MATHEMATICS: MATHEMATICS TEACHING, BSLAS

for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Mathematics, Mathematics Teaching Concentration

Mathematics is a broad discipline that contains a range of areas of specialization within it. The required core courses provide fundamental background for mathematics in general. The concentrations allow the student to broaden this background or begin to specialize. Students must complete the core courses and a concentration.

An entering student in mathematics should have academic preparation to enroll in MATH 220 (http://catalog.illinois.edu/search/?P=MATH %20220) during the first semester. Admission to MATH 220 (http:// catalog.illinois.edu/search/?P=MATH%20220) requires an acceptable ALEKS score. A student should attain grades of B in calculus in order to complete the advanced courses successfully.

Undergraduate programs in Mathematics

Actuarial Science, BSLAS (http://catalog.illinois.edu/undergraduate/las/actuarial-science-bslas/)

Mathematics, BSLAS (http://catalog.illinois.edu/undergraduate/las/mathematics-bslas/#text)

Mathematics & Computer Science, BSLAS (http://catalog.illinois.edu/undergraduate/eng_las/mathematics-computer-science-bslas/)

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This concentration fulfills state licensure requirements to teach high school math (grades 9-12) through the AP/honors level.

Time to degree completion varies. Minimum time to completion is 8 semesters, with some students requiring 10 semesters. Transfer students may need 10 total semesters combined to complete the program. Please see the LAS section in the transfer handbook (https://transferhandbook.illinois.edu/las/)for more information.

To remain in good standing in this program and be recommended for licensure, candidates are required to maintain a cumulative grade-point average of 2.5 (A= 4.0).

Departmental distinction: Distinction will be awarded on the basis of selection of 400-level courses in mathematics and the grade point average. Graduation with High Distinction or Highest Distinction in Mathematics requires participation in the Program for Distinction in Mathematics or Mathematics Education. Full details are available at the departmental website.

Graduation Requirements

Minimum hours required for graduation: 120 hours.

Minimum hours required major and supporting course work: Normally equates to 77-81 hours including 27-29 hours of mathematics beyond calculus, 3-4 hours of computer science, and 39 hours for the Teacher Education Minor in Secondary School Teaching. Twelve hours of 300- and 400-level courses in the major must be taken on this campus.

University Requirements

Minimum of 40 hours of upper-division coursework, generally at the 300- or 400-level. These hours can be drawn from all elements of the degree. The university and residency requirements can be found in the Student Code (https://studentcode.illinois.edu/article3/part8/3-801/) (§ 3-801) and in the Academic Catalog (http://catalog.illinois.edu/general-information/degree-general-education-requirements/).

General Education Requirements

Follows the campus General Education (Gen Ed) requirements (https://courses.illinois.edu/gened/DEFAULT/DEFAULT/). Some Gen Ed requirements may be met by courses required and/or electives in the program.

Students in this concentration must complete the Teacher Education Minor in Secondary School Teaching (39 hours).

Code	Title	Hours
Composition I		4-6
Advanced Composition		3
fulfilled by EDUC 202		
Humanities & the Arts (6 hours)		6
fulfilled by EDUC 202 and any other course approved as Humanities & the Arts		
Natural Sciences & Technology (6 hours)		6
Social & Behavioral Sciences (6 hours)		6
fulfilled by EPSY 201 any other course approved as Social & Behavioral Sciences		
Cultural Studies: Non-Western Cultures (1 course)		3
fulfilled by EDUC 201		
Cultural Studies: US Minority Cultures (1 course)		3
Cultural Studies: Western/Comparative Cultures (1 course)		3
Quantitative Reasoning (2 courses, at least one course must be Quantitative Reasoning I)		6-10
fullfilled by MATH 220 or MATH 221, MATH 231, MATH 241; CS 101 or CS 124 or CS 125		

Language Requirement (Completion of the fourth semester or equivalent of a language other than English, or completion of the third semester in two different languages other than English is required)		0-20

