

JOAN P. BROCK SCHOOL OF MATHEMATICS AND NATURAL SCIENCES

Mathematics is at its heart the search for pattern or structure. It is an essential component of the liberal arts. A mathematician finds a structure and develops a vocabulary or theory for describing, exploring, and extending it further. Study in mathematics engages students in the search and in the articulation of the consequences. The study of mathematics requires both creativity and rigorous, logical thinking.

THE PROGRAM

The mission of the mathematics department is to provide an opportunity for all students to gain computational dexterity, to understand the value of mathematics as a human and social endeavor, and to develop the power of mathematical reasoning, while promoting the rigorous reasoning skills that allow students to investigate the interplay between the abstract and the concrete.

THE MAJOR

The Department of Mathematics offers a major in mathematics leading either to the B.A. degree or the B.S. degree. Each program provides a broad education in the fundamentals and problem-solving strategies. Mathematics courses are designed to meet two goals: (1) to introduce some of the most influential ideas and techniques in mathematics; and (2) to develop problem-solving ability by teaching students to combine creative mathematical searching with rigorous reasoning.

THE MINOR

The Department of Mathematics offers two minors—a minor in mathematics and a minor in data science jointly with the Department of Computer Science. Data science is an emerging field that combines computer science and statistics. The minor in data science teaches programming skills, programming languages Java and R, data analytics, models and visualizations. Minors in mathematics and data science complement majors in many fields.

THE COURSES

Classes at VWU are small and interactive. Some of the courses within the mathematics program include: Modern Geometries, Multivariable Calculus, Algebraic Structures, Number Theory, Cryptography, Probability and Foundations of Logic and Proof. The Department of Mathematics also offers courses to support secondary teacher certification in cooperation with the Department of Education through the MAEd.

INTERNSHIPS/RESEARCH

Students in the mathematics department have the opportunity to participate in internships or research projects related to their studies. Recently VWU students have been selected for summer research programs funded by the National Science Foundation and have presented their research on and off campus. Mathematics majors have been hired for internships at a variety of companies including NASA, Surry Nuclear Power Station, Verified Voting and the Norfolk Admirals. Department faculty advisors and the Lighthouse Center for Exploration and Discovery work together to help students find internships and research opportunities related to their course of study and future career interests.

BEYOND THE CLASSROOM

A degree in mathematics offers a vast array of career options. VWU graduates have been hired by organizations including STIHL, Argonne National Laboratory and USI Insurance Services. Math majors have also pursued advanced degrees in mathematics, engineering, education and other related fields.

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