MATHEMATICS | COLLEGE OF ARTS AND SCIENCES

B.A./B.S. IN MATHEMATICS

The Bachelor of Arts in Mathematics degree program supports learning in the mathematical sciences by providing effective curriculum, teaching and assessment at all levels. Students learn to build or enhance a career centered on mathematics, while experiencing all of the benefits of a broad liberal arts education. Students analyze, model and solve problems using both familiar and new tools (some developed by the students themselves). The long-term goal is to enable students to begin professional careers or to pursue further study in mathematics or related fields.

The Bachelor of Science in Mathematics degree program is designed to provide mathematics majors with a rigorous mathematics background and prepare students for graduate school or an applied job at the bachelor's level. The immediate goal is to present students with a set of mathematical tools, examples of the uses of these tools, and, more importantly, the ability to think mathematically. In our highly quantitative society, this will make our majors even more competitive in the regional and national job markets and in professional/graduate schools.

DEGREE REQUIREMENTS

Completion of a B.A. in Mathematics requires 120 credit hours and a minimum 2.0 grade point average. Completion of a B.S. in Mathematics requires 129-131 credit hours and a minimum 2.0 grade point average.

COURSEWORK

The B.A. curriculum is designed to introduce students to major areas of abstract mathematics beyond calculus.

Mathematics core courses include:

- Calculus and Analytic Geometry I, II, and III
- Probability
- Bridge to Abstract Mathematics
- Linear Algebra
- Abstract Algebra
- Introduction to Analysis I
- Senior Thesis in Mathematics

The program allows students to explore, in depth, another area of study in liberal arts or sciences.

In addition, students fulfill the general education requirements for the baccalaureate of arts degree in the College of Arts and Sciences. This provides them with learning experiences in humanities, social and physical sciences, culture studies, and arts.

The B.S curriculum is designed to introduce both applied and abstract mathematics beyond calculus. It includes:

- Calculus I, II, and III
- Probability
- Bridge to Abstract Mathematics
- Linear Algebra
- Four 300-400-level application courses
- Two courses from the advanced course list: Statistical Inference, Abstract Algebra, Number Theory, Introduction to Analysis I
- Senior Thesis in Mathematics

Study of other disciplines that use mathematics, such as physics, computer science, chemistry or business, is strongly encouraged.

PROGRAM HIGHLIGHTS

Almost all mathematics full-time faculty members are Founder's Day Teaching Award winners, multiple IU Trustees Teaching award winners, and active members of the IU Faculty Colloquium on Excellence in Teaching (FACET). The faculty's mathematical expertise ranges from graph theory, algebra, operations research and mathematical physics to financial mathematics, actuarial science, statistics and mathematics education. Faculty members are active researchers with more than 100 publications to their credit. Students benefit from the faculty's diverse research interests and can participate in undergraduate research as part of their senior theses.

WHAT CAN I DO WITH A B.A. / B.S. IN MATHEMATICS?

A graduate with a Bachelor of Arts or Bachelor of Science degree in mathematics is qualified for a broad range of positions in industry, business, academia, and government that require analytical thinkers and problem solvers. Graduates work as system analysts, actuaries and statisticians in banks, bureaus, consulting firms and computer and communication industries.

HANDS-ON LEARNING

Students present their work at local, regional and national conferences. They take part in the Indiana Friendly Collegiate Mathematics Competition. They work as tutors in the Mathematics Assistance Center and developmental mathematics hybrid courses. Our students have an opportunity to serve as Supplemental Instruction student helpers in developmental and 100-level mathematics courses. Advanced mathematical software such as Mathematica, Maple, GeoGebra and Geometer's Sketchpad are available in all computer labs and in the online environment, IUanyWare. Our students use graphing calculators and mathematical software to solve problems in calculus, linear algebra, differential equations, theory of interest, probability, and statistics.

CLUBS AND ACTIVITIES

IU Northwest has an active Math and Actuarial Club that attracts students to mathematics programs and promotes awareness about the importance of and applications of mathematics and its relation to other disciplines. The club participates in the annual Indiana College Mathematics Competition.

RELATED DEGREE OPTIONS

- Minor in Mathematics
- B.S. in Actuarial Science
- Double B.S. in Mathematics and Education

FOR MORE INFORMATION

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