Major Requirements

Code	Title	Hours
Foundation Courses		
The following courses must be completed or in progress when students apply to the Secondary Education minor.		
MATH 220	Calculus	4-5
or MATH 221	Calculus I	
MATH 231	Calculus II	3
MATH 241	Calculus III	4
Three advanced mathematics courses, including		
MATH 347	Fundamental Mathematics	3
Required Core Courses		
MATH 416	Abstract Linear Algebra (Students may not receive credit for both MATH 416 and either ASRM 406 or MATH 415.)	3
MATH 417	Intro to Abstract Algebra	3
or MATH 427	Honors Abstract Algebra	
MATH 424	Honors Real Analysis (If MATH 424 or MATH 447 is completed, a requirement for the Math Doctoral Preparation concentration has been satisfied.)	3
or MATH 444	Elementary Real Analysis	
or MATH 447	Real Variables	
MATH 461	Probability Theory (If STAT 400 is completed, a requirement for the Data Optimization concentration has been satisfied.)	3-4
or STAT 400	Statistics and Probability I	
CS 101	Intro Computing: Engrg & Sci	3-4
or CS 124	Introduction to Computer Science I	
or CS 125	Introduction to Computer Science	
Teacher Education Minor in Secondary School Teaching (http://catalog.illinois.edu/undergraduate/education/secondary/)		39
Mathematics Teaching Courses		
MATH 402	Non Euclidean Geometry	3
or MATH 403	Euclidean Geometry	
MATH 453	Number Theory	3
One additional 400-level or approved 500-level mathematics course (Courses awarded S/U grades may not be used to fill this requirement.)		3
Total Hours		**77-80**

Requirements for the Teacher Education in Secondary School Teaching Minor

Code	Title	Hours
Professional Education Required Courses		
EDUC 201	Identity and Difference in Education [1]	3
EDUC 202	Social Justice, School and Society [1]	3
CI 401	Introductory Teaching in a Diverse Society	3
CI 403	Teaching a Diverse High School Student Population	3
CI 404	Teaching and Assessing Secondary School Students	3
CI 473	Disciplinary Literacy	3
EPSY 201	Educational Psychology [1,2]	3
EPSY 485	Assessing Student Performance	3
SPED 405	General Educator's Role in Special Education	3
EDPR 442	Educational Practice in Secondary Education	12
Total Hours		**39-40**

[1] EDUC 201, EDUC 202 and EPSY 201 can be completed at any time during the degree and are not pre-requisites to apply for the minor.
[2] PSYC 100 is a pre-requisite for EPSY 201.

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Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a fourth level of a language other than English. See the corresponding section on the Degree and General Education Requirements page *(http://catalog.illinois.edu/general-information/degree-general-education-requirements/).*

First Year

First Semester	Hours
Free Elective course	1
MATH 220 or 221	4
Composition I or General Education course	4
Language Other Than English (3rd level)	4
PSYC 100	4
	17

Total Hours 17

First Year

Second Semester	Hours
MATH 231	3
CS 101, 124, or 125	3
General Education course or Composition I	3
Language Other Than English (4th level)	4

	Hours
EDUC 201	3
	16

Total Hours 16

Second Year

First Semester	Hours
MATH 241	4
MATH 347	3
EPSY 201	3
General Education course	3
General Education course	3
	16

Total Hours 16

Second Year

Second Semester	Hours
MATH 416	3
MATH 461 or STAT 400	3
EDUC 202	3
General Education course	3
Free Elective course	3
	15

Total Hours 15

Third Year

First Semester	Hours
MATH 417 or 427	3
MATH 402 or 403	3
General Education course	3
Advanced Mathematics course	3
Free Elective course	2
	14

Total Hours 14

Third Year

Second Semester	Hours
MATH 424, 444, or 447	3
MATH 453	3
Advanced Mathematics course	3
CI 401	3
CI 473	3
	15

Total Hours 15

Fourth Year

First Semester	Hours
MATH 400-500 level course	3
CI 403	3
SPED 405	3
EPSY 485	3
	12

Total Hours 12

Fourth Year

Second Semester	Hours
EDPR 442	12
CI 404	3
	15

Total Hours 15

Total Hours: 120

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1. Students will be able to construct proofs and recognize when a proof is complete.
2. Students will be able to use theorems in order to solve problems without going back to first principles.
3. Students will have technical proficiency in calculus and linear algebra.
4. Students will be able to translate real-world problems into mathematics to solve them.

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Department of Mathematics website (https://math.illinois.edu/)
Mathematics faculty (https://math.illinois.edu/directory/faculty/)
Math Advising (https://math.illinois.edu/academics/undergraduate-program/undergraduate-advising/)
Math Advising email (mathadvising@illinois.edu)

Overview of College Admissions & Requirements: Liberal Arts & Sciences (http://catalog.illinois.edu/schools/las/academic-units/)

College of Liberal Arts and Sciences website (https://las.illinois.edu/)