieving their goal at Brown.

Concentration Requirements:

Music Theory

- Two courses in music theory, which may include one 400-level and one 500-level course, or two 500-level courses.

MUSC 0400A	Introduction to Music Theory	1
MUSC 0400B	Introduction to Popular Music Theory and Songwriting	1
MUSC 0550	Theory of Tonal Music I	1
MUSC 0560	Theory of Tonal Music II	1
MUSC 0570	Jazz and Pop Harmony	1

Music Scholarship, Production and Advanced Theory

A minimum of four upper-level courses above 1000, must include:

- One upper-level course in musicology or ethnomusicology
- Any three upper-level courses, including graduate-level courses

Additional Electives (according to student interest)

Four additional elective courses, may include:

- Up to four half-credit courses in performance - AMP music instruction and/or Ensemble Participation (2 credits)
- Up to two courses outside of the department
- One music course below the 100 level

Senior Project

All music concentrators will choose a culminating experience for their senior year, either a capstone project or honors project. This may take the form of a performance, scholarly study, or original creative work. All students will have a primary advisor for their Senior Project. The work may be done independently of a course for credit, as an independent study, or within the framework of an existing course.

Additional Notes

All concentration substitutions and/or exceptions must be approved by the concentration advisor in consultation with the Director of Undergraduate Studies. A substitution or exception is not approved until specified in writing in the student's concentration file in ASK.

Honors in Music (optional)

Faculty Rules stipulate "Brown University shall, at graduation, grant honors to students whose work in a field of concentration has demonstrated superior quality and culminated in an honors thesis of distinction."

In order to apply for Honors in Music, at least half of the student's coursework in Music must be As or Ss with Distinction. Please note that Brown's transcripts do not indicate whether a student receives distinction in a S/NC course. ("S*" indicates that a course is mandatory S/NC.) This information must be obtained from the course instructor or the Registrar's Office.

Departmental Procedures:

The Department welcomes a variety of projects leading to Honors in Music. Theses in Music may involve research in musicology, ethnomusicology, or theory; performance; composition, computer music, studio production, or instrument design; or combinations of the preceding categories. Creative and performance projects should be accompanied by pertinent research and/or documentation. Students are encouraged to meet with prospective honors committee members in the junior year to craft a thesis project that is appropriate in scope.

NOTE: the term HONORS COMMITTEE refers to a student's honors thesis advisor and readers.

A student wishing to propose a project should proceed as follows:

1. An honors candidate must secure a faculty advisor and a second reader to serve as an honors committee during the third to last (typically sixth) semester. A declaration of intent (<https://forms.gle/VtceLXtC6waDs5do9/>) (Brown login required), consisting of a brief description of the proposed honors project and the names

of the committee members, must be submitted to the Director of Undergraduate Studies by the last day of reading period in the third to last semester.

2. At the beginning of the penultimate (typically seventh) semester the student will submit a formal proposal describing the project to the honors committee for approval. Examples of recent honors proposals are available here (<https://drive.google.com/open?id=1aAScAWyJHTKplvJQoi8obPal0Fj1tZKg>) (Brown login required). The proposal must receive committee approval and be given to the department's Academic Student Affairs Coordinator for distribution to the full faculty by the first day of the first full week of classes of the semester. The department faculty will vote on the proposals at the next regularly scheduled meeting. Decisions will be based on the student's overall performance in music courses and on the quality of the proposal. The advisor will notify the student of the faculty's decision.
3. It is expected that honors projects will normally take two semesters to complete. Students pursuing honors may choose to register for MUSC 1970 in the Fall and/or in the Spring. If not enrolled in an independent study, the student should meet with the advisor at the beginning of the semester to make a plan for regular meetings. The student is advised to meet with the secondary reader at least twice each semester before the thesis is formally submitted. By finals week of the penultimate semester, honors candidates must demonstrate substantial progress by submitting to the honors committee a partial draft of a paper or composition or, for performance projects, by playing a significant portion of the programmed repertoire. Failure to make sufficient progress may result in the termination of the honors project.
4. Last semester deadlines: Honors candidates must submit a complete draft to their honors committee by the first day of classes following the eighth week of the last semester. The committee will comment on the project and suggest revisions. Revisions must be completed, and the final project submitted to the honors committee by the first day of classes two weeks later. In the case of performance projects, this means that both the public performance and the scholarly component must have been completed by this date. In the case of research projects, all figures, notes, bibliography, and other critical apparatus must have been completed. Failure to make the deadline may result in the forfeiting of honors by the candidate, though the student may complete the project as a capstone project.
5. The honors committee will confer to determine their views on their projects. If the second reader is outside Music, the advisor may solicit a written recommendation about the merits of the project.
6. The advisor will deliver a copy of the completed thesis to the department's Academic Student Affairs Coordinator by the middle of the eleventh week of the last semester so that it may be made available for review by the full faculty.
7. During the twelfth week of the last semester, the advisor will report on the project at a meeting of the Department faculty for a vote. The advisor will notify the student of the faculty's decision.
8. Honors recipients will present their projects at a Department of Music Convocation held once annually during reading period in the Spring Semester.

Neuroscience

Neuroscience is an interdisciplinary field that seeks to understand the functions and diseases of the nervous system. It draws on knowledge from neurobiology as well as elements of psychology and cognitive science, and mathematical and physical principles involved in modeling neural systems. Through the Neuroscience concentration, students develop foundational knowledge through courses in biology, chemistry, and mathematics as well as three core courses in neuroscience. They are also required to develop facility with research methodologies (through courses in statistics and laboratory methods) before moving into specific topics in the field (e.g., visual physiology, neurochemistry and behavior, and synaptic transmission and plasticity). Members of the Neuroscience faculty are affiliated with the Carney Institute for Brain Science, a multidisciplinary program that promotes collaborative research about the brain. Prospective

concentrators should contact neurowundergrad@brown.edu in order to have a faculty advisor assigned to them.

Standard program for the Sc.B. degree

The concentration combines a general science background with a number of specific courses devoted to the cellular, molecular, and integrative functions of the nervous system. The concentration allows considerable flexibility for students to tailor a program to their individual interests. Elective courses focus on a variety of areas including molecular mechanisms, cellular function, sensory and motor systems, neuropharmacology, learning and memory, animal behavior, cognitive function, bioengineering, theoretical neuroscience and computer modeling.

You may find this following form useful for mapping out your courses, be sure to use it before meeting with your concentration advisor for the first time: [link to course plan worksheet PDF (http://bulletin.brown.edu/the-college/concentrations/neur/NeuroCoursePlanWorksheet_Fillable.pdf)]

The concentration in neuroscience leads to an Sc.B. degree. The following courses, or their equivalent, are required for the degree. Keep in mind that there are multiple ways to fulfil the various requirements and your concentration advisor can help you go through your options and optimize your course of study:

Background Courses:

MATH 0090	Single Variable Calculus, Part I ((only needed as a prerequisite for MATH 10))	1
MATH 0100	Single Variable Calculus, Part II ((or equivalent))	1
PHYS 0030	Basic Physics A (Mechanics *see NOTE)	1
PHYS 0040	Basic Physics B (Electromagnetism)	1
BIOL 0200	The Foundation of Living Systems ((or placement test))	1
CHEM 0330	Equilibrium, Rate, and Structure	1
CHEM 0350	Organic Chemistry I	1

Note: ENGN 0030 may be used instead of PHYS 0030, but ENGN 0040 is NOT equivalent to PHYS 0040.

Core Concentration Courses:

NEUR 0010	The Brain: An Introduction to Neuroscience	1
NEUR 1020	Principles of Neurobiology	1
NEUR 1030	Neural Systems	1

One critical reading course

NEUR 1440	Mechanisms and Meaning of Neural Dynamics	1
NEUR 1510	Neurotechnology: Molecular Tools and Methods for Neurobiology	
NEUR 1530	Communication In the Brain: What We Know and How We Know It	
NEUR 1560	Developmental Neurobiology	
NEUR 1660	Neural Computation in Learning and Decision-Making	
NEUR 1970	Independent Study (*Two Semesters)	
BIOL 1100	Cell Physiology and Biophysics	
BIOL 1180	Comparative Animal Physiology	
BIOL 1190	Synaptic Transmission and Plasticity	
CLPS 1400	The Neural Bases of Cognition	
CLPS 1760	The Moral Brain	
PHP 1890	The Craving Mind	
1930/40	Topics in Neuroscience	

NOTE: Critical reading courses are small discussion based courses, with around 20 students, with a focus on primary literature around a neuroscience related topic. Other courses not listed here could also fulfil this requirement, please check with your concentration advisor.

One statistics course

1

PHP 1501	Essentials of Data Analysis
PHP 1510	Principles of Biostatistics and Data Analysis
PHP 2510	Principles of Biostatistics and Data Analysis
APMA 0650	Essential Statistics
APMA 1650	Statistical Inference I
CLPS 0900	Statistical Methods
SOC 1100	Introductory Statistics for Social Research
BIOL 0495	Statistical Analysis of Biological Data
EDUC 1230	Applied Statistics for Ed Research and Policy Analysis

One lab methods course **1**

NEUR 0680	Introduction to Computational Neuroscience
NEUR 1440	Mechanisms and Meaning of Neural Dynamics
NEUR 1600	Experimental Neurobiology
NEUR 1630	Big Data Neuroscience Ideas Lab
NEUR 1640	Behavioral Neurogenetics Laboratory
NEUR 1650	Structure of the Nervous System
NEUR 1660	Neural Computation in Learning and Decision-Making
NEUR 1670	Neuropharmacology and Synaptic Transmission
NEUR 1680	Computational Neuroscience
NEUR 1970	Independent Study

*Two Semesters of NEUR1970 can be used to fulfill one critical reading, lab, or elective requirement

CLPS 1190	Techniques in Physiological Psychology
CLPS 1194	Sleep and Chronobiology Research
CLPS 1490	Functional Magnetic Resonance Imaging: Theory and Practice
CLPS 1491	Neural Modeling Laboratory
CLPS 1492	Computational Cognitive Neuroscience
BIOL 0800	Principles of Physiology
BIOL 1880	Comparative Biology of the Vertebrates

Four electives related to neuroscience **4**

Four courses that will enhance your understanding of the field of neuroscience. While electives need not be from the neuroscience department, the following list are common courses taught by Neuroscience and other departments that are often used as electives. We encourage students to explore the broader course catalog and consult with their concentration advisor to explore the full range of electives, rather than limiting themselves to this list:

NEUR 0680	Introduction to Computational Neuroscience
NEUR 1040	Introduction to Neurogenetics
NEUR 1065	Biology of Hearing
NEUR 1440	Mechanisms and Meaning of Neural Dynamics
NEUR 1510	Neurotechnology: Molecular Tools and Methods for Neurobiology
NEUR 1530	Communication In the Brain: What We Know and How We Know It
NEUR 1540	Neurobiology of Learning and Memory
NEUR 1560	Developmental Neurobiology
NEUR 1600	Experimental Neurobiology
NEUR 1630	Big Data Neuroscience Ideas Lab
NEUR 1650	Structure of the Nervous System

NEUR 1660	Neural Computation in Learning and Decision-Making
NEUR 1670	Neuropharmacology and Synaptic Transmission
NEUR 1740	The Diseased Brain: Mechanisms of Neurological and Psychiatric Disorders
NEUR 1970	Independent Study

*Two Semesters of NEUR1970 can be used to fulfill one critical reading, lab, or elective requirement

NEUR 2110	Statistical Neuroscience
All NEUR 1930/1940	Seminar Course
CLPS 0120	Introduction to Sleep
CLPS 0400	Cognitive Neuroscience
CLPS 1150	Memory and the Brain
CLPS 1180B	Animal Languages
CLPS 1193	Laboratory in Genes and Behavior
CLPS 1291	Computational Methods for Mind, Brain and Behavior
CLPS 1400	The Neural Bases of Cognition
CLPS 1420	Cognitive Neuropsychology
CLPS 1478	Translational Models of Neuropsychiatric Disorder
CLPS 1480C	Cognitive Control Functions of the Prefrontal Cortex
CLPS 1480H	Disorders of Memory
CLPS 1490	Functional Magnetic Resonance Imaging: Theory and Practice
CLPS 1492	Computational Cognitive Neuroscience
CLPS 1495	Affective Neuroscience
CLPS 1560	Visually-Guided Action and Cognitive Processes
CLPS 1561	The Nature of Attention
CLPS 1570	Perceptual Learning
CLPS 1580E	Perception, Attention, and Consciousness
CLPS 1620	Developmental Cognitive Neuroscience
CLPS 1760	The Moral Brain
CLPS 1820	Language and the Brain
CLPS 1950	Deep Learning in Brains, Minds and Machines
BIOL 1100	Cell Physiology and Biophysics
BIOL 1110	Topics in Signal Transduction
BIOL 1155	Hormones and Behavior
BIOL 1260	Physiological Pharmacology
BIOL 1545	Human Genetics and Genomics
ENGN 1220	Neuroengineering
PHP 1890	The Craving Mind
COST 1020	Cognitive Neuroscience of Meditation

List 2: Selected common non-neuro courses (no more than 2) - student must be able to justify why it enhances their understanding of Neuro

BIOL 0470	Genetics
BIOL 0800	Principles of Physiology
BIOL 1050	Biology of the Eukaryotic Cell
BIOL 1540	Molecular Genetics
BIOL 1810	21st Century Applications in Cell and Molecular Biology
CLPS 0950	Introduction to programming
CLPS 1195	Life Under Water in the Anthropocene
CLPS 1500	Perception and Action
CSCI 0111	Computing Foundations: Data
ENGL 1900Z	Neuroaesthetics and Reading

PHIL 1770	Philosophy of Mind
PHP 1540	Alcohol Use and Misuse
STS 1700P	Neuroethics
TAPS 1281Z	Arts and Health: Practice

Completing the Concentration Research Requirement As with other ScB concentrations, neuroscience concentrators are required (beginning with the class of 2023) to do the equivalent of one semester of independent study, research or design. This is a chance for the student to explore and apply the concepts that they have learned in their concentration courses. The following are ways in which this research requirement can be met. After consulting with your concentration advisor, be sure to include how you will fulfill your research requirement in the appropriate box within ASK: 1. Enrolling in independent study courses (NEUR 1970, CLPS 1970/80 or BIO 1950/60) for work in a lab. Keep in mind to count this towards your concentration two semesters or one semester and a summer are required. 2. Enrolling in independent study (NEUR 1970) to work with a faculty member to explore an integrative topic related to neuroscience. See our section on independent study for more information. 3. Enrolling in a course-based research experience, also known as a CURE course. Current related CURE courses are NEUR 1630, CLPS 1195, CLPS 1591, but there might be new ones coming down the pipeline. 4. Participating in a structured summer research program (eg. an UTRA or an REU) that is equivalent in scope and scale as would be pursued during a semester of independent research. 5. Participating in a research-focused Fall or Spring UTRA. 6. Pursue a design or independent research project related to neuroscience that could be associated with a different course. 7. Anyone writing an honors thesis automatically fulfils the research requirement, in order to document your research requirement, please describe your plan in your Course Plan Worksheet and in ASK, be sure to discuss it with your concentration advisor to make sure it is appropriate. Honors: Honors in Neuroscience requires a thesis and presentation based on a research project, and quality grades in the concentration. Guidelines and information on faculty research as well as details about declaring Honors are available in the Undergraduate Neuroscience Page [<https://www.brown.edu/academics/neuroscience/undergraduate-concentration>].

