

What Can I **Do** With a Major In...

Mathematics-Applied Mathematics Option?

Applied Mathematics programs¹ teach individuals to use mathematical methods in solving problems. Students in mathematics may use mathematical theory, computational techniques, algorithms, and the latest computer technology to solve economic, scientific, engineering, physics, and business problems. These programs focus on the analysis of quantities, magnitudes, forms, and their relationships, using symbolic logic and language. Mathematics programs fall into two classes of mathematics, applied mathematics and theoretical (pure) mathematics. Applied mathematicians use theories and techniques, such as mathematical modeling and computational methods, to formulate and solve practical problems in business, government, engineering, and the physical, life, and social sciences. They focus on the application of mathematics and statistics to the solution of functional problems in fields. Applied mathematicians also use computer-assisted mathematical analysis and the develop customized algorithms related to specific research problems.

The program at Montana State University² prepares students for employment in business, industry, or government or for graduate work in mathematics, statistics, or scientific computing. The program demonstrates the utility of mathematics to solve problems arising in real industrial applications and is built around courses in differential equations, applied mathematics, and numerical analysis. Graduates will be qualified for professional careers in computational applications of mathematics, statistics, and other related fields.

Characteristics associated with success¹ in this major include an interest in solving problems and puzzles, and enthusiasm in working with numbers, equations, and algorithms.

You should¹:

- have good computational skills and programming skills
- be proficient in organizing, synthesizing, and analyzing data
- be able to concentrate for long periods of time
- be able to make logical decisions
- be able to communicate well, both orally and in writing
- be able to conduct and interpret research studies
- have good reasoning ability
- have an ability to work alone or as part of a team

Occupations in this field require the ability to¹: apply mathematics to everyday problems, see patterns and themes where others may not, use computer applications for computation and analysis, and being well-versed in the industry of employment.

Related occupations include¹:

- Statistician
- Actuary
- College/University Professor
- Computer Systems Analyst
- Mechanical Engineer
- Aerospace Engineer
- Computer Software Engineer
- Operations Research Analyst
- Computer Programmer
- Market Research Analyst
- Production Planner

What Can I **Do** With a Major In...

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MSU graduates (Bachelor's degree) were hired in the following selected fields³:

Aerospace Scientist-Lockheed-Martin
Engineer-Honeywell Inc
Financial Analyst-JDH Financial
Investment Advisor-D.A. Davidson
Mechanical Engineer-General Dynamics
Solutions Designer-Zoot Enterprises

Salary averages of survey respondents: (# of respondents in parentheses)³

The data reported for in-state and out-of-state salaries is insufficient and does not appear in the Career Destinations surveys for these years. As sufficient data becomes available, it will be published here.

Graduates from this program entered programs of further education at these institutions:

Boston University	North Carolina State University
Massachusetts Institute of Technology (MIT)	University of Arizona
Montana State University	Virginia Tech

Other Sources of Information:

American Mathematical Society (AMS): <http://e-math.ams.org>
American Statistical Association (ASA): www.amstat.org
Association for Women in Mathematics (AWM): www.awm-math.org
Canadian Mathematical Society (CMS): <http://camel.math.ca>
International Statistical Institute (ISI): www.cbs.nl/isi
Mathematical Association of America (MAA): www.maa.org
National Council of Teachers of Mathematics (NCTM): www.nctm.org
Society for Industrial and Applied Mathematics (SIAM): www.siam.org
Society of Actuaries: www.soa.org
Department of Mathematical Sciences , Montana State University: www.math.montana.edu

For more information contact:



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¹University of Oregon. 2007. Created by intoCareers, a unit of the University of Oregon. Montana information Montana Career Information System. Discover: 2008 by ACT, Inc.

²Montana State University Department of Mathematical Sciences

³Montana State University Career & Internship Services

Number of graduates/number of respondents: 2004: 6/3; 2005: 1/0; 2006: 2/1; 2007: 7/2