

# Mathematics Program

## Purpose Statement

The purpose of the mathematics program is to develop students who understand mathematics as an academic discipline, who can use mathematics as a problem-solving tool in other disciplines, and who are skilled in mathematical reasoning, problem solving, critical thinking and communication.

The mathematics program achieves this purpose when its students

- receive a coherent, broad-based coverage of the discipline of mathematics;
- demonstrate conceptual and procedural understanding of mathematics;
- apply their knowledge to specific, constrained problems and produce solutions;
- possess a foundation of theory that will enable lifelong learning and development;
- meet State Department of Education standards for licensure in the area of mathematics (applies to education majors in mathematics only).

The department offers a major and minor in mathematics. Mathematics is a discipline essential to all facets of the employment world and an excellent background for a variety of specific professions. Secondary teaching licensure is available. Mathematics is also an excellent background for graduate studies in diverse fields.

## Mathematics Major

**G-MA 111** Calculus I (4 hours)

**MA 112** Calculus II (4 hours)

**G-MA 123** Discrete Mathematics (3 hours)

**MA 211** Linear Algebra (3 hours)

**MA 212** Calculus III (4 hours)

**G-MA 221** Elementary Applied Statistics (4 hours)

**MA 311** Introduction to Analysis (4 hours)

**MA 366** Differential Equations (4 hours)

**MA 411** Introduction to Algebraic Structures (4 hours)

**MA 342** Modern Geometry (4 hours)

**MA 375** Junior Seminar (1 hour)

**\*MA 475** Senior Project (2 hours)

### Required Supporting courses (all mathematics majors)

**G-PH 205** College Physics I (5 hours)

**PH 206** College Physics II (5 hours)

*Total: 51 hours*

## Mathematics Major for Teacher Licensure

**G-MA 111** Calculus I (4 hours)

**MA 112** Calculus II (4 hours)

**G-MA 123** Discrete Mathematics (3 hours)

**G-MA 153** Principles of Geometry (3 hours)

**MA 211** Linear Algebra (3 hours)

**MA 212** Calculus III (4 hours)

**G-MA 221** Elementary Applied Statistics (4 hours)

**MA 366** Differential Equations (4 hours)

**MA 411** Introduction to Algebraic Structures (4 hours)

**MA 342** Modern Geometry (4 hours)

**MA 375** Junior Seminar (1 hour)

**\*MA 475** Senior Project (2 hours)

*Total: 40 hours*

### Required Supporting Courses:

**G-PH 205** College Physics I (5 hours)

See Teacher Education Handbook for Curriculum and Instruction course requirements.

## Mathematics Minor

### Requirements

**G-MA 111** Calculus I (4 hours)

**MA 112** Calculus II (4 hours)

**G-MA 221** Elementary Applied Statistics (4 hours)

Plus one course from the following list:

**G-MA 123** Discrete Math (3 hours)

**G-MA 153** Principles of Geometry (3 hours)

**G-MA 201** Survey of Mathematics (3 hours)

**MA 211** Linear Algebra (3 hours)

Plus one course from the following list:

**MA 212** Calculus III (4 hours)

**MA 366** Differential Equations (4 hours)

**MA 342** Modern Geometry (4 hours)

**MA 411** Algebraic Structures (4 hours)

*Total: 19 hours*

## Data Science Minor

### Requirements

**IT 115** Introduction to Data Science (3 hours)

**IT 200** Introduction to Programming (3 hours)

**IT 201** Data Structures (3 hours)

**IT 215** Data Wrangling and Visualization (3 hours)

**IT 315** Exploratory Data Analysis (3 hours)

**MA 462** Mathematical Theory of Statistics (4 hours)

*Total: 19 hours*

## Data Analytics Minor

### Requirements

**IT 115** Introduction to Data Science (3 hours)

**IT 215** Data Wrangling and Visualization (3 hours)

**MA 211** Linear Algebra (3 hours)

Plus three courses from the following list:

**IT 200** Introduction to Programming (3 hours)

**IT 201** Data Structures (3 hours)

**BI/CH 310** Statistical Data Analysis (3 hours)

**IT 315** Exploratory Data Analysis (3 hours)

**MA 462** Mathematical Theory of Statistics (4 hours)

*Biology or Biochemistry Majors may include the following courses on their list:*

**BI 235** Introduction to Biocomputing (3 hours)

**BI 365** Evolution and Ecology (4 hours)

*Finance and Accounting Majors may include the following course on their list:*

**BA 426** Financial Analysis (3 hours)

*Total: 18-20 hours*