Total Credits

17

¹ Independent study and honors research projects are encouraged.

Philosophy

The Philosophy concentration offers courses covering subjects from ethics to the philosophies of science and literature. It also provides survey courses on various periods in the history of philosophy. Concentrators can expect to acquire a broad competence in philosophy itself, including ancient European and early modern philosophy, logic, ethics or political philosophy, and epistemology or metaphysics. The concentration also teaches, and stresses, skills in critical thinking and writing. There is also a related, but separate concentration in physics and philosophy.

Standard Concentration

10 courses total, of which no more than one may be below PHIL 0100, and at least three must be at or above PHIL 0990.

Five Area Requirements:

One course in Ancient Philosophy, e.g.	1
PHIL 0110	Ancient Greek Philosophy
PHIL 1110	Plato
PHIL 1120	Aristotle
One course in Early Modern Philosophy, e.g.	1
PHIL 0210	Early Modern Philosophy
PHIL 1210	Locke, Berkeley, Hume and Others
PHIL 1220	17th Century Continental Rationalism

PHIL 1230	Kant: The Critique of Pure Reason
One course in Epistemology or Metaphysics, e.g.	1
PHIL 1735	Metaphysics
PHIL 1705	Epistemology
PHIL 1800	Philosophy of Mind
PHIL 1850	Philosophy of Language
One course in Ethics or Political Philosophy, e.g.	1
PHIL 0410	Moral Philosophy
PHIL 0430	Ethical Themes in the Contemporary American Short Story
PHIL 0560	Political Philosophy
PHIL 1470	Ethics in the Novel
PHIL 1430	Moral Theories
PHIL 1440	The Nature of Morality
One course in Logic, e.g.	1
PHIL 0640	Logic
PHIL 1630	Mathematical Logic
PHIL 1635	Advanced Deductive Logic

One Seminar: either an undergraduate seminar from the 099X series, a course numbered 1XXX that is designated as a seminar, or a graduate seminar numbered 2XXX.

Four additional courses 4

Total Credits 10

Note:

Up to two appropriate courses from departments other than Philosophy department may be included among the ten courses required for the Concentration. Appropriate courses must be sufficiently philosophical. Courses listed on the Philosophy XLIST on Courses@Brown will always count; students can petition for other courses to be counted. Courses from other departments may not be counted toward fulfillment of the area requirements.

Capstone Requirement

Every philosophy concentrator must complete a capstone project. The capstone will be normally be completed in a student's last undergraduate year, and it should make use of a significant portion of what the student has learned in their undergraduate education, broadly interpreted. There are three options for the capstone course in philosophy:

1. A Senior Thesis: A substantial paper, typically about 40-60 pages, that is researched and written over the course of the senior year under the supervision of a faculty advisor. Typically, students writing a thesis will enroll in PHIL 1995, Senior Thesis, both semesters. (In order for a student to be permitted to write a Senior Thesis, they must have completed at least six courses in the concentration and have received a grade either of A or of Satisfactory with Distinction in more than half of them.)
2. An Independent Study: A one-semester reading course (PHIL 1990) under the direction of a faculty advisor, leading to a substantial research paper, typically 15-25 pages.
3. A Special Project undertaken in connection with a philosophy course at or above 0990: Examples include a more-in-depth final paper than is otherwise required or a presentation of some of the material to the class, though students are encouraged to make creative proposals, as well. The specific project should be discussed with, and must be approved by, the instructor of the relevant course.

Every philosophy concentrator must file the Declaration of Capstone Project by the end of shopping period in their final semester. For further details on the Honors Thesis and Capstone Requirement, see "Senior Capstone" and "Senior Thesis" on the Department's website.

Honors Requirements:

To qualify for Honors, a student must:

1. Have grades of either A or Satisfactory with Distinction in more than half their philosophy courses and any courses from outside the department that they are counting towards the concentration.
2. Successfully complete a Senior Thesis that, in the judgment of the advisor and second reader (to be appointed by the Director of Undergraduate Studies), is worthy of an Honors recommendation.

Physics

Physics is the scientific study of the fundamental principles governing the behavior of matter and the interaction of matter and energy. Mathematics is used to describe fundamental physical principles, the behavior of matter, and the interactions of matter and energy. As the most fundamental of sciences, physics provides a foundation for other scientific fields as well as the underpinnings of modern technology. The Physics department is unique because of the breadth of its faculty expertise and research, and the relatively intimate size of its classes above the introductory level. Physics concentrators may choose to pursue either the A.B. or the more intensive Sc.B. degree. Course work on either path covers a broad base of topics (for example, electricity and magnetism, classical and quantum mechanics, thermodynamics, and statistical mechanics). The Sc.B. degree requires additional advanced topics as well as a senior thesis project.

Standard concentration for the A.B. degree

Select one of the following Series: 2

PHYS 0030	Basic Physics A
or PHYS 0050	Foundations of Mechanics
or PHYS 0070	Analytical Mechanics
PHYS 0040	Basic Physics B
or PHYS 0060	Foundations of Electromagnetism and Modern Physics
or PHYS 0160	Introduction to Relativity, Waves and Quantum Physics

Take each of the following: 5

PHYS 0470	Electricity and Magnetism
PHYS 0500	Advanced Classical Mechanics
PHYS 0560	Experiments in Modern Physics
PHYS 1410	Quantum Mechanics A
PHYS 1530	Thermodynamics and Statistical Mechanics (One additional 1000-level course or a mathematics course beyond the introductory level.)

One additional 1000-level course or a mathematics course beyond the introductory level. 1

Total Credits 8

Standard program for the Sc.B. degree

Prerequisites:

Select one of each: 2

PHYS 0050	Foundations of Mechanics
or PHYS 0070	Analytical Mechanics
PHYS 0060	Foundations of Electromagnetism and Modern Physics
or PHYS 0160	Introduction to Relativity, Waves and Quantum Physics

Select one of the following: 1

MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)
or MATH 0090	Single Variable Calculus, Part I
or MATH 0100	Single Variable Calculus, Part II

Program: 8

PHYS 0470	Electricity and Magnetism
PHYS 0500	Advanced Classical Mechanics
PHYS 0560	Experiments in Modern Physics

PHYS 1410	Quantum Mechanics A
PHYS 1420	Quantum Mechanics B
PHYS 1510	Advanced Electromagnetic Theory
PHYS 1530	Thermodynamics and Statistical Mechanics
PHYS 1560	Modern Physics Laboratory
Take one additional 1000 or 2000 level Physics course or upper level course in related fields of science chosen by the student with the agreement of his or her advisor.	1
Four Mathematics courses beyond MATH 0190 or 0090, 0100 including choices from Applied Mathematics ¹	4
PHYS 1990	Senior Conference Course ²

Total Credits 17

¹ In addition, courses in computer programming are recommended.

² A senior thesis is required. This is to be prepared in connection with PHYS 1990 under the direction of a faculty supervisor. The topic may be in related department or of interdisciplinary nature. In any event, a dissertation must be submitted.

Astrophysics Track for the Sc.B. degree

Prerequisites:

Select one of each: 2

PHYS 0050	Foundations of Mechanics
or PHYS 0070	Analytical Mechanics
PHYS 0060	Foundations of Electromagnetism and Modern Physics
or PHYS 0160	Introduction to Relativity, Waves and Quantum Physics

PHYS 0270 Astronomy and Astrophysics 1

Select one of the following Series: 2

MATH 0170 & MATH 0180	Single Variable Calculus, Part II (Accelerated) and Multivariable Calculus
MATH 0190 & MATH 0200	Single Variable Calculus, Part II (Physics/Engineering) and Multivariable Calculus (Physics/Engineering)
MATH 0350	Multivariable Calculus With Theory (or equivalent)

PHYS 0470 Electricity and Magnetism 1

Program:

MATH 0520	Linear Algebra
or MATH 0540	Linear Algebra With Theory
or PHYS 0720	Methods of Mathematical Physics

Select one of the following Math courses: 1

APMA 0330	Methods of Applied Mathematics I
APMA 0340	Methods of Applied Mathematics II
APMA 0350	Applied Ordinary Differential Equations
APMA 0360	Applied Partial Differential Equations I
MATH 1110	Ordinary Differential Equations
MATH 1120	Partial Differential Equations

PHYS 0500 Advanced Classical Mechanics 1

PHYS 0560 Experiments in Modern Physics 1

PHYS 1410 Quantum Mechanics A 1

PHYS 1530 Thermodynamics and Statistical Mechanics 1

Three of the following: 3

PHYS 1100	General Relativity
PHYS 1250	Stellar Structure and the Interstellar Medium
PHYS 1270	Extragalactic Astronomy and High-Energy Astrophysics

PHYS 1280	Introduction to Cosmology	
Two additional 1000- or 2000-level courses in physics or a related field which are not listed as requirements.		2
PHYS 1990	Senior Conference Course ¹	1
Total Credits		18

¹ A senior thesis is required. This is to be prepared in connection with under the direction of a faculty supervisor. The topic may be in a related department or of interdisciplinary nature. In any event, a dissertation must be submitted.

Biological Physics Track for the Sc.B. degree

Foundations of Physics

PHYS 0070	Analytical Mechanics	1
or PHYS 0050	Foundations of Mechanics	
or ENGN 0040	Engineering Statics and Dynamics	
PHYS 0160	Introduction to Relativity, Waves and Quantum Physics	1
or PHYS 0060	Foundations of Electromagnetism and Modern Physics	
PHYS 0470	Electricity and Magnetism	1
PHYS 0500	Advanced Classical Mechanics	1
PHYS 1410	Quantum Mechanics A	1
PHYS 1530	Thermodynamics and Statistical Mechanics	1
Select one of the following Series: ¹		1-2

Series A

PHYS 0720	Methods of Mathematical Physics

Series B

Select one of the following:

APMA 0330	Methods of Applied Mathematics I
APMA 0350	Applied Ordinary Differential Equations
MATH 1110	Ordinary Differential Equations

And select one of the following:

MATH 0180	Multivariable Calculus
MATH 0200	Multivariable Calculus (Physics/Engineering)
MATH 0350	Multivariable Calculus With Theory
MATH 0520	Linear Algebra
MATH 0540	Linear Algebra With Theory

Basic Biology and Chemistry

BIOL 0200	The Foundation of Living Systems (or placement out of BIOL 0200)	1
BIOL 0500	Cell and Molecular Biology	1
CHEM 0330	Equilibrium, Rate, and Structure	1

Advanced Biophysical Topics and Techniques

PHYS 1610	Biological Physics	1
PHYS 1990	Senior Conference Course	1

Elective Courses (four chosen from the following list, with at least two 1000-level courses, or additional courses approved by the concentration advisor): **4**

APMA 0360	Applied Partial Differential Equations I
APMA 0410	Mathematical Methods in the Brain Sciences
APMA 0650	Essential Statistics
APMA 1070	Quantitative Models of Biological Systems
APMA 1080	Inference in Genomics and Molecular Biology
BIOL 0280	Biochemistry
BIOL 0470	Genetics
BIOL 1050	Biology of the Eukaryotic Cell
BIOL 1200	Protein Biophysics and Structure

BIOL 1270	Advanced Biochemistry
BIOL 1870	Techniques and Clinical Applications in Pathobiology
CHEM 0350	Organic Chemistry I
CHEM 0360	Organic Chemistry II
MATH 0090	Single Variable Calculus, Part I
MATH 0170	Single Variable Calculus, Part II (Accelerated)
MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)
MATH 1620	Mathematical Statistics
MATH 1210	Probability
PHYS 0560	Experiments in Modern Physics
PHYS 1510	Advanced Electromagnetic Theory
PHYS 1560	Modern Physics Laboratory
PHYS 2620F	Selected Topics in Molecular Biophysics
PHYS 1990	Senior Conference Course ²

Total Credits **17-18**

¹ Select Series A alone or two from Series B as indicated.

² A senior thesis is required. This is to be prepared in connection with under the direction of a faculty supervisor. The topic may be in a related department or of interdisciplinary nature. In any event, a dissertation must be submitted.

Mathematical Physics Track for the A.B. degree

Prerequisites:

MATH 0090	Single Variable Calculus, Part I	1
or MATH 0100	Single Variable Calculus, Part II	
or MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	
PHYS 0050	Foundations of Mechanics	1
or PHYS 0070	Analytical Mechanics	

Mathematics Courses ¹

MATH 0180	Multivariable Calculus	1
or MATH 0200	Multivariable Calculus (Physics/Engineering)	
or MATH 0350	Multivariable Calculus With Theory	
MATH 0520	Linear Algebra	1
or MATH 0540	Linear Algebra With Theory	
MATH 1110	Ordinary Differential Equations	1
Select at least one of the following:		1
MATH 1060	Differential Geometry	
MATH 1120	Partial Differential Equations	
MATH 1210	Probability	

Physics Courses ¹

PHYS 0060	Foundations of Electromagnetism and Modern Physics	1
or PHYS 0160	Introduction to Relativity, Waves and Quantum Physics	
PHYS 0470	Electricity and Magnetism	1
PHYS 0500	Advanced Classical Mechanics	1
PHYS 0560	Experiments in Modern Physics	1
Select at least two of the following:		2
PHYS 1410	Quantum Mechanics A	
PHYS 1420	Quantum Mechanics B	
PHYS 1510	Advanced Electromagnetic Theory	
PHYS 1530	Thermodynamics and Statistical Mechanics	

PHYS 1560	Modern Physics Laboratory	
Total Credits		12

¹ Concentrators are required to take at least one course in mathematics and one in physics in each of their last two semesters.

Mathematical Physics Track for the Sc.B. degree

Prerequisites:

Select one of the following series: 2

PHYS 0050	Foundations of Mechanics	
or PHYS 0070	Analytical Mechanics	
PHYS 0060	Foundations of Electromagnetism and Modern Physics	
or PHYS 0160	Introduction to Relativity, Waves and Quantum Physics	

Select one of the following: 1-2

MATH 0190	Single Variable Calculus, Part II (Physics/Engineering)	
MATH 0090 & MATH 0100	Single Variable Calculus, Part I and Single Variable Calculus, Part II	

Required courses:

PHYS 0470	Electricity and Magnetism	1
PHYS 0500	Advanced Classical Mechanics	1
PHYS 0560	Experiments in Modern Physics	1
PHYS 1410	Quantum Mechanics A	1
PHYS 1530	Thermodynamics and Statistical Mechanics	1
MATH 0180 & MATH 0200	Multivariable Calculus and Multivariable Calculus (Physics/Engineering)	1-2
or MATH 0350	Multivariable Calculus With Theory	
MATH 0520	Linear Algebra	1
or MATH 0540	Linear Algebra With Theory	
or PHYS 0720	Methods of Mathematical Physics	
MATH 1460	Complex Analysis	1
Four additional 1000 or 2000 level Physics courses		4
Two additional 1000 or 2000 level Math courses		2
PHYS 1990	Senior Conference Course ¹	1

Total Credits 18-20

¹ A senior thesis is required. This is to be prepared in connection with under the direction of a faculty supervisor.

