

MATHEMATICS AND STATISTICS

Applied Mathematics



College of Arts and Sciences • Department of Mathematics and Statistics

Degrees Available at SIUE

- Bachelor of Arts
- Bachelor of Science

Why Applied Mathematics?

A specialization in the field of mathematics, applied math focuses on using mathematical theories to solve real-world problems, such as those related to structural stability, chemical interactions, or wave propagation. It encompasses the use of probability theory, numerical and data analysis, modeling, algorithm development and simulations to explore the connections between mathematics and science or our environment. Examples of where applied math is used extensively include physics, geology and engineering and technology.

Applied Mathematics at SIUE

All full-time faculty in SIUE's Department of Mathematics and Statistics hold doctorate degrees. Students interested in pursuing a career in applied mathematics enroll in rigorous math as well as physics courses. Because advanced computer software is utilized to perform the majority of applied math functions, the department has access to more than 500 computer workstations in dedicated computer labs throughout the college campus. The workstations all have access to leading mathematical software programs.

Career Outlook

Many graduates with applied math specialization in mathematics are employed in science and engineering fields. The Society for Industrial and Applied Mathematics has identified several emerging career paths for applied mathematicians, including bioinformatics, materials science, computer animation and digital imaging, finance, climatology, and ecology/environmental organizations. The skills acquired in applied math, such as problem-solving skills, also can be applied to a wide variety of career choices.

Admission Requirements

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.

Exit Requirements

- Complete all specific program requirements.
- Complete all University requirements including:
 - all general education requirements
 - a minimum of 124 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 of 2.0
 - Bachelor of Arts only: 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.

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Faculty

Distinguished Research Professors

Krzysztof Jarosz, (Chair), Ph.D.

1982, University of Warsaw

Urszula Ledzewicz, Ph.D.

1984, University of Lodz

Steve E. Rigdon, Ph.D.

1985, University of Missouri-Columbia

Professors

Zenia Agustin, Ph.D.

1997, Bowling Green State University

Chunqing Lu, , Ph.D.

1986, University of New York at Buffalo

Andrew A. Neath, Ph.D.

1994, University of California at Davis

George Pelekanos, Ph.D.

1997, University of Delaware

Edward C. Sewell, Ph.D.

1990, Cornell University

Associate Professors

Marcus Agustin, Ph.D.

1997, Bowling Green State University

Marilyn Hasty, Ph.D.

1986, Southern Illinois University Carbondale

Hee Leem Koung, Ph.D.

2003, University of Iowa

James L. Parish, Ph.D.

1985, University of Chicago

G. Stacey Staples, Ph.D.

2004, Southern Illinois University Carbondale

Tammy M. Voepel, Ph.D.

1997, University of Missouri-Columbia

Assistant Professors

Song Foh Chew, Ph.D.

2005, Purdue University

Myung-Sin Song, Ph.D.

2005, University of Iowa

Cynthia Traub, Ph.D.

2006, Washington University

Adam G. Weyhaupt, Ph.D.

2006, Indiana University

SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE

COLLEGE OF ARTS & SCIENCES

Sample Four-Year Curriculum - BS

	FALL	SPRING
YEAR 1	MATH 150 Calculus I (5) General Education (9) Total 14	MATH 152 Calculus II (5) CS 140 Introduction to Computing I (4) General Education (9) Total 18
YEAR 2	MATH 250 Calculus III (4) PHYS 151 University Physics I (INSM) (4) PHYS 151L University Physics I Lab (1) MATH 223 Logic and Mathematical Reasoning (3) General Education (4) Total 15	PHYS 152 University Physics I (4) PHYS 152L University Physics I Lab (1) MATH 305 Differential Equations (3) MATH 321 Linear Algebra I (3) MATH 350 Introduction to Analysis (3) General Education (3) Total 17
YEAR 3	MATH 450 Real Analysis I (3) MATH, STAT, or OR elective (3) Science or Engineering elective (3) General Education (6) Total 15	MATH 451 Introduction to Complex Analysis (3) MATH 464 Introduction to Partial Differential Equations (3) Science or Engineering elective (3) General Education (3) MATH, STAT, or OR elective (3) Total 15
YEAR 4	MATH 465 Numerical Analysis (3) MATH 498 Senior Seminar (2) MATH, STAT, or OR elective (3) General Education (3) Electives (4) Total 15	MATH 466 Numerical Linear Algebra with Applications (3) MATH 499 Senior Project (2) General Education (3) Electives (7) Total 15

TRANSFER STUDENTS Maximize your transfer experience - complete the **bolded** courses/requirements pre-transfer **AND** satisfy 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/

BA degree requires two semesters of same foreign language.

Application Deadline

Please refer to SIUE's undergraduate application deadlines.

Academic Advising Information

Brian Hinterscher
 College of Arts and Sciences Undergraduate Advising
 Campus Box 1609
 SIUE
 Edwardsville, IL 62026-1609
 618.650.5525

Contact Info

Department of Mathematics and Statistics
 Campus Box 1653
 SIUE
 Edwardsville, IL 62026-1653
 618.650.2250

