

Undergraduate Mathematics

❖ **Bachelor of Arts Degree in Mathematics** [Academic Plan](#)

This degree program is intended for students whose interests outside mathematics are oriented toward the arts, humanities and social sciences. The requirements in these areas are greater than for the B.S. degree. Students in this degree program are strongly encouraged to select an area where mathematics is applied.

❖ **Bachelor of Science Degree in Mathematics**

There are six options under this degree. They have in common a core of freshman and sophomore mathematics courses and university-wide general education requirements.

- **Actuarial Mathematics Option** [Academic Plan](#)
The goal of this option is to train students to enter the actuarial science profession. Actuaries are in great demand in the insurance and other related businesses. The courses required in this option are intended to prepare students to pass one or more of a sequence of demanding examinations administered by a national organization, the Society of Actuaries. The key mathematical areas are probability, statistics, and advanced courses in insurance and in operations research.
- **Applied and Industrial Mathematics Option** [Academic Plan](#)
The goal of this option is to train students in the areas of applied and industrial mathematics. This option will prepare students to use mathematics to solve problems arising in industry and will also prepare students for graduate study in applied mathematics. The main mathematical tools needed are analysis, differential equations, numerical analysis and computing, probability and statistics, matrix theory, and mathematical modeling.
- **Computational Mathematics Option** [Academic Plan](#)
The goal of this option is to train students in the areas of mathematics most relevant to computers. These include the mathematical tools needed for analyzing algorithms as well as those mathematical problem-solving methods that can be implemented on computers. The main areas needed are numerical analysis, matrix theory, differential equations, statistics, combinatorics, and linear programming.
- **General Mathematics Option** [Academic Plan](#)
The goal of this option is to provide a way for students to construct, within limits, their own curricula. It thus allows room in the major for a student interested in an unusual area of application or one with an unusual range of interests within mathematics. The option requires at least one course at the 400 level in each of the areas of analysis, algebra, and applied mathematics. An approved sequence of 12 credits is required which consists of courses in an area related to mathematics.
- **Graduate Study Option** [Academic Plan](#)
This goal of this option is to prepare students for graduate study in mathematics. The required courses include those that graduate mathematics departments normally expect their incoming students to have completed.
- **Systems Analysis Option** [Academic Plan](#)
The goal of this option is to train students to apply mathematics toward the solution of problems in business, economics, and the social and behavioral sciences. The main mathematical tools needed are matrix theory, linear programming, and statistics. An approved sequence of 12 credits is required which consists of courses in an area related to mathematics.