

MATHEMATICS

Program Description

An **Associate of Science in Mathematics** provides students with a reasonable exposure to foundational college-level mathematics. This degree program includes the Colorado Statewide General Education Core and meets the lower division general education requirements at most public institutions in Colorado. By completing this degree, students should be able to matriculate into a baccalaureate degree in mathematics with only 60 additional hours of coursework.

Pursuing a **Baccalaureate degree in Mathematics**, students develop powerful problem-solving, logical and critical thinking skills. By completing the required coursework, students gain an understanding of the nature of proof, a broad general understanding of mathematics and a deep understanding of at least one area of mathematics. Math majors also develop independent learning skills and oral and written mathematical communication skills. Mathematics majors get jobs in a wide variety of areas. CMU graduates have worked for local businesses, have run their own businesses and have worked for scientific companies. Other graduates have continued their educations by attending graduate school (in mathematics, computer science and engineering), law school, medical school and veterinary school.

Students who pursue a **Baccalaureate degree in Mathematics with a concentration in Applied Mathematics** will develop powerful problem-solving, logical, and critical thinking skills. Students will use methods of applied mathematics from areas including modeling, linear algebra, ordinary and partial differential equations, numerical methods, computer programming, and statistics to model and solve applied problems. Students will also gain an understanding of the nature of proof and will complete a senior capstone project that includes developing research skills, writing skills, and presentation skills. Applied mathematics graduates can choose to find work in a variety of areas within business, industry, and government or may choose to continue their educations by attending graduate school in areas such as applied mathematics, computer science, and engineering.

The **Baccalaureate degree in Mathematics with a concentration in Secondary Education** will prepare students to teach in both middle schools and in high schools. While completing this degree, students develop problem-solving and critical thinking skills and are introduced to the logical and historical development of mathematical ideas. Students also learn the professional skills in teaching methods and content necessary for secondary mathematics teachers. Nationally recommended curriculum guidelines are followed in order to ensure that graduates have the mathematical content and conceptual understanding necessary for all high school mathematics courses. Graduates from this program are in demand both locally and statewide with the scarcity of mathematics teachers.

With a **Baccalaureate degree in Mathematics with a concentration in Statistics**, students develop problem-solving, logical and critical thinking skills. While completing the required coursework, students gain an understanding of the nature of proof, a general understanding of mathematics and an understanding of statistical reasoning, necessary assumptions and the correct use of statistical analysis procedures. Math and statistics majors also develop statistical software skills and oral and written mathematical communication skills. The statistics concentration in mathematics prepares students for graduate work in statistics or to enter the job force. With some additional job-specific training, students

entering the job market could function as applied statisticians working in areas such as actuarial science, wildlife management, marketing, quality control and epidemiology to name a few.

A **Minor in Mathematics** is a natural enhancement to many majors outside mathematics where an understanding of mathematics is needed (e.g. physics, computer science, chemistry, biology, geology). A minor in mathematics enables non-mathematics majors to complete a focused course of study in mathematics on a smaller scale.

A **Minor in Statistics** is a natural enhancement to many majors outside mathematics where an understanding of statistical analysis of data is needed (e.g. biology, business, psychology, sociology, history, human performance and wellness, political science). A minor in statistics enables non-mathematics majors to complete a focused course of study in statistics on a smaller scale.

The **Graduate Certificate in Applied Mathematics** is intended to provide licensed secondary mathematics teachers the credentials required by the Higher Learning Commission to teach concurrent enrollment classes and to enable other professionals to enhance their knowledge of applied mathematics. For more complete program information: Applied Mathematics (Graduate Certificate) (<http://catalog.coloradomesa.edu/areas-study/education-teacher-licensure/applied-mathematics-graduate-certificate>).

Special Requirements

Additional expenses: A graphing calculator is recommended for several mathematics and statistics courses. See department for recommended models.

Contact Information

Department of Computer Science, Mathematics, and Statistics
Wubben Science 132
970.248.1407

Associates

- Mathematics, Liberal Arts (AS) (<http://catalog.coloradomesa.edu/areas-study/mathematics/mathematics-liberal-arts-as>)

Bachelors/Minors

- Applied Mathematics, Mathematics (BS) (<http://catalog.coloradomesa.edu/areas-study/mathematics/applied-mathematics-mathematics-bs>)
- Education: Secondary Education, Mathematics (BS) (<http://catalog.coloradomesa.edu/areas-study/mathematics/secondary-education-mathematics-bs>)
- Mathematics (BS) (<http://catalog.coloradomesa.edu/areas-study/mathematics/mathematics-bs>)
- Mathematics (Minor) (<http://catalog.coloradomesa.edu/areas-study/mathematics/mathematics-minor>)
- Statistics (Minor) (<http://catalog.coloradomesa.edu/areas-study/mathematics/statistics-minor>)
- Statistics, Mathematics (BS) (<http://catalog.coloradomesa.edu/areas-study/mathematics/statistics-mathematics-bs>)

Graduate

- Applied Mathematics (Graduate Certificate) (<http://catalog.coloradomesa.edu/areas-study/education-teacher-licensure>)