

# MATHEMATICS AND STATISTICS



College of Arts and Sciences • Department of Mathematics and Statistics

## Degrees Available at SIUE

- Bachelor of Arts in mathematical studies
- Bachelor of Science in mathematical studies

## Specializations

- Actuarial Science
- Applied Mathematics
- Pure Mathematics
- Statistics
- Teacher Licensure – Grades 9-12

## Mathematics and Statistics 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 in the Department of Mathematics and Statistics. In the College of Arts and Sciences at SIUE, we have a faculty-to-undergraduate major student ratio of five to one, so our students receive personalized attention from faculty recognized for outstanding teaching and excellent research.

## Career Opportunities

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 percent over the next 10 years. While salaries vary by field, employment type and education level, the median national salary for an actuary is approximately \$93,000, the median national salary for a mathematician is approximately \$101,000 and the median national salary for a statistician is \$75,000.

Most professionals in the field of mathematics will 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. Students from SIUE are employed in government and corporate organizations, and hold positions with Horace Mann, Juggle, Centene, Delta Dental, Boeing, United States governmental agencies, and several others.

## Faculty

### Marcus Agustin, PhD

Professor

Research Interest: Statistics, reliability and survival analysis

### Zenia Agustin, PhD

Professor

Research Interest: Statistics

### Gregory Budzban, PhD

Dean and Professor

Research Interest: Probability on Algebraic Structures and Math Education

### Song Foh Chew, PhD

Associate Professor

Research Interest: Operations research, particularly, the study of deadlock avoidance and robust supervisory control of resource allocation systems

### Daeshik Choi, PhD

Assistant Professor

Research Interest: Numerical linear algebra and Matrix theory

### Cheryl Eames, PhD

Assistant Professor

Research Interest: Mathematics education

### Koung Hee Leem, PhD

Professor

Research Interest: Numerical analysis and scientific computing

### Andrew A. Neath, PhD

Professor

Research Interest: Statistics

### Junvie Pailden, PhD

Assistant Professor

Research Interest: Statistics

### James L. Parish, PhD

Associate Professor

Research Interest: Algebra, geometry, and the interface between them

### George Pelekanos, PhD

Distinguished Research Professor

Research Interest: Inverse scattering

### Edward C. Sewell, PhD

Distinguished Research Professor

Research Interest: Operations research

### Myung-Sin Song, PhD

Associate Professor

Research Interest: Functional and harmonic analysis of wavelets

### G. Stacey Staples, PhD

Associate Professor

Research Interest: Operator calculus on graphs, algebraic probability, algebraic combinatorics, symbolic computation, combinatorial properties and applications of Clifford algebras