Physics and Philosophy

The Physics and Philosophy concentration is for students with a deep interest in physics who do not need to acquire the laboratory and computational skills of a professional physicist. The concentration allows students to grapple with computational problems and deepen their investigation of conceptual and epistemological issues. By the end of the program, concentrators possess an excellent conceptual understanding of the most philosophically interesting physics, relativity and quantum mechanics.

This concentration should prepare a student either for graduate study, especially in a history and philosophy of science (HPS) program, or for employment in science education or journalism. Other professions such as law and medicine will look favorably on such concentrators for having versatile interests and being able to master difficult material. The concentration may serve as an excellent preparation for a law school since physics and philosophy both exercise a rigorous approach to problems of immediate relevance to life but at the same time assume two complimentary and sometimes competing viewpoints.

Advising

Concentration advisors from the Departments of Physics and Philosophy will guide students working towards the A.B. degree.

Curriculum

The curriculum builds around the fields of physics that have had the biggest impact on philosophy, especially Quantum Physics, and the fields of philosophy most relevant for physics, such as Epistemology, Metaphysics and Philosophy of Physics. It is strongly recommended that students complete at least one relevant history course.

There are 11 required courses (5 in Physics, 5 in Philosophy or History, one course in mathematics) and a final project. The choice of the courses is dictated by the following considerations. The field of physics with both deepest philosophical implications and deepest influence on the rest of physics is Quantum Mechanics. Thus, a 1000-level course in Quantum Mechanics or a closely related field such as Statistical Mechanics is indispensable. The second field of physics most relevant for the concentration is Relativity. This field touches upon and serves as a foundation for a broad list of subjects with major philosophical implications of their own, for example: PHYS 1170, PHYS 1280, PHYS 1510, PHYS 1100. This requires another 1000-level physics course in the concentration. 1000-level Physics courses cannot be taken without certain preliminary work, most importantly, PHYS 0470, which serves as a prerequisite for most higher-level physics courses and which relies in turn on PHYS 0160 or PHYS 0060. Another lower-level physics course is necessary for a student to develop familiarity with the tools which have been employed in producing the physics knowledge.

A natural introduction into philosophy of physics comes from a course in Early Modern Philosophy. To a large extent, Early Modern Philosophy was shaped by scholars who combined interest in philosophy and physics (e.g., Rene Descartes, Blaise Pascal, Gottfried Wilhelm Leibniz). The influence of the XVII century physics revolution on other central figures such as Kant is unquestionable. Early Modern Philosophy sets an intellectual stage for many subsequent developments in the Philosophy of Physics and directly addresses some of the most perplexing issues like the connection (or lack thereof) between physics and religion. The core of the Philosophy requirement involves two courses in Epistemology, Metaphysics and Philosophy of Science. One course in this field would not be sufficient due to its very broad nature. Students are strongly advised to take a relevant History course. This requirement can be substituted by an additional philosophy course to reflect interests of those students who want a deeper background in Epistemology, Metaphysics and Philosophy of Science or have other related interests such as Ancient Natural Philosophy.

In addition to the above philosophy courses, PHIL 0210 (Science, Perception, and Reality) serves as a gateway into the concentration. It may be substituted by other relevant courses such as PHYS 0100 (Flat Earth to Quantum Uncertainty: On the Nature and Meaning of Scientific Explanation).

A course in calculus is a prerequisite for most physics and some philosophy classes.

Required courses for the A.B. degree are listed below:

Physics Courses

Select one of the following introductory courses in Modern Physics: 1

PHYS 0060	Foundations of Electromagnetism and Modern Physics	
PHYS 0160	Introduction to Relativity, Waves and Quantum Physics	

One course in Special Relativity and Classical Field Theory: 1

PHYS 0470	Electricity and Magnetism	

Select one of the following in Methods of Experimental and Theoretical physics: 1

PHYS 0500	Advanced Classical Mechanics	
PHYS 0560	Experiments in Modern Physics	

Select one of the following in Quantum Mechanics and its applications 1

PHYS 1410	Quantum Mechanics A
PHYS 1530	Thermodynamics and Statistical Mechanics

One more 1000-level Physics course 1

Philosophy Courses

Select one of the following gateway courses: 1

PHIL 0210	Early Modern Philosophy
PHIL 0060	Modern Science and Human Values
PHIL 0640	Logic

Select one of the following courses in Early Modern Philosophy: 1

PHIL 0210	Early Modern Philosophy
PHIL 1210	Locke, Berkeley, Hume and Others
PHIL 1220	17th Century Continental Rationalism
PHIL 1230	Kant: The Critique of Pure Reason

Select two of the following courses in Epistemology, Metaphysics and Philosophy of Science: 2

PHIL 1705	Epistemology
PHIL 1735	Metaphysics
PHIL 1755	Philosophy of Science
PHIL 1775	Philosophy of Quantum Mechanics
PHIL 1780	Time

History Courses

Select one of the following courses in History of Science: ¹ 1

HIST 0522N	Reason, Revolution and Reaction in Europe
HIST 1825M	Science at the Crossroads
HIST 1976I	Imperialism and Environmental Change

Calculus

Select one of the following: 1

MATH 0180	Multivariable Calculus
MATH 0200	Multivariable Calculus (Physics/Engineering)
MATH 0350	Multivariable Calculus With Theory

Final Project

Select one of the following: 1

PHIL 1990	Independent Studies
PHYS 1990	Senior Conference Course
A course from the PHIL 0990 Senior Seminar series	
Any graduate seminar in Philosophy	

Total Credits 12

¹ Or one more Philosophy course.

Honors

Seniors wishing to earn honors by presenting a senior honors thesis should consult their concentration advisor during their sixth semester or at the start of the seventh semester concerning procedures and requirements. Students may earn honors by presenting a senior thesis judged to be of honors quality by two readers. In addition to completing the usual nonhonors requirements, the student should also have a grade point average of over 3.4 in physics, philosophy and history of science courses (of which at least five must be taken for a letter grade). Honors theses are usually prepared over a period of two semesters with an advisor from the Department of Physics or the Department of Philosophy.

Political Science

What is the legacy of slavery in the U.S.? Why are there so few women in Congress? How is radicalism in the Middle East changing? Why and how does democracy flourish? Just what is democracy? How do emotions shape our political behavior? What do war movies tell us about the USA? Would less government lead to more social justice? What is social justice?

How does smuggling (of drugs, guns, and people) reshape international relations? How do immigrants see the American Dream? What is the American dream?

Political science is about questions like these. You can grapple with every one of them — and many more — in the classrooms of the Brown Political Science Department. We study how people — nations, regions, cities, communities — live their common lives. How people solve (or duck) their common problems. How people govern themselves. How they think, talk, argue, fight, and vote. Students passionate about social challenges may also choose to pursue the Engaged Scholars Program, which allows them to connect theory and practice and gain hands-on experience working with community partners.

Ten courses are required overall from within the Department of Political Science. Eleven courses are required if the methods requirement is fulfilled with a course outside the department.

Students who declared the Political Science concentration prior to spring 2022, have the option to follow the old or the new concentration requirements. Students choosing to follow the old requirements can refer to those concentration requirements here: <https://bulletin.brown.edu/archive/2021-22/the-college/concentrations/pols/>.

Requirements:

Two introductory courses from the following: 2

POLS 0010	Introduction to the American Political Process
POLS 0110	Introduction to Political Thought
POLS 0200	Introduction to Comparative Politics
POLS 0400	Introduction to International Politics

One course in Political Theory taught by a Political Science theory professor ¹ 1

One methods course from Political Science: ² 1

POLS 0500	Foundations of Political Analysis
POLS 1600	Political Research Methods

One Senior Capstone course taken from the POLS 1820 / 1821 / 1822 / 1823 / 1824 / 1825 offerings, or the independent studies sequence POLS 1970 / 1971, or the honors sequence POLS 1910 / 1920. The capstone course must be taken at Brown during the senior year. However, with exceptional circumstances and with permission and approval of the course from the DUS, a non-Brown course may fulfill this requirement. 1

Five additional courses from within Political Science and/or taught by a Political Science faculty member ¹ 5

Total Credits 10

¹ Faculty information can be found here:

<https://polisci.brown.edu/people/faculty-by-subfieldhttps://polisci.brown.edu/people/faculty-by-subfield> (<https://polisci.brown.edu/people/faculty-by-subfield/>)

² A comparable course from an outside department (APMA 0650, ANTH 1940, CLPS 0900, ECON 1620, ECON 1630, EEPS 1320, PHP 1501, SOC 1100 or SOC 1120) may also be used. **If the methods requirement is fulfilled by an outside department course, it will not count as one of the 10 required courses.**

Honors

The Honors Program involves writing a year-long senior thesis in close conjunction with a faculty member. Students with an outstanding academic record apply in the late spring of their junior year. Students must complete the methods requirement prior to applying to the Honors program. During their senior year students complete an honors research project and take POLS 1910 and POLS 1920. POLS 1910 and POLS 1920 will count as **one** credit towards the ten required Political Science courses for the concentration.

Portuguese and Brazilian Studies

Portuguese and Brazilian Studies examines the Portuguese-speaking world, a large and diverse geographical and cultural area spread over five continents. Inhabited by two hundred fifty million people, this area includes Brazil, Continental and Insular Portugal, Lusophone Africa and Luso-America. Although concentrators are encouraged to examine the global nature of the Portuguese-speaking world, typically they focus on one of the specific geographical entities mentioned above. Concentrators will strengthen their Portuguese language skills (Portuguese 400 or the equivalent is a pre-requisite) and explore relevant Lusophone literature, education, history and social science. The concentration offers one program in language and literature and another that is interdisciplinary. Some concentrators study abroad in either Brazil or Portugal.

Requirements

POBS 0630 series	Topics in Portuguese-Speaking Cultures ¹	1-2
POBS 1030	Portuguese Stylistics: Advanced Language Study and Creative Writing	1
POBS 1800B	<i>Lusofonia</i> : National Identities and Transnational Challenges ²	1
or POBS 1800C	Constructing Men, Projecting Masculinity: Questioning Gender, Sex, and Sexuality in Brazil	
or POBS 1800E	The Brazilian Puzzle: Confronting the Post-Colonial Legacy	
or POBS 1800F	The Lusophone World and the Struggle for Modernity	

Five (or four, if two POBS 0630 courses were completed) additional courses from Portuguese and Brazilian Studies and/or related departments, such as History, Africana Studies, Political Science, Anthropology, Sociology, Music, and the Watson Institute. These courses are intended to develop students' specific interests within the concentration.

Total Credits 8

¹ Up to two courses in the POBS 0630 series may be counted toward concentration requirements, provided they are on different topics.

² Conducted in Portuguese, the seminar brings the concentrators together for an interdisciplinary consideration of key topics in the Portuguese-speaking world. A research paper written in Portuguese is required.

Senior Project (optional)

In addition to taking a POBS 1800-series concentration seminar, students may choose to complete a senior project attached to any course in Portuguese and Brazilian Studies and related fields, including the Concentration Seminar, the latter possibility to be made at the discretion of the instructor. The advisor of the senior project is the professor of the course from which the project stems. Projects are not limited to papers, and may include short documentaries, a visual arts project, or an oral history project.

Psychology

Psychology encompasses a range of phenomena and levels of analysis in pursuit of three goals: to deepen our understanding of cognitive and neural mechanisms of sensation, perception, learning, and emotion; to probe the biological and evolutionary foundations of behavior; and to clarify the social perception and assessment of individuals and groups. Students take foundation courses in the field's major sub-disciplines, including perception, cognition, developmental, behavioral neuroscience, and social psychology. Students also take a course in quantitative methods, and select from an array of seminars on specialized topics and laboratory courses that focus on research design and state-of-the-art techniques. The concentration in Psychology prepares students for careers in research, teaching, clinical psychology, business, law, and education, among others.

The A.B. concentration requires 12 courses. The Sc.B. concentration additionally requires 1 laboratory course and 4 approved science courses, totaling to 17 required courses.

Common Core

The introductory course, "CLPS 0010 Mind, Brain, and Behavior," surveys the broad territory of the scientific study of the mind as uniquely represented by our department. The territory includes neural processes, perception, learning, memory, emotion, language, social development, social judgment, personality, and mental illness. The course could be taken by students interested in the CLPS concentrations, as an introduction at the beginning of one's college career, or as an integration after having completed a number of specialized courses in a particular concentration. AP or IB Psychology credit cannot be used as a substitute for CLPS 0010.

Careers in Psychology and related fields requires familiarity with statistics. Therefore, the Psychology concentration requires a course in Quantitative Methods (CLPS 0900). CLPS 0900 is a prerequisite for research methods and laboratory courses, so concentrators should plan to take this course by their fourth semester. Students may substitute for CLPS 0900 a comparable statistics course taught in another department, with the approval of a Psychology concentration advisor. Consult with a concentration advisor for details. The department does not grant concentration credit for AP Statistics, regardless of score.

Another element in the Psychology concentration is a course on research methods. Research Methods and Design (CLPS 1900 or Research Methods CLPS 1901) is the preferred course for fulfilling this requirement.

This course builds on the introductory statistics course and exposes students to a variety of topics in the psychological sciences: to empirical methods (e.g., surveys, chronometry, eye tracking, brain imaging), to common designs (e.g., factorial experimental, correlational, longitudinal), to research ethics, and to best practices of literature review. Other CLPS laboratory courses can be used to fulfill the research methods requirement; consult with a Psychology advisor for lists of approved courses. Laboratory or research methods courses in other departments cannot be used to fulfill the research methods requirement. The research methods requirement should be fulfilled before senior year.

Foundation

To provide students with a solid foundation of knowledge in their area of concentration, the Psychology concentration requires four foundation courses, representing core areas of Psychology as a science. Foundation courses are all numbered below the 1000 level. List of approved foundation courses are posted on the CLPS undergraduate page. CLPS courses above the 1000 level and courses in other departments, at any level, cannot be used to satisfy foundation requirements.

Electives

Concentrators will select four additional courses that examine in greater depth topics of special interest to them. The CLPS courses designed to count as electives will often have foundation courses as prerequisites.

Electives can be chosen from laboratory courses, lecture courses, or seminars. At least two electives should be at the 1000 level. In addition, students may choose up to two courses outside of CLPS (preferably at the 1000 level) as electives. Electives should fit into a coherent intellectual theme, and should be chosen in consultation with a concentration advisor.

Capstone

Students must take a capstone course, typically in their senior year. This can be a 1000 level seminar/discussion course in CLPS, or an independent study course (CLPS 1970, CLPS 1980). See a Psychology concentration advisor for more detail.

Additional requirements for Sc.B.

In line with university expectations, the Sc.B. requirements include a greater number of courses and especially science courses. The definition of "science" is flexible. Some of these courses will be outside of CLPS, but several CLPS courses might fit into a coherent package as well. In addition, the Sc.B. degree also requires a laboratory course (in addition to CLPS 1900/CLPS 1901 or its alternative) to provide these students with in-depth exposure to research methods in a particular area of the science of the mind. Lists of approved laboratory courses can be obtained from the Psychology concentration advisors.

