# MATHEMATICS (B.S.)

The Bachelor of Science in Mathematics provides students additional breadth and depth of knowledge of mathematics beyond the course of study required for the Bachelor of Arts in Mathematics, as well as the chance to pursue a Minor related to mathematics. The program prepares students for either graduate school or an immediate career in business, industry, or government.

A decision to pursue the BS in Mathematics should be made in a student's first year of study if the program is to be completed in four years. Students should both meet with a mathematics advisor and take MATH-211 Calculus I as soon as possible.

## Integrative Studies Requirements

*40 credits minimum*

| Code | Title | Credits | Completed |
|---|---|---|---|
| **Major Requirements (80-88 credits)** | | | _____ |
| *Core Courses* | | | _____ |
| MATH-141 | Introductory Statistics | 4 | _____ |
| MATH-181 | Comp Tools for Problem Solving | 4 | _____ |
| MATH-211 | Calculus I | 4 | _____ |
| MATH-212 | Calculus II | 4 | _____ |
| MATH-235 | Discrete Math With Proof | 4 | _____ |
| MATH-335 | Linear Algebra | 4 | _____ |
| MATH-341 | Applied Statistics | 4 | _____ |
| MATH-421 | Abstract Algebra | 4 | _____ |
| MATH-422 | Geometry | 4 | _____ |
| MATH-423 | Real Analysis | 4 | _____ |
| INPHYS-241 | University Physics I | 4 | _____ |
| Select **three** of the following: | | 12 | _____ |
| MATH-311 | Vector Calculus | | _____ |
| MATH-312 | Differential Equations | | _____ |
| MATH-342 | Probability | | _____ |
| MATH-381 | Math Modeling | | _____ |
| Select **one** of the following: | | 4 | _____ |
| ISCS-210 | Python Programming | | _____ |
| IIPHYS-342 | Data Analysis for Scientists | | _____ |
| **Related Minor** | | | _____ |
| Minor in Biology, Chemistry, Computer Science, Data Analytics, Economics, Management, Physics or another related field approved by the Mathematics Department; the Statistics Minor cannot be used to fulfill this requirement. | | 20-28 | _____ |
| **Total Credits** | | **80-88** | _____ |

## Electives

Select courses to reach a total of 120 credits for the degree.

## Degree Requirements

*120 credits*
*40 credits at the upper-level*

## Upon completion of the Mathematics B.S. degree, students will gain:

- Technical skill in completing mathematical processes; By technical skill we mean both the ability to correctly apply standard algorithms found in the undergraduate mathematics curriculum as well as the ability to choose an appropriate algorithm.
- Breadth and depth of knowledge of mathematics; By breadth we mean work in both the applied and pure areas of mathematics. By depth we mean the ability to recognize, represent, and connect mathematical ideas in multiple ways; the ability to reason both inductively and deductively; and the ability to meaningfully engage in the pocess of mathematical problem solving.
- An understanding of the relationship of mathematics to other disciplines.
- An ability to communicate mathematics effectively, both orally and in writing.
- A capability of understanding and interpreting written materials in mathematics.
- An ability to use technology to do mathematics.