ACTUARIAL SCIENCE, BSLAS

for the degree of Bachelor of Science in Liberal Arts and Sciences in Actuarial Science

This major is sponsored by the Department of Mathematics, and is an interdisciplinary subject involving mathematics, statistics, and financial economics. It is designed to prepare students to enter the actuarial profession, as well as to provide a background in quantitative finance and risk management.

Undergraduate programs in Mathematics

- Actuarial Science, BSLAS (p. 1)
- 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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Departmental distinction: To qualify for distinction, the student must have a grade point average in ASRM courses of at least 3.25, and pass at least two examinations offered by the professional actuarial societies. To qualify for high or highest distinction, the student must have passed at least three professional exams, with highest distinction going to those whose grade point averages in mathematics are at least 3.75. Finance courses and additional professional exams may also be given consideration in close decisions.

Graduation Requirements

Minimum hours required for graduation: 120 hours.

Minimum hours required major and supporting course work normally equates to 58-61 hours including 32-33 hours of actuarial courses beyond calculus. Twelve hours of 300- or 400-level courses in the major must be taken on this campus.

University Requirements

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.

Code	Title	Hours
Composition I		4-6
Advanced Composition		3
Humanities & the Arts (6 hours)		6
Natural Sciences & Technology (6 hours)		6
Social & Behavioral Sciences (6 hours)		6
Cultural Studies: Non-Western Cultures (1 course)		3
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
fulfilled by MATH 220 or MATH 221, MATH 231, MATH 241		
Language Requirement (Completion of the fourth semester or equivalent of a language other than English is required)		0-20

Code	Title	Hours
Orientation and Professional Development		
LAS 101	Design Your First Year Experience	1
OR		
LAS 100 & LAS 101	Success in LAS for International Students and Design Your First Year Experience	3
OR		
LAS 102	Transfer Advantage	1
Total Hours		**1 or 3**

Code	Title	Hours
Major Requirements		
Calculus sequence:		11-12
MATH 220	Calculus	
or MATH 221	Calculus I	
MATH 231	Calculus II	
MATH 241	Calculus III (or equivalent)	
Select one of the following:		3-4
ASRM 195	Foundations of Data Management	
CS 101	Intro Computing: Engrg & Sci	
CS 124	Introduction to Computer Science I	
CS 125	Introduction to Computer Science	
ASRM 210	Theory of Interest	3
Select one of the following sequences (ASRM preferred):		7-8
ASRM 401 & ASRM 402	Actuarial Statistics I and Actuarial Statistics II	
OR		
STAT 400 & STAT 410	Statistics and Probability I and Statistics and Probability II	
ASRM 406	Linear Algebra with Financial Applications	3
ASRM 441	Statistics for Risk Modeling I	4
Select three or more of the following for a total of at least 12 credits:		12
ASRM 409	Stochastic Processes for Finance and Insurance	
ASRM 410	Investments and Financial Markets	
ASRM 442	Statistics for Risk Modeling II	
ASRM 451	Basics of Statistical Learning	
ASRM 454	Generalized Linear Models	
ASRM 455	Predictive Analytics	
ASRM 461	Loss Models	

ASRM 462	Advanced Loss Models, Credibility, and Ratemaking	
ASRM 469	Casualty Actuarial Mathematics	
ASRM 471	Life Contingencies I	
ASRM 472	Life Contingencies II	
Select an additional course from the above list or an approved section of ASRM 499		3
Announcements for ASRM 499 topics courses will include information about whether the topic is approved for use in the major, as will the course syllabus.		
FIN 221	Corporate Finance	3
Three additional courses from:		9
ACCY 200	Fundamentals of Accounting	
ECON 302	Inter Microeconomic Theory	
ECON 303	Inter Macroeconomic Theory	
FIN 230	Introduction to Insurance	
FIN 300	Financial Markets	
FIN 321	Advanced Corporate Finance	
FIN 431	Property-Liability Insurance	
FIN 432	Managing Market Risks for Financial Institutions	
FIN 434	Employee Benefit Plans	
Total Hours		**58-61**

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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
ASRM 195, CS 101, CS 105, or CS 124	3
Language Other Than English (3rd level)	4
Composition I or General Education course	4
	16

Total Hours 16

First Year

Second Semester	Hours
Free Elective course	3
MATH 231	3
General Education course	3
Language Other than English (4th level)	4
General Education course or Composition I	3
	16

Total Hours 16

Second Year

First Semester	Hours
MATH 241	4
ASRM 210	3
FIN 221	3
General Education course	3
General Education course	3
	16

Total Hours 16

Second Year

Second Semester	Hours
ASRM 401 or STAT 400	4
ASRM 406	3
ACCY, ECON , or FIN from list	3
General Education course	3
General Education course	3
	16

Total Hours 16

Third Year

First Semester	Hours
ASRM 402 or STAT 410	3
ASRM 450	3
ACCY, ECON, or FIN from list	3
General Education course	3
General Education course	3
	15

Total Hours 15

Third Year

First Semester	Hours
ASRM 400-level from list	3
ASRM 400-level from list	3
ACCY, ECON, or FIN from list	3
General Education course	3
General Education course	3
	15

Total Hours 15

Fourth Year	
First Semester	**Hours**
ASRM 400-level from list	3
ASRM 400-level from list	3
Free Elective course	3
Free Elective course	4
	13
Total Hours 13	

Fourth Year	
Second Semester	**Hours**
ASRM 400-level from list or Approved ASRM 499	3
Free Elective course	3
Free Elective course	3
Free Elective course	4
	13
Total Hours 13	

Total Hours: 120

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Student Learning Outcomes

1. Have sufficient exposure to actuarial and financial mathematics to be familiar with at least 80% of the material on five of the preliminary Society of Actuaries (SOA) credentialing exams.
2. Be familiar with the role of insurance in society, basic economic theory, and the basics of how insurance and financial markets operate.
3. Have familiarity with several of the technical tools, computer languages or software packages used by actuaries.
4. Develop communication, leadership and teamwork skills, and understand their importance in the actuarial industry.
5. Be able to apply this knowledge and these skills in new combinations and to new problems.

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Actuarial Science and Risk Management (https://asrm.illinois.edu/)

Actuarial Science faculty (https://asrm.illinois.edu/directory/faculty/)
ASRM-advising@illinois.edu

Department of Mathematics website (https://math.illinois.edu/)

Overview of College Admissions & Requirements: Liberal Arts & Sciences (http://catalog.illinois.edu/schools/las/)
College of Liberal Arts and Sciences website (https://las.illinois.edu/)