Honors Requirement

The Honors Program in Psychology gives undergraduates a special opportunity to carry out a research project under the direction of a faculty member. The program also provides the opportunity for outstanding senior concentrators to receive their undergraduate degree with Honors. Participation in the program allows students to develop an understanding of research and acquire research skills and background.

Candidates for Honors in Psychology must meet all of the requirements of the concentration as described above. Candidates submit their application for the program in semester 7. We encourage students to seek out a potential faculty mentor prior to semester 7. Candidates for Honors must have completed the Statistics CLPS 0900 and Research Methods and Design (CLPS 1900, Research Methods CLPS 1901, or laboratory course) requirements before semester 7. Please refer to the CLPS Honors Program page for detailed information about the specific requirements for the Honors program in Psychology.

FOR DETAILED UPDATES, PLEASE REFER TO THE COGNITIVE, LINGUISTIC, AND PSYCHOLOGICAL SCIENCES (CLPS) UNDERGRADUATE PAGE.

Requirements for the A.B. degree

STANDARD PROGRAM FOR THE A.B. DEGREE ¹

Common Core:		
CLPS 0010	Mind, Brain and Behavior: An Interdisciplinary Approach	1
CLPS 0900	Statistical Methods	1
CLPS 1900	Research Methods And Design (or approved laboratory course)	1
OR		
CLPS 1901	Research Methods (or approved laboratory course)	
One approved course in Social:		
CLPS 0220	Making Decisions	
CLPS 0700	Social Psychology	
CLPS 0710	The Psychology and Philosophy of Happiness	
One approved course in Perception/Cognition:		
CLPS 0200	Human Cognition	
CLPS 0450	Brain Damage and the Mind	
CLPS 0500	Perception and Mind	
One approved course in Development:		
CLPS 0610	Children's Thinking: The Nature of Cognitive Development	
CLPS 0620	Social and Moral Development	
CLPS 0701	Personality Theory	
One approved course in Learning/Animal Behavior:		
CLPS 0100	Learning and Conditioning	
CLPS 0110	Animal Behavior	
Four approved Electives related to Psychology		
Capstone: Independent Study (CLPS 1970, CLPS 1980) or approved seminar		
Total Credits		12

Requirements Specific for the Sc.B. degree

STANDARD PROGRAM FOR THE Sc.B. DEGREE ¹

Common Core:		
CLPS 0010	Mind, Brain and Behavior: An Interdisciplinary Approach	1
CLPS 0900	Statistical Methods	1
CLPS 1900	Research Methods And Design (or approved laboratory course)	1
OR		

CLPS 1901	Research Methods (or approved laboratory course)	
One approved course in Social:		
CLPS 0220	Making Decisions	
CLPS 0700	Social Psychology	
CLPS 0710	The Psychology and Philosophy of Happiness	
One approved course in Perception/Cognition:		
CLPS 0200	Human Cognition	
CLPS 0450	Brain Damage and the Mind	
CLPS 0500	Perception and Mind	
One approved course in Development:		
CLPS 0610	Children's Thinking: The Nature of Cognitive Development	
CLPS 0620	Social and Moral Development	
CLPS 0701	Personality Theory	
One approved course in Learning/Animal Behavior:		
CLPS 0100	Learning and Conditioning	
CLPS 0110	Animal Behavior	
One additional Laboratory course		
Four approved Electives related to Psychology		
Capstone: Independent Study (CLPS 1970 or CLPS 1980) or approved seminar		
Four Science courses		
Total Credits		17

¹ For the current list of approved courses in all categories, see the CLPS Psychology page.

Public Health

Public Health is an interdisciplinary concentration through which students examine a variety of health issues, including population health and disease, health policy, cross-cultural and international aspects of health, the organizational and social structures through which health services are delivered and received, and the public health system. Courses in the concentration allow students to explore the ways in which the social, political, behavioral and biological sciences contribute to the understanding of patterns of population distributions of health and disease. The concentration also provides students with courses in basic research methods and statistics necessary for problem solving and critical thinking in the emerging emphasis on evidence-based health care and public health.

Requirements for the Public Health Concentration

1. Core Courses (non-substitutable; 5 required for all students)

PHP 0310	Health Care in the United States	1
PHP 0320	Introduction to Public Health	1
PHP 0850	Fundamentals of Epidemiology	1
PHP 1501	Essentials of Data Analysis	1
or PHP 1510	Principles of Biostatistics and Data Analysis	
PHP 1910	Public Health Senior Seminar (required of all non-honors seniors; FALL)	1
or PHP 1915	Public Health Honors Senior Seminar	

2. Environmental Health and Policy (select one of the following):

PHP 0720	Public Health and the Environment	
PHP 1101	World of Food: Personal to Global Perspectives on Nutrition, Agriculture and Policy	
PHP 1700	Current Topics in Environmental Health	
PHP 1720	Environmental Exposure Assessments in Practice (Rural Public Health)	

PHP 1725	Rural Public Health	
PHP 1730	Climate Risks and Health Solutions	
3. Health, Health Care Systems, and Policy (select one of the following):		1
PHP 0330	Public Health Policy	
PHP 0650	From Manufacturer to Patient: Why is the Cost of Prescription Drugs So Darn High?	
PHP 1100	Comparative Health Care Systems	
PHP 1450	COVID-19, Public Health, and Health Policy	
PHP 1460	Public Health in a Changing World: Law, Policy & Justice (I)	
PHP 1480	Introduction To Public Health Economics	
PHP 1681	Reproductive Health, Rights and Justice	
4. Social and Behavioral Science for Prevention (select one of the following):		1
PHP 0400	Intro. to Health Disparities & Making Connection btw Structure, Social Determinants&Health Equity	
PHP 0700	Global Public Health Interventions	
PHP 1101	World of Food: Personal to Global Perspectives on Nutrition, Agriculture and Policy	
PHP 1300	Parenting Behaviors and Child Health	
PHP 1551	Substance Use Prevention, Treatment, & Policy	
PHP 1610	Tobacco, Disease and the Industry: cigs, e-cigs and more	
PHP 1650	Race, Racism and Health	
PHP 1670	Public Mental Health: A Framework for Studying and Preventing Mental Disorders	
PHP 1680U	Intersectionality and Health Inequities	
PHP 1690	Technology and Health Behavior Change	
PHP 1920	Social Determinants of Health	
5. Global Health Elective (select one of the following):		1
PHP 0700	Global Public Health Interventions	
PHP 0720	Public Health and the Environment	
PHP 1070	Global Burden of Disease	
PHP 1802S	Human Security and Humanitarian Response: Increasing Effectiveness and Accountability	
6. Health Disparities Elective (select one of the following):		1
PHP 0400	Intro. to Health Disparities & Making Connection btw Structure, Social Determinants&Health Equity	
PHP 1460	Public Health in a Changing World: Law, Policy & Justice	
PHP 1650	Race, Racism and Health	
PHP 1680I	Pathology to Power: Disability, Health and Community	
PHP 1680U	Intersectionality and Health Inequities	
PHP 1681	Reproductive Health, Rights and Justice	
PHP 1810	Community-Engaged Research in Public Health	
PHP 1821	Incarceration, Disparities, and Health	
PHP 1822	Effective Health Communication With Medically Underserved Populations in an Applied Learning Setting	
PHP 1920	Social Determinants of Health	
7. Biology (select one of the following):		1
BIOL 0200	The Foundation of Living Systems	

BIOL 0380	The Ecology and Evolution of Infectious Disease	
BIOL 0420	Principles of Ecology	
BIOL 0470	Genetics	
BIOL 0500	Cell and Molecular Biology	
BIOL 0510	Introductory Microbiology	
BIOL 0530	Principles of Immunology	
BIOL 0800	Principles of Physiology	
8. Public Health Elective (select any one PHP course OR one of the following Humanities/Fine Arts/Humanistic Social Sciences for Public Health courses)		1
AFRI 0550	African American Health Activism from Emancipation to AIDS	
AFRI 1060W	Policy, Culture and Discourse that Shape Health and Access to Healthcare	
AFRI 1060Z	Race, Sexuality, and Mental Disability History (HMAN 1973A)	
AFRI 1920	Health Inequality in Historical Perspective	
AMST 1600C	The Anti-Trafficking Savior Complex: Saints, Sinners, and Modern-Day Slavery	
AMST 1601	Health and Healing in American History (STS 1110, GNSS 1960B)	
COLT 0610Y	Women's Writing in the Arab World	
COLT 1810P	Literature and Medicine	
COST 0032	Music and Meditation	
COST 0100	Introduction to Contemplative Studies	
ENGL 1030C	Writing Science	
ENGL 1050R	Writing about Health and Healthcare	
ENGL 1140D	Writing Diversity: A Workshop	
ETHN 1750B	Treaty Rights and Food Fights: Eating Local in Indian Country	
GNSS 0090C	Reproductive Health: Science, Politics, and the Media	
GNSS 0120	Introduction to Gender and Sexuality Studies	
GNSS 1300	Gender-Based Violence Prevention	
HISP 0490A	Spanish for Health Care Workers	
HISP 0750Q	Health, Illness and Medicine in Spanish and Spanish American Literature and Film	
HIST 0150H	Foods and Drugs in History	
HIST 0270B	From the Columbian Exchange to Climate Change: Modern Global Environmental History	
HIST 0286A	History of Medicine I: Medical Traditions in the Old World Before 1700	
HIST 0286B	History of Medicine II: The Development of Scientific Medicine in Europe and the World	
HIST 0537B	Tropical Delights: Imagining Brazil in History and Culture	
HIST 1080	Humanitarianism and Conflict in Africa	
HIST 1830M	From Medieval Bedlam to Prozac Nation: Intimate Histories of Psychiatry and Self	
HIST 1960Q	Medicine and Public Health in Africa	
HIST 1977I	Gender, Race, and Medicine in the Americas	
HMAN 1975G	Planning the Family: Gender, Reproduction, and the Politics of Choice.	
LACA 1503V	Health of Hispaniola	
LITR 1151T	Poetry for Healing Territories	
PHIL 0060	Modern Science and Human Values	
PHIL 0520	Global Justice	

SAST 0700B	Introduction to Modern South Asia: Public Health From Theory to Practice
TAPS 1281W	Arts and Health: Theory
TAPS 1281Z	Arts and Health: Practice
Total Credits	
12	

Honors:

Honors Track, Classes of 2023 & Beyond

For Classes of 2023 & beyond, Honors track students enroll in PHP 1915, Public Health Honors Senior Seminar during Fall semester of their senior year as well as PHP 1980, Honors Thesis Prep during both semesters of their senior year to conduct research and write the honors thesis. Thus, for Classes of 2023 & beyond, fourteen courses are required for completion of the concentration requirements for an honors track student.

Please visit <https://www.brown.edu/academics/public-health/undergraduate/curriculum> (<https://www.brown.edu/academics/public-health/undergraduate/curriculum/>) for details or email the Director of Undergraduate Studies, Patricia Risica (patricia_risica@brown.edu) for more information.

Study Abroad/Study Away: The best semester to travel abroad/away is Spring of junior year. Courses taken away/abroad will likely NOT count for any of the concentration requirements, however, students can petition to have a course considered. Most do not meet the requirements or do not provide the ability for requirements to be assessed. Meet with concentration advisor and be prepared to provide syllabi for courses being considered for transfer (up to 2 per semester). Permission from concentration advisor is required.

Religious Studies

The concentration in Religious Studies cultivates understanding of societies and cultures throughout the world by exploring religious thought and practice in various historical, geographic, and political contexts. Concentrators discover new ways of engaging the complex world in which they live by studying the public and private concerns that the study of religion highlights, including understandings of self, community, good, evil, authority, and inequality. Equipped with interdisciplinary skills of interpretation and analysis, students learn how political affairs, institutions, conflicts, and social spheres commonly recognized as secular have taken shape through the formation and transmission of religious beliefs, behaviors, values, and rituals. These skills include: close analysis of texts, images, artifacts, artistic works, and other social data; synthesis of research through written and verbal expression; interpretation of the past and present through multiple forms of evidence; and engagement with contemporary social issues and communities.

1. Basic Requirement

A concentration in Religious Studies includes a minimum of nine semester-long courses. Those nine courses include RELS 1000 (a seminar in theories and methods in the study of religion), RELS 1995 (the senior capstone seminar) and seven other concentration courses, which must satisfy the concentration's distribution requirements. Students who transfer to Brown or study abroad must complete at least five courses in Religious Studies at Brown.

2. Distribution of Introductory, Intermediate, and Advanced courses:

Among the seven concentration courses, no more than four courses can be at the introductory level (0001-0199). The plan of study must include at least two advanced-level courses (above 1000), in addition to RELS 1000 and RELS 1995.

3. Distribution of Focus and Approach:

Concentrators are encouraged to develop a broad understanding of religious activity as well as a deep understanding of particular forms of religion. A concentrator's course plan should include courses that examine a variety of geographic and cultural contexts, through a variety of

approaches. The seven concentration courses (that is, the courses other than RELS 1000 and RELS 1995) must:

1. examine more than one religious tradition or culture;
2. reflect more than one primary approach to the study of religion (e.g., philosophical, historical, textual)
3. include at least one course designated as examining Race, Power, and Privilege (RPP). The RPP curricular program highlights courses that examine issues such as structural inequality, racial formations, disparities of power, and autocritique of academic disciplines. In addition to RELS 1000, many Religious Studies courses bear this designation.

To help students create a program of study that balances breadth of focus and approach with attention to the concentrator's particular interests and objectives, concentrators will meet with the Director of Undergraduate Studies (or an approved advisor from within the department) when declaring the concentration to discuss their intellectual priorities and provisional course plans. (In the concentration declaration form, concentrators will describe their priorities and plans.) Through these initial discussions as well as advising meetings in subsequent semesters, concentrators and their advisors will work together to recognize and cultivate each concentrator's theoretical, interpretive, or thematic interests.

4. Courses in Other Departments

Courses cross-listed from other departments and courses listed in other departments but taught by Religious Studies faculty count toward the program of study. Up to two courses taught by faculty in other departments also can count toward the program (pending approval by the DUS) if relevant to the student's program of study. Students who transfer to Brown, study abroad, or otherwise petition to include Brown courses not cross-listed with Religious Studies must complete at least five courses in Religious Studies at Brown.

5. Capstone Project

In the final year of study, all concentrators enroll in the department's Senior Capstone Seminar. Concentrators undertake a capstone project that builds upon a student's previous work in the department and provides a culminating focus for a student's concentration. In extenuating circumstances, a student may petition the DUS to fulfill the capstone within an existing course (subject to approval by its instructor) or an independent study; a concentrator must still enroll in at least nine courses total. Concentrators also may satisfy the capstone requirement by undertaking an honors thesis. Whichever context concentrators choose to complete their capstone within, they will develop a plan for their project no later than the end of the spring semester of the junior year, in consultation with the Director of Undergraduate Studies and other faculty as appropriate.

