UNDERGRADUATE

Mathematical Studies

College of Arts and Sciences
Department of
Mathematics and Statistics

SIUe

siue.edu/math

Mathematical Studies at SIUE

- How does a statistician design an experiment to test a new drug?
- What is an efficient algorithm to solve a differential equation, and when does it work?
- How do you determine a fair price for an annuity?
- Given a complex network of nodes and edges, what is the shortest path from one vertex to another?
- How can you teach problem solving in a diverse high school classroom?

These are only some of the questions to be explored in our five undergraduate study options. We have a faculty-to-undergraduate student ratio of five to one, so our students receive personalized attention from faculty recognized for outstanding teaching and excellent research.

Degrees Available at SIUE

Bachelor of Arts, Mathematical Studies

Bachelor of Science, Mathematical Studies

Specializations available in the following:

- Actuarial Science
- Applied Mathematics
- Pure Mathematics
- Statistics

Professional Educator Licensure (9-12) Program

What can I do with a degree in math?

Professionals holding positions in the mathematics field as mathematicians, statisticians, and actuaries consistently rank their careers at the top of surveys on job satisfaction and security. According to The Bureau of Labor Statistics, the job outlook in these fields remains strong, and growth is projected at 25% over the next 10 years. While salaries vary by field, employment type and education level, median national salaries include:

- Actuary: $93,000
- Mathematician: $101,000
- Statistician: $75,000

Most professionals in the field of mathematics hold a master's or doctoral degree and our students are no exception. Our graduates have attended PhD programs at Indiana University, Texas A&M, St. Louis University, the University of Missouri, and many others.

SIUE graduates are employed in government and corporate organizations and hold positions with Horace Mann, Juggle, Centene, CIGNA, Delta Dental, Boeing, United States governmental agencies and several others.

Global Experience

With a diverse group of faculty members from China, Greece, Japan, Korea, Malaysia, the Philippines and the United States, SIUE is an ideal place for an international student to receive individual attention from faculty members who will help propel them toward graduate school or their chosen career. Our undergraduate program is compatible with study abroad opportunities and our students have most recently studied in Spain, Egypt and Mexico.

SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE
COLLEGE OF ARTS & SCIENCES

Sample Curriculum for the Bachelor of Science in Mathematical Studies, Specialization in Actuarial Science

	Fall Semester		Spring Semester	
Year 1	**MATH 150** Calculus I (FQR)	5	**MATH 152** Calculus II (BPS)	5
	ECON 111 Principles of Macroeconomics (BSS)	3	Breadth Humanities (BHUM)/Experience Global Cultures (EGC)	3
	ENG 101 English Composition I	3	**ECON 112** Principles of Microeconomics (BSS)	3
	RA 101 Reasoning and Argumentation	3	ACS 101 Public Speaking	3
	FST 101 Succeeding & Engaging at SIUE	1	ENG 102 English Composition II	3
	Total Credits	15	Total Credits	17
Year 2	MATH 165 Introduction to Programming and Problem Solving	3	MATH 223 Logic and Mathematical Reasoning	4
	MATH 250 Calculus III (BPS)	4	MATH 305 Differential Equations	3
	MATH 340 Theory of Interest	3	STAT 380 Statistics for Applications (BICS, EL)	3
	PHYS 151 University Physics I (BPS)	4	**ACCT 200** Fundamentals of Financial Accounting	3
	PHYS 151L University Physics I Lab (EL)	1	Breadth Fine & Performing Arts (BFPA)	3
	Total Credits	15	Total Credits	16
Year 3	MATH 321 Linear Algebra I	3	STAT 480B Introduction to Mathematical Statistics	3
	STAT 480A Introduction to Mathematical Statistics	3	STAT 486A Actuarial Mathematics	3
	FIN 320 Finance Management and Decision Making	3	Breadth Life Science (BLS)	3
	MATH 350 Introduction to Analysis	4	CMIS or FIN Elective	3
	Health Experience (EH)	3	Interdisciplinary Studies (IS)/Experience US Cultures (EUSC)	3
	Total Credits	16	Total Credits	15
Year 4	STAT or OR Elective	3	CMIS or FIN Elective	3
	MATH 498 Senior Seminar	2	STAT or OR Elective	3
	CMIS or FIN Elective	3	MATH 499 Senior Project	2
	STAT 482 Regression Analysis	3	Elective	4
	Elective	3	Total Credits	14
	Total Credits	14		
			Total Hours	**120**

Transfer Students: To maximize your transfer experience, complete the **bold** course requirements pre-transfer and satisfy either the Illinois Articulation Initiative (IAI) General Ed Core or receive an AA, AS or AAT (early childhood, special ed or math) degree from an IAI community college. If minor requirements are shown, discuss careful course selection with the academic advising contact listed. Visit siue.edu/transfer to find course equivalency guides.

Admission Requirements

For purposes of this department, the GPA in university mathematics/statistics/operations research courses will be computed on the basis of all courses attempted. In the case of repeated attempts on the same SIUE mathematics/statistics/operations research course, the grades for the second and all subsequent attempts will be used in computing the GPA.

To be admitted to the mathematics and statistics program, students must satisfy one of the following:

- Complete MATH 120 and 125, or mathematics courses having these as prerequisites (or equivalent courses at another accredited institution of higher education), have a GPA of 2.0 or higher in all university mathematics courses, and have a GPA of 2.0 or higher in all SIUE courses taken.
- Complete in high school seven semesters of university preparatory mathematics courses, including a course in trigonometry, and have no grade lower than a C in those courses. Students who do not qualify for admission into an academic program in the department but hope to seek admission later are encouraged to obtain advice from a faculty member in the department.

For purposes of computing the GPA of a student seeking admission, the student may not use credit hours earned through proficiency, transfer, CLEP or from a course, after credit has been received for similar or more advanced coursework in the subject at SIUE or elsewhere. For readmission to the department, students must have a C or better in MATH 223, have a GPA of 2.0 or higher in all university mathematics courses, and have a GPA of 2.0 or higher in all SIUE courses taken. A student who has been dropped from the department may be readmitted at most once.

Graduation Requirements

- Complete all specific program requirements including:
  - At least 12 hours of SIUE credit in major courses numbered 300 or above with a cumulative GPA of 2.0 or higher
  - A GPA of 2.0 or higher in all mathematics, statistics, or operations research courses numbered 300 or above at SIUE within two years preceding graduation
  - At least nine hours of credit in mathematics, statistics, or operations research courses numbered 300 or above at SIUE, excluding MATH 498 and 499, within two years preceding graduation

Duplicate credits earned (through proficiency, transfer, CLEP or from a course) after credit has been received for similar or more advanced coursework in the subject at SIUE or elsewhere are not applicable toward graduation. Students who receive a grade of D in any mathematics, statistics or operations research course may not count that course toward requirements for a mathematics major.

- Complete all University requirements including:
  - All general education requirements
  - A minimum of 120 credit hours
    - At least 30 of which must be completed at SIUE
    - At least 60 of which must be completed at a regionally accredited four-year institution
  - A minimum cumulative GPA of 2.0
  - Bachelor of Arts: Eight courses in fine and performing arts or humanities, including one year of the same foreign language
- File an application for graduation by the first day of the term in which you plan to graduate

siue.edu/math

Contact Information
Department of Mathematics and Statistics
Phone: 618-650-2382

This information is concurrent with the 2022-2023 academic catalog. Courses are subject to change at any time.

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