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