Honors Thesis (Optional)

A thesis is an opportunity for students to conduct extended independent research under the guidance of faculty. If a student chooses to write an honors thesis, in addition to completing the typical seven concentration courses (in addition to RELS 1000) the student will enroll in RELS 1995 during Fall and RELS 1999 during Spring semester of the senior year. Whether or not a student receives honors, RELS 1995 will serve as the student's capstone course. To be eligible to write a thesis, a student must have earned a grade point average of greater than 3.5 (A=4, B=3, C=2) on courses that count toward the concentration. Additionally, to be eligible for honors, concentrators may take no more than two of the concentration courses with the "S/NC" option, after declaring a Religious Studies concentration. (Note: if a student is philosophically committed to taking the majority of her or his courses at Brown as "S/NC," that student may petition the Department to waive this "S/NC" limit.) Writing the thesis is a necessary, but not sufficient, condition for receiving Honors. In order to receive Honors, the student's thesis must earn an A from its two readers, and the student must have earned a grade point average of greater than 3.5 in the concentration and satisfied all other concentration requirements.

Jason Protass, Director of Undergraduate Studies
Tina Creamer, Departmental Administrator

Science, Technology, and Society

Science, Technology, and Society (STS, formerly Science and Society) is an interdisciplinary concentration that examines the processes of scientific discovery and the establishment of scientific policies and systems of belief from historical, philosophical, anthropological, and sociological perspectives. Concentrators analyze the practices, norms, and values that reflect and shape our deepest convictions about what is considered "science." Students select courses in the physical sciences, life sciences, or mathematics and choose a thematic track that may include the history and philosophy of science; gender and science; race, science and ethnicity; health and medicine; environment and society; or they may create their own independent focus. STS prepares students to follow, guide, and shape scientific knowledge as it travels from the laboratory into the public arena.

Requirements

Consisting of 12 courses, the program of study outlined below will be developed by each student in consultation with the concentration advisor. Where appropriate, independent reading, lab courses or GISPS may count for up to three of the twelve total courses. Students will take a minimum of 7 intermediate to advanced courses.

Required Courses (2)

The concentration has two required courses.

- STS 1000 : Introduction to Science and Society: Theories and Controversies, or equivalent introductory course: usually taken in the second or third year.
- STS 1900 : Senior Seminar in Science and Society, also open to non-majors with the proper background, usually taken senior year.

Thematic Track (3)

Students will organize their course of study around the choice of a thematic track. The theme may be thought of as the applied content portion of the concentration. Students will take a minimum of three courses, at least one of which must be at an advanced level, in one of the thematic areas listed below:

- History & Philosophy of Science
- Gender & Science
- Race, Science & Ethnicity
- Health & Medicine
- Representing Science in Literature & Culture
- Policy, Persuasion & the Rhetoric of Science
- Environment & Society
- Independent Focus

Science Track (4)

Students will take a minimum of four courses in one of the following scientific areas: physical sciences, life sciences, mathematics/computer science. The chosen area should provide appropriate background and support for the chosen concentration theme. The science courses will be sequenced such that a concentrator will move enough beyond the introductory level to gain some understanding of the world view of scientists within a chosen field. The particular sequence of courses which best meets the science requirement will be chosen in consultation with the concentration advisor. When necessary, the concentration advisor will seek guidance from faculty within the chosen scientific field.

Science and Technology Studies Theory (3)

Students will take three Science and Technology Studies-related courses in the social sciences and humanities. These courses, which will provide critical theoretical background for the study of Science and Society, should address questions of historiography, epistemology and methodology in the field of science and technology studies. A full list of such courses and sample concentrations may be found at <https://www.brown.edu/academics/science-and-technology-studies/>

Honors

To qualify for Honors a student must:

- Be in good standing
- Have completed at least two thirds of the concentration requirements by the application deadline
- Have earned a majority of "A" grades in the concentration. Classes taken S/NC will count as qualifying towards that majority if they are marked "S with distinction" or are accompanied by a Course Performance Report (https://ask.brown.edu/performance_reports/) indicating that had the student taken the course for a grade, the grade would have been an "A."

Slavic Studies

Slavic Studies is concerned with the languages, literatures, and civilizations of the Slavic world. Built on sound knowledge of one or two Slavic languages, the program allows students to develop an in-depth appreciation and understanding of East European cultures and civilizations through a broad spectrum of interdisciplinary fields. Students take courses in literature, history, culture, theater, political science, economics, and international relations. Concentrators focusing on Russia learn one of the world's most commonly spoken languages and study some of the world's best-regarded authors, such as Tolstoy, Dostoevsky, Gogol, and Chekhov. Courses on film, literature, and the visual arts introduce students to the historical and social contexts of Russia in the 20th and 21st centuries. Students can enhance their study of Czech or Polish through courses on literature, film, and history, thereby gaining an understanding of the unique histories and cultures of the East Central European Slavic countries. Most concentrators study abroad in a Slavic country, either during the academic year or the summer.

Requirements for the AB Degree

Six semesters of one Slavic language or the equivalent, or a combined total of eight semesters of two Slavic languages or the equivalent.

RUSS 0100 & RUSS 0200 or RUSS 0110	Introductory Russian and Introductory Russian Intensive Russian
RUSS 0300 & RUSS 0400	Intermediate Russian and Intermediate Russian
RUSS 0500 & RUSS 0600	Advanced Russian and Advanced Russian
In cases where a student's interests and course of study warrant it, and only upon consulting the concentration advisor, the student may apply more than one Slavic language to the concentration (Czech or Polish in addition to Russian), and would then need a combined total of eight semesters of two Slavic languages:	
CZCH 0100 & CZCH 0200	Introductory Czech and Introductory Czech
CZCH 0400 & RUSS 0300	Intermediate Czech and Intermediate Russian
PLSH 0100 & PLSH 0200	Introductory Polish and Introductory Polish
PLSH 0300 & PLSH 0400	Intermediate Polish and Intermediate Polish

The concentration in Slavic Studies requires students to complete a minimum of seven 1000-level courses devoted to the study of the East European civilizations: literature, history, culture, theater, political science, economics, international relations. Typically, at least four of these courses will be from within the Department of Slavic Studies. Students' choice of courses is subject to the approval of the concentration advisor.

Courses in the Department of Slavic Studies:	
CZCH 1000	Dimensions of Czech Animation: Contexts, Interpretations, and Dialogs with the East
RUSS 1110	Special Topics in Russian Studies I: Advanced Reading and Conversation

RUSS 1120	Special Topics in Russian Studies II: Advanced Reading and Conversation
RUSS 1200	Russian Fantasy and Science Fiction
RUSS 1220	Nationalism and Nationalities
RUSS 1250	Russian Cinema
RUSS 1290	Russian Literature in Translation I: Pushkin to Dostoevsky
RUSS 1300	Russian Literature in Translation II: Tolstoy to Solzhenitsyn
RUSS 1330	Soviet Culture: Propaganda, Dissidence, Underground
RUSS 1340	The Russian Novel
RUSS 1440	Imagining Moscow: Utopia and Urban Spaces in 20th-Century Russian Culture
RUSS 1450	Love, Adultery, and Sexuality
RUSS 1500	Approaches to Russian Literature
RUSS 1550	Beyond the Kremlin: Russian Culture and Politics in the Twenty-First Century
RUSS 1600	Literature and History: Russian Historical Imagination in the European Context
RUSS 1660	Sexuality and Revolution in 20th-Century Russian Culture
RUSS 1800	Pushkin
RUSS 1810	Tolstoy
RUSS 1820	Dostoevsky
RUSS 1840	Nabokov
RUSS 1860	Chekhov
RUSS 1848	Central Europe: An Idea and its Literature
RUSS 1870	Gogol
RUSS 1967	Russian Postmodernism
SLAV 1250	Polish Culture Through Film
SLAV 1300	Sociolinguistics (with Case Studies on the Former USSR and Eastern Europe)
Sample courses in other departments:	
HIST 1268A	The Rise of the Russian Empire
HIST 1268B	Russia in the Era of Reforms, Revolutions, and World Wars
HIST 1268C	The Collapse of Socialism and the Rise of New Russia

Honors

Honors candidacy in Slavic studies assumes an excellent academic record, particularly in the concentration. Additional requirements are the same as those for a standard concentration, plus the writing of a senior thesis (SLAV 990). For procedures and schedule for writing a senior thesis, please refer to the department guidelines.

Social Analysis and Research

The Sc.B. concentration in Social Analysis and Research provides both a conceptual and a working knowledge of the techniques for data collection and analysis used for social research in academic and non-academic environments. The centerpiece of the concentration is a rigorous and comprehensive collection of courses: (1) that develop an understanding of the principles underlying the processes of data collection and analysis; and (2) that train students in the application of advanced statistical techniques for data description and analysis. The concepts and skills learned in these courses are reinforced through engagement in applied research with Sociology faculty and/or internships with local organizations in the for profit and not-for-profit sectors.

Concentrators also take courses that provide grounding in the theoretical approaches to social phenomena that are foundational to social research. Graduates develop an understanding of the concepts and processes that

underlie the issues studied by sociologists and the analytic techniques that allow sociologists to understand social relations and individual behavior.

Standard program for the Sc.B. degree

Required core:

MATH 0090	Single Variable Calculus, Part I	1
SOC 1100	Introductory Statistics for Social Research	1
or APMA 0650	Essential Statistics	
or ECON 1620	Introduction to Econometrics	
SOC 1020	Methods of Social Research	1
SOC 2010	Multivariate Statistical Methods I	1
SOC 1010	Classical Sociological Theory	1
SOC 1950	Senior Seminar	1

Three (3) substantive or theory courses (non-methodological courses) in Sociology, two (2) of which must be at the 1000-level or above.

Three (3) of the following advanced analysis courses: 3

SOC 1117	Focus Groups for Market and Social Research
SOC 1118	Context Research for Innovation
SOC 1120	Market and Social Surveys
SOC 1260	Market Research in Public and Private Sectors
SOC 1340	Principles and Methods of Geographic Information Systems
SOC 1872N	Ethnography in Organizations
SOC 2020	Multivariate Statistical Methods II
SOC 2070	Text as Data for Social Science Research
SOC 2210	Qualitative Methods
SOC 2230	Techniques of Demographic Analysis
SOC 2240	Event History Analysis
SOC 2250	Ethnography: Theory and Practice
SOC 2260T	Cultural Theory and Methods
SOC 2610	Spatial Thinking in Social Science
SOC 2612	Geographic Information Systems and Spatial Analysis for the Social Sciences
SOC 2960G	Spatial Data Analysis Techniques in the Social Sciences
SOC 2960Y	Causal Analysis
SOC 2961A	Advanced Spatial Data Analysis Techniques in the Social Sciences

Research experience (1 course) 0-1

A one-semester research internship (not for credit or for credit as SOC 1970 - Independent Study), or a summer research internship (not for credit).

Total Credits 12-13

***See the Sociology website <http://www.brown.edu/academics/sociology/> for details regarding Honors and Independent Studies

Course substitutions: Students may petition the Director of Undergraduate Studies to use one advanced analysis course taken in another department to count toward the three required advanced analysis courses.

Organizational Studies Track requirements

Required core:

MATH 0090	Single Variable Calculus, Part I	1
SOC 1010	Classical Sociological Theory	1
SOC 1020	Methods of Social Research	1
SOC 1100	Introductory Statistics for Social Research	1
or APMA 0650	Essential Statistics	
or ECON 1620	Introduction to Econometrics	

SOC 1950	Senior Seminar	1
SOC 2010	Multivariate Statistical Methods I	1
Any combination of two (2) courses from below:		2
SOC 0300	Organizations and Society	
SOC 1311	Micro-Organizational Theory: Social Behavior in Organizations	
SOC 1315	Macro-Organizational Theory: Organizations in Social Context	
One (1) Advanced Organizational Studies Elective:		1
SOC 1070	Introduction to Economic Sociology	
SOC 1117	Focus Groups for Market and Social Research	
SOC 1118	Context Research for Innovation	
SOC 1120	Market and Social Surveys	
SOC 1260	Market Research in Public and Private Sectors	
SOC 1311	Micro-Organizational Theory: Social Behavior in Organizations	
SOC 1315	Macro-Organizational Theory: Organizations in Social Context	
SOC 1871C	Sociology of the Legal Profession	
Three (3) of the following Advanced Analysis Courses:		3
SOC 1117	Focus Groups for Market and Social Research	
SOC 1118	Context Research for Innovation	
SOC 1120	Market and Social Surveys	
SOC 1260	Market Research in Public and Private Sectors	
SOC 1340	Principles and Methods of Geographic Information Systems	
SOC 1872N	Ethnography in Organizations	
SOC 2020	Multivariate Statistical Methods II	
SOC 2070	Text as Data for Social Science Research	
SOC 2210	Qualitative Methods	
SOC 2230	Techniques of Demographic Analysis	
SOC 2240	Event History Analysis	
SOC 2250	Ethnography: Theory and Practice	
SOC 2260T	Cultural Theory and Methods	
SOC 2610	Spatial Thinking in Social Science	
SOC 2612	Geographic Information Systems and Spatial Analysis for the Social Sciences	
SOC 2960G	Spatial Data Analysis Techniques in the Social Sciences	
SOC 2960Y	Causal Analysis	
SOC 2961A	Advanced Spatial Data Analysis Techniques in the Social Sciences	
Research experience (1 course)		0-1
A one-semester research internship (not for credit or for credit as SOC 1970 - Independent Study), or a summer research internship (not for credit).		
Total Credits		12-13

Research Internship

A one semester or a summer research internship is required. The research internship is designed to provide students with hands-on experience in social research. Students will typically complete the research internship in their junior year or during the summer between their junior and senior years. Students need to submit an *Internship Proposal Form* to the Undergraduate Concentration Advisor for approval prior to starting the internship. Upon completion of the internship, students are required to submit to the Undergraduate Concentration Advisor a brief summary report of their experience, which must be signed by the supervisor of the student's internship.

Academic research internships involve work on a faculty member's research project. Activities may range from data collection, data entry, data file management, descriptive analyses, and more advanced model estimation. Students are encouraged to approach faculty about opportunities for working on their research projects. Academic and off-campus research internships will typically entail 5-10 hours of work per week and may or may not involve compensation.

Students may receive academic credit for academic research internships and off-campus internships completed during the academic year if they combine the internship experience with an academic component under the direction of a faculty advisor. Students taking an internship for credit should register for an *Individual Research Project* (SOC 1970).

***See the Sociology website <http://www.brown.edu/academics/sociology/> for details regarding Honors and Independent Studies

Course substitutions: Students may petition the Director of Undergraduate Studies to count a course not on the list above toward the advanced analysis requirement or the advanced organizational studies requirement.

Sociology

The concentration in Sociology (leading to a Bachelor of Arts) provides a foundation in sociological theory and methods and the opportunity to cultivate more specialized knowledge in the discipline's substantive interests. Students develop that focus through their coursework, taking courses in diverse areas such as social inequality, family and gender, organizations, environmental sociology, race and ethnicity and globalization. Students refine their interests during the senior seminar and through their completion of a senior thesis or capstone project.

