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

- have received a coherent, broad-based coverage of the discipline of mathematics;
- demonstrate conceptual and procedural understanding of mathematics;
- can 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 information technology program at McPherson College commits itself to producing graduates who understand the field of computing as an academic discipline and as a profession within the context of a larger society.

The program achieves this purpose when its students

- have received a coherent and broad-based coverage of the discipline of computing;
- are prepared for graduate study as well as for the programming profession;
- understand the ethical and societal issues associated with the computing field;
- can apply their knowledge to specific, constrained problems and produce solutions;
- possess a foundation of theory that will enable lifelong learning and development;
- have experience with contemporary tools that lead to good experimental methods

Mathematics Major

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; the emphasis of our program is teacher preparation, and secondary teaching licensure is available. Mathematics is also an excellent background for graduate studies in diverse fields.

Requirements

42 hours of mathematics courses including the following:

G-MA111 Calculus I (4 hours)
MA112 Calculus II (4 hours)
G-MA123 Discrete Mathematics (3 hours)
G-MA153 Principles of Geometry (3 hours)
G-MA201 Survey of Mathematics (3 hours)
MA212 Calculus III (4 hours)
G-MA221 Elementary Applied Statistics (4 hours)
MA366 Differential Equations (4 hours)
***G-MA290** History of Mathematics (3 hours)
MA411 Introduction to Algebraic Structures (4 hours)
MA342 Modern Geometry (4 hours)
MA375 Junior Seminar (1 hour)
***MA475** Senior Project (2 hours)

Required Supporting courses (all mathematics majors)

IT 100 Computers and Information Technology (3 hours)
IT 200 Introduction to Programming (3 hours)
IT 201 Data Structures (3 hours)
PH205 College Physics I (5 hours)

Required Supporting Courses (students seeking teaching licensure)

See Teacher Education Handbook

Required Supporting Course (students not seeking teaching licensure)

PH205 College Physics II (5 hours)

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-MA123 Discrete Math (3 hours)
G-MA153 Principles of Geometry (3 hours)
G-MA201 Survey of Mathematics (3 hours)
***G-MA290** History of Mathematics (3 hours)

Plus one course from the following list
MA212 Calculus III (4 hours)
MA366 Differential Equations (4 hours)
MA342 Modern Geometry (4 hours)
MA411 Algebraic Structures (4 hours)