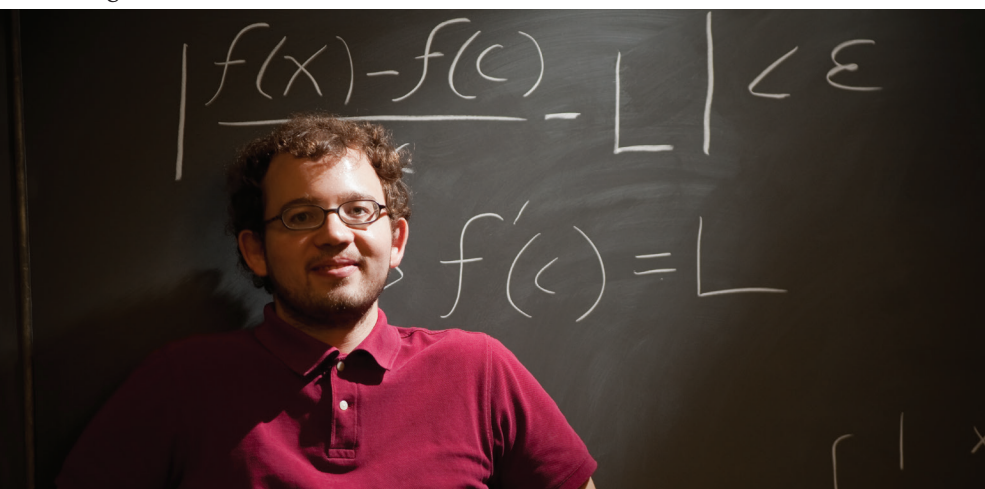
### Tammy M. Voepel, PhD

Associate Professor

Research Interest: Mathematics education

SOUTHERN ILLINOIS UNIVERSITY  
**EDWARDSVILLE**

COLLEGE OF ARTS & SCIENCES



# Sample Curriculum - Bachelor of Science, Mathematical Studies-Actuarial Science Specialization

|               | FALL SEMESTER   | SPRING SEMESTER  |
|---------------|---|--|
| <b>YEAR 1</b> | <b>MATH 150</b> Calculus I (FQR) 5<br><b>ECON 111</b> Principles of Macroeconomics (BSS) 3<br>ENG 101 English Composition I 3<br>ACS 101 or 103 Oral Expression 3<br>RA 101 Reasoning & Argumentation 3<br>Total 17   | <b>MATH 152</b> Calculus II (BPS) 5<br><b>CS 145</b> Introduction to Computing I 3<br><b>ECON 112</b> Principles of Microeconomics (BSS) 3<br>ENG 102 English Composition II 3<br>Total 14                                     |
| <b>YEAR 2</b> | <b>MATH 250</b> Calculus III (BPS) 4<br>MATH 223 Logic and Mathematical Reasoning 3<br><b>PHYS 151</b> University Physics I (BPS) 4<br><b>PHYS 151L</b> University Physics I Lab (EL) 1<br><b>ACCT 200</b> Fundamentals of Financial Accounting 3<br>Total 16 | MATH 305 Differential Equations 3<br>MATH 321 Linear Algebra I 3<br>MATH 350 Introduction to Analysis 3<br><b>ACCT 210</b> Managerial Accounting 3<br>Breadth Humanities (BHUM)/Experience Global Cultures (EGC) 3<br>Total 16 |
| <b>YEAR 3</b> | MATH 340 Theory of Interest 3<br>STAT 480a Introduction to Mathematical Statistics 3<br>MATH 465 Numerical Analysis 3<br>FIN 320 Finance Management and Decision Making 3<br>Breadth Life Science (BLS) 3<br>Total 15   | STAT 480b Introduction to Mathematical Statistics 3<br>STAT 486a Actuarial Mathematics 3<br>Finance Elective 3<br>OR 441 Stochastic Models 3<br>Interdisciplinary Studies (IS)/Experience US Cultures (EUSC) 3<br>Total 15     |
| <b>YEAR 4</b> | MATH, STAT, or OR elective 3<br>MATH 498 Senior Seminar 2<br>FIN 420 Problems in Corporate Finance 3<br>Life, Physical or Social Science with a lab (EL) 3<br>Breadth Fine & Performing Arts (BFPA) 3<br>Total 14   | STAT 482 Regression Analysis 3<br>MATH, STAT, or OR elective 3<br>MATH 499 Senior Project 2<br>Health Experience 2<br>Breadth Information & Communication in Society (BICS) 3<br>Total 13                                      |

**TRANSFER STUDENTS** – To maximize your transfer experience, complete the **bolded** courses/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. Transfer Credit Equivalency Guides are located at [siue.edu/transfer](http://siue.edu/transfer).

## 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 that will help propel them toward graduate school or their chosen career. Our undergraduate program is compatible with study abroad, and our students have most recently studied in Spain and Egypt.

## Admission Requirements

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.
- In high school, complete seven (7) 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.

## Graduation Requirements

- Complete all specific program requirements.
- 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 4-year institution
  - A minimum cumulative grade point average (GPA) of 2.0
  - Bachelor of Arts: Eight (8) courses in fine & performing arts and humanities to include one (1) year of the same foreign language
- File an Application for Graduation by the first day of the term in which you plan to graduate.

## Contact Information

Department of Mathematics and Statistics  
 College of Arts and Sciences  
 Phone: 618.650.2382