Standard program for the A.B. degree

Ten courses are required to complete the concentration.

Required core:

SOC 0010	Social Forces: An Introduction to Sociology	1
SOC 1010	Classical Sociological Theory	1
SOC 1020	Methods of Social Research	1
SOC 1100	Introductory Statistics for Social Research	1
or APMA 0650 Essential Statistics		
or ECON 1620 Introduction to Econometrics		
or CLPS 0900 Statistical Methods		
SOC 1950	Senior Seminar	1

Five (5) additional courses:

- At least three of the optional courses have to be 1000 level and one of them must be a substantive seminar (1870-1873).
- Students can choose to take up to two lower level (0100 level) courses.
- Students can petition to take two courses outside of the discipline (this will be allowed only when the proposed course makes sense given the interests of the student, and there is no equivalent sociology course).

Total Credits **10**

Organizational Studies Track

Ten courses to complete the concentration

Required Core:

SOC 0010	Social Forces: An Introduction to Sociology	1
SOC 1010	Classical Sociological Theory	1
SOC 1020	Methods of Social Research	1
SOC 1100	Introductory Statistics for Social Research	1
or APMA 0650 Essential Statistics		
or ECON 1620 Introduction to Econometrics		
or CLPS 0900 Statistical Methods		

SOC 1950	Senior Seminar	1
Foundations of Organizational Studies (choose two of the following):		2
SOC 0300	Organizations and Society	
SOC 1311	Micro-Organizational Theory: Social Behavior in Organizations	
SOC 1315	Macro-Organizational Theory: Organizations in Social Context	
Advanced Organizational Studies Course (choose one course). The following are approved EXAMPLES. Please consult Courses@Brown/Concentration Advisor for current offerings.		1
SOC 1070	Introduction to Economic Sociology	
SOC 1117	Focus Groups for Market and Social Research	
SOC 1118	Context Research for Innovation	
SOC 1120	Market and Social Surveys	
SOC 1260	Market Research in Public and Private Sectors	
SOC 1311	Micro-Organizational Theory: Social Behavior in Organizations (If not used to meet the "Foundations" requirement, above)	
SOC 1315	Macro-Organizational Theory: Organizations in Social Context (If not used to meet the "Foundations" requirement, above)	
SOC 1871C	Sociology of the Legal Profession	
Two (2) additional courses. Each of these courses must be either (a) offered by the Department of Sociology, or (b) drawn from the following list of interdisciplinary "Organization-Relevant Electives:"		2
AMST 1610A	American Advertising: History and Consequences	
CLPS 1250	Human Factors	
CLPS 1470	Mechanisms of Motivated Decision Making	
CLPS 1730	Psychology in Business and Economics	
ECON 0110	Principles of Economics	
ECON 1760	Financial Institutions	
ETHN 1890C	Business, Culture, and Globalization: An Ethnographic Perspective	
ENGN 1930S	Land Use and Built Environment: An Entrepreneurial View	
HIST 0150A	History of Capitalism	
PHIL 1610	Decision Theory: Foundations and Applications	
POLS 1150	Prosperity: The Ethics and Economics of Wealth Creation	
POLS 1240	Politics, Markets and States in Developing Countries	
POLS 1820W	Market Liberalism: Origins, Principles and Contemporary Applications	
Total Credits		10

Additional Restrictions to the Organizational Studies Track:

Lower-level Coursework: Students may count no more than two 0100-level courses toward the Organizational Studies and Concentration Elective requirements (combined).

Upper-level Coursework: At least three of the five courses counted toward the Organizational Studies and Concentration Elective requirements (combined) must be at the 1000-level, and at least one must be a substantive seminar (1870-1873).

Interdisciplinary Coursework: Students may petition to count non-Sociology courses beyond the Organization-Relevant Elective list toward

the Concentration Elective requirement. This will be allowed only when the proposed course makes sense given the interests of the student, and the Department of Sociology offers no equivalent course.

****See the Sociology website <http://www.brown.edu/academics/sociology/> for details regarding Honors and Independent Studies"

The Senior Seminar SOC 1950 (<https://bulletin.brown.edu/search/?P=SOC%201950>)

Sociology requires all concentrators to complete a thesis or capstone project in their senior year. The purpose of the thesis or capstone project is to allow students an opportunity to apply the knowledge they acquired through the concentration curriculum on a topic of their own interests.

(Students in the Organizational Studies track are expected to focus their senior thesis or capstone project on an Organizational Studies topic.) To fulfill this requirement students enroll in SOC 1950 – Senior Seminar. Participation in this seminar allows each cohort of concentrators to discuss their diverse interests and expose students to the wide range of applications of Sociological knowledge.

A **senior thesis** must ask an original research question, answer it with appropriate evidence, and place that work within relevant scholarly literature in sociology. The thesis is supervised by a faculty member who serves as the primary advisor and one additional faculty member who serves as a reader. By the end of the sixth semester, students must submit a prospectus for the senior thesis (not more than four pages) accompanied by the signature of one faculty member indicating that he or she is willing to serve as the primary advisor on the thesis to the Director of Undergraduate Studies in their concentration. Only a senior thesis qualifies the student for Honors.

A **capstone project** is an independent, student-initiated project or experience developed during the Senior Seminar (SOC 1950) that connects in a meaningful way to learning in the concentration. A capstone project differs from a thesis in its scholarly content and form, and it depends only on the evaluation of the senior seminar instructor. Whereas the senior thesis follows the form of a conventional research paper, the capstone project allows a wider array of research and creative outputs, including but not limited to video documentaries, photographic exhibitions, and applied or policy-related reports for an off-campus organization. Projects are complemented by a poster presentation, literature review, and report that situates the central subject matter of the project within the context of sociological scholarship.

Independent Study

Students can use no more than one (1) Independent Study course (SOC 1970 (<https://bulletin.brown.edu/search/?P=SOC%201970>)) to meet the concentration course requirements. This course counts towards a 1000-level substantive requirement and will not serve as a substitute for any of the core concentration requirements.

Honors

In order to be considered for honors, students must (1) be in good standing with the College, (2) have completed at least half of the concentration coursework, and have earned a majority of "A" grades in the concentration. Honors also require a senior thesis, with a recommendation of Honors by the advisor and reader, that demonstrates an understanding of empirical research.

South Asian Studies

South Asian Studies is an interdisciplinary concentration in which students work across the humanities and social sciences, geographical locations, and time periods. The concentration emphasizes both the diversity of South Asia as a region, as well as the long-term historical connections among people and places in Pakistan, Nepal, Bhutan, India, Bangladesh, and Sri Lanka. The concentration takes a comparative approach, bringing attention to history, politics, and culture within the region, as well as in the equally vital global South Asian diaspora.

Course Requirements

All South Asian Studies concentrators must take and pass 10 courses as approved by their concentration advisor. Students who wish to earn honors must take 12 courses total (see Senior-Year Project below).

SAST 0700	Introduction to Modern South Asia	1
or HIST 1620	Resisting Empire: Gandhi and the Making of Modern South Asia	

Two courses in the Humanities with a majority focus in South Asia, such as:

CLAS 0995	India's Classical Performing Arts	2
CLAS 1140	Classical Philosophy of India	
COST 0030	Sound, Song and Salvation in South Asia	
COST 0034	Dharma: A History of Classical Indian Civilization	
COST 0035	Saints and Mystics of India	
COST 0036	Love and War in India	
COST 0037	Sensing the Sacred: Sensory Culture in South Asian Religions	
COST 0140	Food, Religion and Politics in South Asia	
COST 0145	Karma, Rebirth and Liberation: Life and Death in South Asian Religions	
COST 0525	The History and Practice of Yoga in India and Beyond	
COST 0526	This Whole World is OM: Mantras in Indian Religions	
HIAA 0013	Introduction to Indian Art	
HIAA 0023	South Asian Art and Architecture	
LITR 1231K	Innovations in Indian Literature	
RELS 0096	The Imaginary Lives of Muslims	
RELS 1510	Islam in South Asia	
RELS 0036	Love and War in India	
RELS 0037	Sensing the Sacred: Sensory Culture in South Asian Religions	
RELS 0526	This Whole World is OM: Mantras in Indian Religions	

Two courses in the Social Sciences with a majority focus on South Asia, such as:

HIST 1979D	Ruined History: Visual and Material Culture in South Asia	2
POLS 1280	Politics, Economy and Society in India	
POLS 1821O	Politics of Economic Development in Asia	
POLS 2320	Ethnic Conflict	
POLS 2330	Politics in India	
SAST 0750	Understanding the Indian Economy	
SAST 0725	Political Ecology in South Asia	
SAST 0526	This Whole World is OM: Mantras in Indian Religions	
SAST 0525	The History and Practice of Yoga in India and Beyond	
SAST 0140	Food, Religion and Politics in South Asia	
SAST 0037	Sensing the Sacred: Sensory Culture in South Asian Religions	
SAST 0034	Dharma: A History of Classical Indian Civilization	

At least five additional elective courses. Students can take additional courses in the humanities or social sciences with a focus on South Asia, such as:

At least three of the five electives must be drawn from the department pre-approved course listings (or be approved by the DUS/Concentration advisor). The courses on this pre-approved list have significant (at least 25%) South Asia content.			5

No more than two of the remaining electives can be courses with less empirical South Asia content, but these courses must have theoretical relevance to the study of South Asia (with the approval from the DUS).

ANTH 0100	Introduction to Cultural Anthropology
ANTH 2320	Anthropology and Development: Critical Ethnographic Perspectives
COST 0032	Music and Meditation
COST 0100	Introduction to Contemplative Studies
ECON 0510	Development and the International Economy
ECON 1530	Health, Hunger and the Household in Developing Countries
ECON 2510	Economic Development I
HIAA 0081	Architecture of the House Through Space and Time
HIST 0150D	Refugees: A Twentieth-Century History
HIST 1440	The Ottomans: Faith, Law, Empire
HNDI 0200	Beginning Hindi or Urdu
HNDI 0400	Intermediate Hindi-Urdu
HNDI 1080	Advanced Hindi-Urdu
MCM 1505O	Does Utopia Still Exist? Media, politics and the hope of something else
POLS 0200	Introduction to Comparative Politics
POLS 1380	Ethnic Politics and Conflict
RELS 0100	Buddhist Thought, Practice, and Society
SAST 1970	Independent Study
SANS 0200	Elementary Sanskrit II
SANS 0400	Classical Sanskrit Story Literature
SANS 1030	The Bhāgavata Purāṇa: Text and Reception
SANS 1100	Vedic Sanskrit

Total Credits **10**

Language Requirements

Proficiency in a South Asian language is required for the concentration. Demonstrating proficiency can entail passing a written and oral examination, 4 semesters of formal language study at Brown or another institution, or a high school transcript indicating that the language of instruction for all courses was a South Asian language. Native Hindi/Urdu speakers are encouraged to fulfill the language requirement by taking another South Asian language for four semester, such as Sanskrit at Brown or a relevant language at another institution. Up to two language courses can count toward fulfilling the student's elective requirements.

Senior-Year Project

Students must complete either a senior capstone project OR an honors thesis.

Capstone projects or honors theses are opportunities for students to creatively synthesize the thinking on South Asia that they have developed during the concentration. The project should exhibit an empirically and theoretically driven research question or argument about some aspect of South Asian Studies. the senior-year project should involve some research in at least one South Asian language.

All students are encouraged to start thinking about their capstones in their junior year.

Capstones can take two primary forms:

1. A research paper of approximately 30 pages on a topic related to South Asia for an existing concentration-eligible course, undertaken with the permission of the instructor.
2. An independent study-based project. the produce and/or process that constitutes this can be artistic, primary or secondary research-based, internship-related, or something else. the project must be supervised by at least one South Asian Studies faculty member* for at least one

semester under SAST 1970. This course can count towards the five elective requirement.

At the end of the junior year, each student should meet with the Director of Undergraduate Study (DUS) to review their plan for completing their capstone. If pursuing a capstone project, students will be required to submit, by the end of the shopping period of the fall of their senior year, a short proposal (300 words) that describes how they are going to complete this requirement.

An **Honors Thesis** is a two-semester independent study supervised by a thesis advisor (SAST 1970). These two courses constitute the additional courses needed for honors in the concentration.

An honors thesis can be textual, or it can take other forms (multi-media, visual, artistic, or musical, for example). The form and substance of a non-textual honors thesis must conform to the rigorous regulations set out by the relevant department(s) and the Dean of the College.

Additional Honors Requirements

To be eligible for Honors, students will have earned an "A" in the majority of graded courses for the concentration.

Students may graduate with Honors in South Asian Studies by completing an undergraduate Honors thesis under the supervision of at least one reader drawn from the South Asian Studies faculty* and one additional reader from the Brown (or RISD, in the case of Brown-RISD students) faculty community.

In order to pursue Honors, students must submit the following materials to the South Asian studies Director of Undergraduate Studies (DUS) by the end of their 6th semester:

1. A prospectus (3-5 pages, describing the major research questions and methods to be used, complete with bibliography) that has been read and vetted by the student's intended primary reader.
2. An email from the faculty member who will serve as primary reader to the South Asian Studies DUS noting their willingness to advise the thesis.

In addition, students must:

1. Enroll in a two-semester sequence of independent study [SAST 1970 or under a relevant departmental course code].
2. Designate a second reader by the end of the first month of their 7th semester. Second readers should also confirm their willingness to serve as a reader by sending an email to the South Asian Studies DUS.
3. Be in regular contact with thesis advisor about the progress of the project.
4. Present their research to the Saxena Center community during their final semester.

For **mid-year graduating students**, the topic and primary reader must be identified and confirmed by mid-November of the junior year, and a second reader must be arranged and confirmed by January 30 of the senior year.

* This includes all people listed under the Faculty, Postdoctoral Associate, and Visiting Scholars (limited to those in residence at Brown) tabs on the Saxena Center website

Statistics

The Bachelor of Science degree in Statistics is designed to provide foundations that include basic statistical concepts and methodologies, and to expose students to the role of statistical thinking and analysis in interdisciplinary research and in the public sphere. To ensure deep rigorous understanding of the foundations and main methods of analysis in statistics, the program is composed of three parts: a) foundations in mathematics and computing, combined with an introduction to statistical thinking and practice; b) four core courses on the fundamentals of statistical theory and data analysis; and c) more advanced material covering important areas of statistical methodology. A capstone project involving substantial data analysis or focused on methodology/theory is required. Students also have opportunities to acquire practical experience in study design, data management, and statistical analysis by working as undergraduate research assistants in projects in one of the participating academic departments or Research Centers at Brown.

The Concentration is based on several premises: that statistics is a scientific discipline in its own right, with specialized methodologies and body of knowledge; that it is essentially concerned with the art and science of data analysis; and that it is best taught in conjunction with specific, substantive applications. To this end, the Concentration is designed to provide foundations that include basic statistical concepts and methodologies, and to expose students to the role of statistical thinking and analysis in interdisciplinary research and in the public sphere. The Concentration prepares students for careers in industry and government, for graduate study in statistics or biostatistics and other sciences, as well as for professional study in law, medicine, business, or public administration. The undergraduate concentration guide is available here (<https://www.brown.edu/academics/public-health/biostatistics/undergraduate-statistics-concentration/>).

