ILLINOIS WESLEYAN UNIVERSITY

MATHEMATICS

A successful study of mathematics delivers a powerful approach to solving problems through organization, simplification, and abstraction. This process often leads to solutions and techniques of great beauty independent of their application. It is the aim of the mathematics faculty at Illinois Wesleyan University to give students an understanding of theories and methods of mathematics, as well as an appreciation of their beauty.

Why Mathematics at Illinois Wesleyan?

A major in Mathematics:

- Responds to today's job market, in which individuals with highly developed analytical and problem-solving skills are in great demand.
- Provides a sound educational foundation for careers in top-rated professions such as actuary, statistician, computer systems analyst, pricing analyst or computer programmer.
- Offers a foundation for diverse career paths, including high-tech industries, business, medical sciences, communication and education.
- Gives students the ability to tackle increasingly complex problems encountered in such fields as engineering, management science, economics, biology, agriculture, finance, cryptography, military science, insurance and transportation.
- Works well with other departments and programs on campus, such as teacher certification and 3-2 dual-degree pre-engineering.
- Addresses through course offerings the great demand for people educated in computational mathematics (e.g., operations research, statistics and numerical analysis), as well as in traditional mathematics.

Learning from a Quality Faculty

- **Santiago Camacho,** *Visiting Professor of Mathematics*
  Ph.D. — University of Illinois Urbana-Champaign
  Research interests include Model Theory and Logic with a focus on o-minimality, differential asymptotic algebra, and generalized series fields.
- **Zahia Drici,** *Chair and Professor of Mathematics*
  Ph.D. — Florida Institute of Technology
  Research interests include ordinary differential equations and dynamical systems, difference and functional equations and electromagnetic theory and its applications.
- **Tian-Xiao He,** *Professor of Mathematics*
  Ph.D. — Dalian University of Technology and Texas A&M University
  Research interests include spline functions, approximation theory, wavelet analysis, numerical analysis, enumerative combinatorics and some topics in computational mathematics.

A Sampling of Courses Offered by Mathematics

Applied Analysis I, II, III

Combinatorics and Graph Theory

Complex Analysis

Combinational Designs

Differential Equations

Directed Study

Finite Mathematics

Introduction of Real Analysis

Linear Algebra

Linear Programming

Mathematical Modeling

Mathematical Statistics

Modern Algebra

Probability

Regression and Time Series

Research/Thesis

Techniques of Mathematical Proof

Topics in Geometry

Topics in Logic

Topology

Wavelet Analysis

" The thing that is unique about the Illinois Wesleyan Mathematics Department is that students have contact with active professionals from day one as first-year math students. At other universities, you often do not work closely with professors until you are a junior or senior. Here at IWU, we encourage our students to work with us, both in class and through independent research projects under our guidance."

Dr. Zahia Drici
Chair and Professor of Mathematics

- **Melvyn Jeter,** *Professor of Mathematics*
  Ph.D. — Oklahoma State University
  Research interests include convexity, linear algebra, mathematical programming and linear complementarity theory.
- **Seung-Hwan Lee,** *Associate Professor of Mathematics*
  Ph.D. — Texas Tech University
  Research interests include non- and semi-parametric statistical analysis.
- **Daniel Roberts,** *Assistant Professor of Mathematics*
  Ph.D. — Auburn University
  Research interests lie in graph theory and design theory, and his specific interests include decompositions, embeddings, and labelings of graphs and hypergraphs.
- **Andrew Shallue,** *Associate Professor of Mathematics*
  Ph.D. — University of Wisconsin-Madison
  Research area is algorithmic number theory and its applications to cryptography.
- **Ganesha Weerasinghe,** *Visiting Professor of Mathematics*
  Ph.D. — Auburn University
  Research interests include Optimization, Stochastic Optimization and Numerical Analysis.

Putting Learning into Practice

- The opportunity exists for capstone independent scholarly projects. Recent projects have been done in the areas of linear algebra, operations research, number theory, NP completeness, stability theory of ordinary differential equations combinatorics, graph theory and wavelet analysis.
- Team communication and problem solving are stressed in Mathematical Modeling, where students work together to model and solve problems of practical interest. The math modeling team often competes in the national COMAP math modeling competition.
- Some job titles that math alumni have held include: actuary, senior analyst, math instructor, software engineer, systems consultant, financial advisor, research scientist, product analyst, and many more.
- In the 19th annual math challenge — a regional math competition — an IWU team made up of three students placed first out of 60 schools.
- Many math majors take an active role in student math clubs as well as the Illinois Wesleyan Mathematics Society and Phi Mu Epsilon, the national mathematics honor society.
- Illinois Wesleyan mathematics majors have won several prestigious awards based on the quality of their research, including a Sigma Xi Research Award, Barry M. Goldwater Scholarship, All-USA College Academic Team Award and Phi Kappa Phi Graduate Fellowship Award.

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