The Undergraduate Concentration in Statistics is administered by the Department of Biostatistics and leads to a Sc.B. degree. To ensure deep rigorous understanding of the foundations and main methods of analysis in statistics, the program is composed of three parts. The first part entails foundations in mathematics and computing, combined with an introduction to statistical thinking and practice. The second part includes four core courses that provide a comprehensive account of the fundamentals of statistical theory and data analysis. The third part delves into more advanced material covering important areas of statistical methodology. In addition to the formal coursework, students are required to complete a capstone project that involves a substantial data analysis or a methodological/theoretical project. Students also have opportunities to acquire practical experience in study design, data management, and statistical analysis by working as undergraduate research assistants in projects in one of the participating academic Departments or Research Centers at Brown.

The program requires **thirteen** one-semester courses. The required courses are as follows:

LEVEL I: Foundations in Mathematics - Calculus		2
MATH 0100	Single Variable Calculus, Part II	
MATH 0180	Multivariable Calculus	
LEVEL I - Foundations in Mathematics - Linear Algebra		1
MATH 0520	Linear Algebra	
Computing		1
APMA 0160	Introduction to Scientific Computing	
or CSCI 0040	Introduction to Scientific Computing and Problem Solving	
Introduction to Statistical Thinking and Practice		1
PHP 1501	Essentials of Data Analysis	
With the approval of the Director of the Statistics Concentration, one of the following courses may serve as replacement:		
SOC 1100	Introductory Statistics for Social Research	
ECON 1620	Introduction to Econometrics	
APMA 0650	Essential Statistics	
BIOL 0495	Statistical Analysis of Biological Data	
CLPS 0900	Statistical Methods	
LEVEL II - Core Courses in Theory and Data Analysis		2
APMA 1650	Statistical Inference I	
or APMA 1655	Honors Statistical Inference I	
APMA 1660	Statistical Inference II	
OR		
MATH 1210	Probability	
MATH 1620	Mathematical Statistics	
Introduction to Biostatistics		1
PHP 1510	Principles of Biostatistics and Data Analysis	
OR		
PHP 2510	Principles of Biostatistics and Data Analysis	

LEVEL III: Advanced Courses in Statistical Methods		2
PHP 1560	Statistical Programming in R	
OR		
PHP 2560	Statistical Programming with R	
AND		
PHP 1511	Applied Regression Analysis	
OR		
PHP 2511	Applied Regression Analysis	
Capstone Project		1
PHP 1970	Independent Study	
Electives in Social Science and Biostatistics (Students must choose 2)		2
SOC 1120	Market and Social Surveys	
SOC 1340	Principles and Methods of Geographic Information Systems	
SOC 2230	Techniques of Demographic Analysis	
CSCI 1420	Machine Learning	
CSCI 1810	Computational Molecular Biology	
CSCI 1820	Algorithmic Foundations of Computational Biology	
CSCI 1951A	Data Science	
PHP 0850	Fundamentals of Epidemiology	
PHP 2030	Clinical Trials Methodology	
PHP 2120	Introduction to Methods in Epidemiologic Research	
PHP 2200	Intermediate Methods in Epidemiologic Research	
PHP 2515	Fundamentals of Probability and Statistical Inference	
PHP 2520	Statistical Inference I	
PHP 2530	Bayesian Statistical Methods	
PHP 2550	Practical Data Analysis	
PHP 2580	Statistical Inference II	
PHP 2602	Analysis of Lifetime Data	
PHP 2601	Linear Models	
PHP 2610	Causal Inference and Missing Data	
PHP 2620	Statistical Methods in Bioinformatics, I	
APMA 1070	Quantitative Models of Biological Systems	
APMA 1080	Inference in Genomics and Molecular Biology	
APMA 1200	Operations Research: Probabilistic Models	
APMA 1690	Computational Probability and Statistics	
APMA 1710	Information Theory	
APMA 1740	Recent Applications of Probability and Statistics	
APMA 1860	Graphs and Networks	
APMA 2610	Recent Applications of Probability and Statistics	
ENGN 2520	Pattern Recognition and Machine Learning	
CLPS 1292	Introduction to Programming for the Mind, Brain and Behavior	
CLPS 1492	Computational Cognitive Neuroscience	
ECON 1360	Health Economics	
ECON 1630	Mathematical Econometrics I	
ECON 1640	Mathematical Econometrics II	
ECON 1660	Big Data	
MATH 1810A	Applied Algebraic Topology	

Other Analytical/Computational/ Statistical courses with the approval of the Director of the Statistics Concentration

Total Credits **13**

Prospective students will be able to obtain Advanced Placement credit for the requirements in mathematics. Students who have already completed an introductory course in statistics will be granted permission to proceed to Level II core courses if they meet the prerequisites in mathematics and computing.

PHP 0100: As part of the capstone course or thesis, students should complete an online course, PHP 0100, at their own pace. This course is a requirement and is meant to give a broad overview of public health and it allows students to see different areas in public health where statistics is being used. The course does not require any additional credit and is completed as part of the independent study, PHP 1970/1980. Students who are in a double concentration in public health are exempt from this course.

Senior Thesis: A senior honors thesis is not a requirement for graduation, but concentrators who choose to write one are required to write a manuscript that describes a major project of statistical data analysis that they performed or a simulation study to evaluate the performance of a statistical method. Students that decide to write an honor thesis will generally integrate their capstone project into their thesis. Generally, writing a senior thesis includes two semesters of independent study (PHP 1980), the capstone project may serve as one of those.

Honors: Statistics requires the completion of a senior thesis and a superior record in the program.

Study Abroad/Study Away: Up to two courses taken elsewhere (study abroad or other transfer) may be applied to required courses. Meet with a concentration adviser to discuss; provide a syllabus for each course to be considered for transfer to your concentration plan.

The program is administered by the Department of Biostatistics, located at 121 South Main Street, 7th floor.

For additional information please contact: Roee Gutman, Box G-S-121-7; Telephone: 401-863-2682; Fax: 401-863-9182; e-mail: Roee Gutman (rgutman@stat.brown.edu)

Theatre Arts and Performance Studies

The Department of Theatre Arts and Performance Studies (TAPS) is the intellectual and artistic center for the aesthetic, historical, literary, practical, and theoretical explorations of performance in global perspective – theatre, dance, speech, time-based art, and even performative “roles” in everyday life. The TAPS concentration offers three tracks with many points of overlap among them: Performance Studies, Theatre Arts, and Dance. Concentrators gain exposure to a broad spectrum of performance modes and methods – acting, directing, dance, and writing, and chose an avenue of focus among them. Everyone graduates having studied craft, gained familiarity with history, and investigated the role of performance arts in culture.

Theatre Arts Track

This concentration combines the study of dramatic literature, theatre history, performance theory, and studio work in the various theatre arts. All concentrators in Theatre Arts will gain practical experience through the study of acting and directing as well as in the technical production of plays, preparing students in the practical study of a cross-section of the vital aspects of theatre craft, including one class in either dance or speech. An essential aim of the concentration track is the engagement of students in performance procedures (acting, dancing, directing, choreography, design, playwriting, dramaturgy, etc.) in order to experience the inter-relationships among social contexts, dramatic texts and theatrical enactments. Along with practical study in craft, concentrators will graduate having studied theatre history and performance theory in global perspective. The study of theatre history provides a Theatre Arts concentrator with the necessary background to understand a variety of dramatic and theatrical forms. The study of performance theory enhances a student's ability to ask

fundamental questions about the role of theatre in social, political, cultural and cross-cultural arenas.

Students wishing to enroll as concentrators in Theatre Arts and Performance Studies and take the Theatre Arts track should see the undergraduate Theatre Arts track advisor, in order to discuss options that will best serve their interests.

Basic Theatre Arts Track Requirements -- 10 Credits

TAPS 0700	Introduction to Theatre, Dance and Performance (Required Courses)	1
TAPS 0230 or TAPS 0220	Acting Persuasive Communication	1
TAPS 0250	Introduction to Technical Theatre and Production	1
TAPS 1230	Global Theatre and Performance: Paleolithic to the Threshold of Modernity	1
TAPS 1240	Performance Historiography and Theatre History	1
TAPS 1250	Late Modern and Contemporary Theatre and Performance	1

Theatre Studies electives: 4 elective courses, one of which must be theory, history, or literature chosen in consultation with the advisor according to the area of interest (i.e., acting, direction, playwriting, design/technical theatre). Additionally, following consultation with the advisor, one of the electives may be taken outside the TAPS department.

Total Credits 10

Performance Studies Track

The Performance Studies track in the Theatre Arts and Performance Studies concentration offers a base for students interested in a variety of performance forms, performance media, or in intermedial art. A concentrator in this track will study the multiple modes in which live performance articulates culture, negotiates difference, constructs identity, and transmits collective historical traditions and memories. Because Performance Studies is not primarily invested in one performance mode over another (such as theatre or dance), a concentrator will gain exposure to a broad spectrum of performance modes. Studying ritual, play, game, festival, spectacle and a broad spectrum of "performance behaviors" under the umbrella of Performance Studies, a concentrator will graduate having investigated the role of performance in culture, including performative acts in everyday life, political enactment, ritual behavior, aesthetic or representational practices, and social role or the performance of subjectivity. The history of aesthetic performance practices (such as the histories of theatre and/or dance) will be an important part of this track, serving to ground inquiry into the broader spectrum of performance study. Students will craft their electives on this track from a wide selection of courses both within the Department of Theatre Arts and Performance Studies and across the university. The study of performance behavior across mediums such as dance, theatre, ritual, and orature allows for geographic and historical flexibility as not all cultures parse theatre from dance, nor, historically, genres of religious or political ritual from genres of entertainment, play, or game. At least one of the ten required classes must show geographic or cultural breadth, and be approved as such by the undergraduate concentration advisor. Participation in practical classes in modes of performance is also required.

Students wishing to enroll as concentrators in Theatre Arts and Performance Studies and take the Performance Studies track should see the undergraduate Performance Studies track advisor, in order to discuss options that will best serve their interests.

Basic Performance Studies Track Requirements -- 10 credits

TAPS 0700	Introduction to Theatre, Dance and Performance	1
Three of the following courses:		3
TAPS 1230	Global Theatre and Performance: Paleolithic to the Threshold of Modernity	

TAPS 1240	Performance Historiography and Theatre History	
TAPS 1250	Late Modern and Contemporary Theatre and Performance	
TAPS 1280Y	Issues in Performance Studies	
Two primarily academic courses from within the Department with Performance Studies content to be selected with your advisor, such as (but not limited to):		2
TAPS 0800I	(Re)Imagining the Body: What can a Body do?	
TAPS 1280E	Neurodiversity and Performance	
TAPS 1281G	Queer Dance	
TAPS 1281O	Acting Outside the Box: Race, Class, Gender and Sexuality in Performance	
TAPS 1281Q	Introduction to Critical Dance Studies	
TAPS 1425	Queer Performance	
TAPS 1500P	Asian American Theater Making	
TAPS 1600	Dramaturgy	
TAPS 1670	Latinx Theatre + Performance	
Two full-credit courses based in performance craft in either Dance, Acting, Directing, Playwriting, Speech, Design, Literary Arts, Visual Arts, Music, or Africana Studies approved by the concentration advisor.		2
Two additional courses in the academic study of performance and performance culture(s) from either within TAPS or throughout the University in consultation with the advisor.		2
Total Credits		10

Dance Track

The Dance track of the Theatre Arts and Performance Studies concentration engages students in the study of dance, movement, and other forms of kinesthetic performance. Emphasizing dance technique, choreography/composition, and theories and histories of global forms of dance practice, concentrators in this track will study how multiple global dance forms articulate culture, negotiate difference, construct identity, and transmit collective historical traditions. Concentrators will receive instruction in composition and technique, and engage with dance, theatre, and performance production within the department to understand dance within a network of performance practices.

Basic Dance Track Requirements -- 10 credits

TAPS 0700	Introduction to Theatre, Dance and Performance	1
Critical Topics and Global Perspectives - three courses. Students should work with their advisor to ensure their courses offer theoretical and geographic breadth. Courses could include, for example:		3
TAPS 1230	Global Theatre and Performance: Paleolithic to the Threshold of Modernity	
TAPS 1240	Performance Historiography and Theatre History	
TAPS 1250	Late Modern and Contemporary Theatre and Performance	
TAPS 1281G	Queer Dance	
TAPS 1281Q	Introduction to Critical Dance Studies	
TAPS 1330	Dance History: The 20th Century	
TAPS 1425	Queer Performance	
TAPS 1670	Latinx Theatre + Performance	
Techniques of the Body - two courses selected in consultation with an advisor, such as the following:		2
TAPS 0310	Beginning Modern Dance	
TAPS 0330	Mande Dance, Music and Culture	
TAPS 0930C	The Actor's Instrument: Stage Movement for Actors and Directors	
TAPS 1000	Intermediate Dance	

TAPS 1340	Dance Styles	
TAPS 1341	Introduction to Ballet	
TAPS 1342	Ballet II	
TAPS 1343	Ballet III (Intermediate/Advanced Ballet)	
TAPS 1344	Advanced Ballet with Repertory	
TAPS 1348	Contemporary Dance Studio Project	
TAPS 1390	Contemporary Mande Performance	
Directing/Compositional Strategies - two courses selected in consultation with an advisor from courses such as the following:		2
TAPS 0320	Dance Composition	
TAPS 0360	Viewpoints Technique: The Moving Body in Relation to Time, Space, and Ensemble	
TAPS 1281E	Directing Theory and Practice	
TAPS 1320	Choreography	
Design or Production - one course selected in consultation with an advisor from the following:		1
TAPS 0250	Introduction to Technical Theatre and Production	
TAPS 0260	Stage Lighting	
TAPS 1100	Stage Management	
TAPS 1251C	Scenic Properties and the Props Artisan	
TAPS 1280F	Introduction to Set Design	
TAPS 1281A	Director/Designer Collaborative Studio	
TAPS 1281M	Introduction to Costume Construction	
TAPS 1300	Advanced Set Design	
One additional TAPS elective		1
Total Credits		10

For all concentrators, regardless of track:

In cases where dual concentrations are declared, the Department allows two courses to be counted toward both concentrations.

Capstone Project

Every concentrator will complete a capstone and 5-page reflection paper by the final semester of their senior year. The purpose of the capstone is to synthesize the core tenets of theory and practice from our concentration learning objectives in the form of a student-initiated creative project, experience, or a non-honors research paper. Students pursuing Honors fulfill the capstone requirement by successfully completing a senior thesis (see Honors section).

Please note that while the experience being reflected on for the Capstone may occur as early as the junior year, the reflective paper must be written and submitted in the senior year.

The 5-page reflection paper must be written and submitted in the final semester of the senior year, and completes the capstone requirement. The following options can qualify as the experiential component of a capstone project, and can be executed during junior or senior year.

- Participation in a Senior Slot Production.
- Major participation in a TAPS Department / Sock & Buskin Production. (i.e. acting, assistant directing, designer, dramaturg, stage manager)
- Extension of an existing curricular, co-curricular, or extra-curricular project.
- Revision or expansion of an existing final paper from any prior TAPS theory or history class.
- Major participation in a non-departmental campus production, performance or academic event. (i.e. student theatre, student dance (<https://taps.brown.edu/student-opportunities/student-groups/>) group (<https://taps.brown.edu/student-opportunities/student-groups/>)s, self-produced performance or event at the Granoff)

Students must create a Capstone project plan in consultation with the TAPS DUS. Finalized project proposals must be submitted via email for approval by the DUS no later than October 1st for students graduating in spring, and September 15th for students graduating in fall.

Capstone proposals must be approved the TAPS DUS.

Capstone Reflection Paper Due Dates

- For students graduating in spring, the capstone reflection paper is due March 1st of the senior year.
- For students graduating in fall, the capstone reflection paper is due November 1st of the senior year.

Capstone Reflection Paper

Please email the DUS a 5-page reflection paper addressing the following writing points:

- A brief description of the project completed, including details about who, what, when and where the project took place. If you revised a paper, detail which class the paper was originally written for; and how you revised the paper, etc.
- An examination of how you used knowledge, skills and research methods acquired in the concentration to conceptualize, do and complete the project, with a frank assessment of the project's success or ways in which it could have been improved.

The DUS will assess and approve the paper if all of the criteria above are met. The reflection will be assessed for clarity, honesty and depth of self-reflection and encapsulation of your experience of the TAPS curriculum.

Please note: Students should refer to the Brown Arts Institute student funding (<https://arts.brown.edu/institute/grants/rolling-grants/>) opportunities and consult with the staff regarding space availability and support.

Senior Honors Thesis

Honors are awarded for theses in all concentration tracks, and satisfies the capstone requirement. Candidates for the senior honors program should have an outstanding academic record, must apply to the Department for approval, and enroll in TAPS 1990 in Semesters VII and VIII. All theses are substantive pieces of writing. Some theses are strictly academic. Other honors theses may include a creative component (such as the directing of a play, a solo performance piece, the study and performance of a major role, or the design of a production) but the thesis itself will include a critical, written work based in research relative to that artwork. For creative work submitted for honors, the essay should accompany the play/ performance, reporting on the research and the process of creation although the play/ performance itself can count as the substantive written work. Please note that departmental support is not available for productions at this time.

Students should refer to the Brown Arts Institute student funding (<https://arts.brown.edu/institute/grants/rolling-grants/>) opportunities and consult with the staff regarding space availability and support.

Students should contact the honors advisor by the end of Semester V to discuss proposals, thesis guidelines, and scheduling TAPS 1990 the honors thesis course in Semesters VII and VIII.

- For students graduating in spring submit proposals to the Department in Semester VI by April 1st.
- For students graduating in fall submit proposals to the Department in Semester VI by October 1st.

Proposals should be submitted electronically to taps@brown.edu. (taps@brown.edu)

Urban Studies

The Urban Studies program teaches students to analyze the city, urban life, and urbanization through a variety of disciplinary lenses. Students learn where cities come from, how they grow, thrive, and decline, how they are organized, and how to construct meaningful, inclusive, secure, and sustainable places. The curriculum examines how urban problems arise, how they have been previously addressed, and how to plan cities of the future. Concentrators enjoy the breadth of courses in American Studies, economics, history, literature, history of art and architecture, political science, sociology, and planning as well as provide in-depth courses integrating those perspectives. We introduce the fundamentals of Urban Studies scholarship as well as intense examination of an urban problem in

focused seminars. These advanced seminars offer opportunities to write extensive and synthetic interdisciplinary analyses that serve as capstones to the concentration. The program's 10-course curriculum provides sufficient flexibility to allow students to pursue specific urban interests or to take courses in urban focus areas of Built Environment; Humanities; Social Sciences; and Sustainable Urbanism. The Program insures that students master at least one basic research methodology and perform research or fieldwork projects, which may result in an honors thesis. Fieldwork training includes working with local agencies and nonprofit organizations on practical urban problems. Capstone projects entail original research papers in Urban Studies seminars; academically supervised video, artistic, or community service projects; and Honors Theses for eligible concentrators.

Concentrators who are especially interested in making deeper connections between their curriculum and long-term engaged activities such as internships, public service, humanitarian and development work, and many other possible forms of community involvement might consider the Engaged Scholar Program (<https://www.brown.edu/academics/urban-studies/curriculum/engaged-scholars-program/>) in US. The program combines preparation, experience, and reflection to offer students opportunities to enhance the integration of academic learning and social engagement.

For a concentration, the program requires ten courses selected from four course groups:

Introduction (choose one):		1
POLS 0220	City Politics	
URBN 0210	The City: An Introduction to Urban Studies	
URBN 0230	Urban Life in Providence: An Introduction	
Research Methods (choose one):		1
APMA 0650	Essential Statistics	
APMA 1650	Statistical Inference I	
APMA 1660	Statistical Inference II	
CLPS 0900	Statistical Methods	
ECON 1620	Introduction to Econometrics	
PHP 1501	Essentials of Data Analysis	
POLS 1600	Political Research Methods	
SOC 1020	Methods of Social Research	
SOC 1100	Introductory Statistics for Social Research	
Core Courses (3 courses required, in at least 3 disciplines, such as American studies, anthropology, economics, education, English, history, history of art and architecture, political science, and sociology, as well as urban planning when staffing allows)		3
AMST 1612D	Cities of Sound: Place and History in American Pop Music	
ANTH 1201	Introduction to Geographic Information Systems and Spatial Analysis	
ANTH 1236	Urban Life: Anthropology in and of the City	
ANTH 1255	Anthropology of Disasters	
ECON 1410	Urban Economics	
EEPS 1320	Introduction to Geographic Information Systems for Environmental Applications	
ENGL 0100N	City Novels	
ENGL 0700R	Modernist Cities	
ENGL 1711D	Reading New York	
ENVS 1400	Sustainable Design in the Built Environment	
ENVS 1580	Environmental Stewardship and Resilience in Urban Systems	
HIAA 0100	Introduction to Architectural Design Studio	
HIAA 0710	The Other History of Modern Architecture	
HIAA 0770	Architecture and Urbanism of Africa	
HIAA 0850	Modern Architecture	

HIAA 0860	Contemporary Architecture	
HIAA 0861	City and Cinema	
HIST 1550	American Urban History, 1600-1870	
HIST 1551	American Urban History, 1870-1965 (HIST 1550::American Urban History to 1870)	
POLS 0220	City Politics	
POLS 1310	African American Politics	
SOC 1330	Remaking the City	
SOC 1340	Principles and Methods of Geographic Information Systems	
SOC 1640	Social Exclusion	
URBN 0074	Nineteenth-Century Architecture	
URBN 1000	Fieldwork in the Urban Community	
URBN 1200	The United States Metropolis, 1945-2000	
URBN 1250	The Political Foundations of the City	
URBN 1260	Housing in America	
URBN 1270	Urban Politics and Urban Public Policy	
Seminar courses (choose three) ²		3
AMST 1903E	City of the American Century: The Culture and Politics of Urbanism in Postwar New York City	
HIAA 1850H	Berlin: Architecture, Politics and Memory	
HIAA 1910A	Providence Architecture	
SOC 0310	Theory and Practice of Engaged Scholarship	
URBN 1870A	American Culture and the City	
URBN 1870D	Downtown Development	
URBN 1870G	Ancient Cities: From the Origins Through Late Antiquity	
URBN 1870I	The Changing American City	
URBN 1870J	The Politics of Community Organizing	
URBN 1870K	Jerusalem Divided: Politics and Cultural Heritage	
URBN 1870M	Urban Regimes in the American Republic	
URBN 1870N	The Cultural and Social Life of the Built Environment	
URBN 1870Q	Cities in Mind: Modern Urban Thought and Theory	
URBN 1870S	The City, the River, and the Sea: Social and Environmental Change at the Water's Edge	
URBN 1870T	Transportation: An Urban Planning Perspective	
URBN 1870V	City Senses: Urbanism Beyond Visual Spectacle	
URBN 1870Z	Housing Justice	
URBN 1871B	Berlin: Global Metropolis (1945-2020)	
URBN 1941	How to Shape a City: An Introduction to Real Estate Development	
Complementary Curriculum (Total of 2 courses required):		2
1. Any course from the Introductory or Core Curriculum options above not used to fulfill another requirement		
2. OR Any of the following:		
AFRI 0600	Race, Gender, and Urban Politics	
AFRI 0620	African-American Life in the City	
AMST 1611A	Making America: Twentieth-Century U.S. Immigrant/Ethnic Literature	
AMST 1903G	Oral History and Community Memory	
AMST 1904M	Charles Chapin and the Urban Public Health Movement	
ANTH 0450	Inequality, Sustainability, and Mobility in a Car-Clogged World	

ANTH 1301	Anthropology of Homelessness
ARCH 0317	Heritage in the Metropolis: Remembering and Preserving the Urban Past
ARCH 0400	City and Sanctuary in the Ancient World
ARCH 1150	Cities and Urban Space in the Ancient World
ARCH 1155	Cities, Colonies and Global Networks in the Western Mediterranean
ARCH 1200F	City and the Festival: Cult Practices and Architectural Production in the Ancient Near East
ARCH 1600	Archaeologies of the Near East
ARCH 1720	How Houses Build People
ARCH 1900	The Archaeology of College Hill
ECON 1370	Race and Inequality in the United States
ENGL 1710I	Harlem Renaissance: The Politics of Culture
ENGN 1930S	Land Use and Built Environment: An Entrepreneurial View
ENVS 0520	Wild Literature in the Urban Landscape
ENVS 1410	Environmental Law and Policy
ENVS 1555	Local Food Systems and Urban Agriculture
HIAA 0550	Painters, Builders, and Bankers in Early Modern Italy
HIAA 0560	Constructing the Eternal City: Popes and Pilgrims in Early Modern Rome
HIAA 1560C	Renaissance Venice and the Veneto
HIAA 1850G	Contemporary American Urbanism: City Design and Planning, 1945-2000
HIST 1140	Samurai and Merchants, Prostitutes and Priests: Japanese Urban Culture in the Early Modern Period
HIST 1741	Capitalism, Land and Water: A World History: 1848 to the present
HIST 1961B	Cities and Urban Culture in China
HIST 1965A	City as Modernity: Popular Culture, Mass Consumption, Urban Entertainment in Nineteenth-Century Paris
HIST 1967R	History of Rio de Janeiro
HIST 1979J	London: 1750 to the Present
HIST 1979L	Urban History of Latin America
HIST 1980T	Modernity, Jews, and Urban Identities in Central Europe (JUDS 1718)
IAPA 1700A	Program Evaluation
ITAL 1580	Word, Image and Power in Early Modern Italy
JAPN 0710	Japanese Cities: Tokyo and Kyoto
POLS 1760	Infrastructure Policy
POLS 1824D	Power and Prosperity in Urban America
RUSS 1440	Imagining Moscow: Utopia and Urban Spaces in 20th-Century Russian Culture
STS 1701Q	The Fate of the Coast
SOC 0130	American Heritage: Democracy, Inequality, and Public Policy
SOC 1270	Race, Class, and Ethnicity in the Modern World
SOC 1540	Human Needs and Social Services
3. RISD courses approved by the Urban Studies Program each semester as applicable to the Urban Studies concentration.	

4. Any course taken at another university in the US or abroad and approved by the Urban Studies Program each semester (2 maximum)

Total Credits 10

¹ There are also other statistics courses offered by other departments (e.g., Applied Mathematics, Cognitive Sciences, and Psychology). On occasion, an alternative research skills course may be approved for a specific concentration.

² The courses provide opportunities to undertake research or fieldwork projects and all qualify as "capstone" experiences.

³ No more than **two** may be used to satisfy the requirements of this concentration. The RISD course is identified in the student's record at Brown by a RISD course code.

Off-Campus Courses: Some courses taken outside Brown (e.g., in study abroad programs) may be used for credit towards the concentration *if the material covered directly corresponds to that taught in Brown courses, or is relevant to the complementary curriculum*. Such courses will be approved each semester by the concentration advisor.

Honors

The Urban Studies Honors Program is intended for students who have been highly successful in their Urban Studies concentration coursework and who want the opportunity to pursue a research project in more depth than is possible in an undergraduate seminar. Such a project requires a high degree of initiative and dedication. It also requires significant amounts of time and energy, as well as demonstrative skills in research and writing. Students must apply in the middle of the second semester of their junior year. (This applies to students who will complete the degree requirements in December, as well as May.) The student's honors application must include a brief research proposal, a list of completed urban coursework, and must be signed by a faculty member willing to serve as the student's honors advisor. During the Fall and Spring of the senior year, honors candidates must complete two additional courses beyond the ten courses required for the concentration: URBN 1971 Senior Honors Thesis I in Urban Studies(S/NC) and URBN 1972 Senior Honors Thesis II in Urban Studies (grade). The candidate's final thesis must be of outstanding quality, in order to qualify for honors.

Visual Art

The Visual Art concentration engages in artistic practice across a wide range of media: painting, sculpture, printmaking, drawing, photography, digital imaging, book arts, and film. Courses in art history combine with these to frame the direction of the concentrator's work and to develop their critical thinking skills. Students are encouraged to cultivate an informed and thoughtful individual perspective. Students in the Department of Visual Art enjoy cutting-edge facilities and a knowledgeable faculty. These two resources inspire creativity and pleasure in our concentrators while they explore the discipline. Students acquire the intellectual and practical tools to make art as well as to interpret and critique the world of images. Students also have the opportunity to take courses at the neighboring Rhode Island School of Design (RISD). All Visual Art (VISA) courses are graded S/NC (<https://www.brown.edu/academics/college/degree/policies/grade-options/>).

Concentration Program Requirements

Concentration Requirements:

VISA 0100	Studio Foundation (Prerequisite for all upper-level studio courses)	1
2 of the following 5 discipline-based foundation courses are required.		2
VISA 0120	Foundation Media (This course is a prerequisite for upper-level Media courses such as New Genre and Video Art)	
VISA 0130	Sculpture Foundation	
VISA 0140	Photography Foundation	
VISA 0150	Digital 2D Foundation	

VISA 0160	Foundation Painting	
5 additional upper level studio courses are required. A minimum of three elective studio courses must be taken in the Brown Visual Art Department		5
3 HIAA courses are required:		
HIAA 0010	A Global History of Art and Architecture	1
1 course covering Modern or Contemporary Art History such as those listed below		1
HIAA 0801	Art After '68	
or HIAA 0810	20th Century Sculpture	
or HIAA 0870	20th Century British Art: Edwardian to Contemporary	
One additional History of Art and Architecture course.		1
Senior Thesis Exhibition: which does not carry academic credit, is required for graduation (usually presented during the seventh or eighth semester).		
Total Credits		11

Honors

The project is a two-semester enterprise and counts as two courses taken for graduation credit VISA 1800C (Sem I) and VISA 1990 (Sem II) but will not count as two of the eleven courses needed for the visual art concentration. Students that are planning to complete their degree requirements in December must apply for honors by December 5 of the previous year.



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