

MATHEMATICS AND STATISTICS

B.A., B.S., B.S./M.S., Ph.D. Degrees, Graduate Certificates, Minors

College of Natural Science and Mathematics

Department of Mathematics and Statistics (<https://www.uaf.edu/dms/>) 907-474-7332

B.A., B.S., MATHEMATICS

The number of new fields in which professional mathematicians find employment grows continually. This department prepares students for careers in industry, government and education.

Two concentrations are available:

- Mathematics
- Statistics

In addition to the major programs, the department provides a number of service courses in support of other programs within the university. Current and detailed information on mathematics degrees and course offerings is available from the department.

The department maintains a math lab that is available for assistance to all students studying mathematics at the baccalaureate level.

Minimum Requirements for Mathematics Bachelor's Degrees: 120 credits

Learn more about the bachelor's degree in mathematics (<https://uaf.edu/academics/programs/bachelors/mathematics.php>), including an overview of the program, career opportunities and more.

ACCELERATED B.S./M.S., MATHEMATICS

The combined Bachelor of Science in Mathematics and Master of Science in Mathematics program allows dedicated mathematics students to complete two degrees in a compressed time frame (typically, five years instead of six), while still maintaining the rigor and content of both degrees.

Minimum Requirements for Accelerated Mathematics B.S./M.S. Degrees: 138 credits

Learn more about the bachelor's degree in mathematics (<https://uaf.edu/academics/programs/bachelors/mathematics.php>), including an overview of the program, career opportunities and more.

Learn more about the master's degree in mathematics (<https://www.uaf.edu/academics/programs/masters/mathematics.php>), including an overview of the program, career opportunities and more.

ACCELERATED B.S., MATHEMATICS/M.S., STATISTICS AND DATA SCIENCE

The combined Bachelor of Science in Mathematics with a concentration in Statistics and Master of Science in Statistics and Data Science program allows dedicated statistics students to complete two degrees in a compressed time frame (typically, five years instead of six), while still maintaining the rigor and content of both degrees. Students will receive

a B.S. in Mathematics with a concentration in Statistics, and an M.S. in Statistics and Data Science.

Minimum Requirements for Accelerated Math B.S./Statistics and Data Science M.S. Degrees: 138 credits

Learn more about the bachelor's degree in mathematics (<https://uaf.edu/academics/programs/bachelors/mathematics.php>), including an overview of the program, career opportunities and more.

Learn more about the master's degree in statistics and data science (<https://uaf.edu/academics/programs/masters/statistics.php>), including an overview of the program, career opportunities and more.

M.S., PH.D., MATHEMATICS

The number of new fields in which professional mathematicians find employment grows continually. This department prepares students for careers in industry, government and education.

The Master of Science in Mathematics prepares students for Ph.D. work, in addition to providing a terminal degree for those planning to enter industry or education. The aim of the Ph.D. program is to provide the student with the expertise to accomplish significant research in applied or pure mathematics, as well as to provide a broad and deep professional education.

In addition to the major programs, the department provides a number of service courses in support of other programs within the university. Current and detailed information on mathematics degrees and course offerings is available from the department.

Minimum Requirements for Mathematics Degrees: M.S.: 30-35 credits; Ph.D.: 18 thesis credits

Learn more about the master's degree in mathematics (<https://www.uaf.edu/academics/programs/masters/mathematics.php>), including an overview of the program, career opportunities and more.

M.S., STATISTICS AND DATA SCIENCE

Statistics is a collection of methods and theories used to make decisions or estimate unknown quantities from incomplete information. Statistical techniques are useful, for example, in estimating plant, animal and mineral abundances; forecasting social, political and economic trends; planning field plot experiments in agriculture; performing clinical trials in medical research; and maintaining quality control in industry. Employment opportunities are excellent for statisticians in many of these areas.

The Master of Science in Statistics and Data Science builds upon UAF's strength in the sciences and our setting in Alaska by introducing a strong quantitative alternative or supplement to existing programs. The curriculum is built around four statistics core courses and flexibility in the selection of elective courses. The core courses are designed to blend mathematical statistics coursework typical of most M.S. programs in statistics with real applications. We believe this blending provides a substantial improvement in the graduate's skills.

Graduates of this program could be labeled quantitative biologists, biometricians, quantitative geologists, geostatisticians, or mathematical statisticians depending upon their specific course work. In addition, this

program prepares individuals for Ph.D.-level work in statistics or their area of application.

Minimum Requirements for Statistics and Data Science M.S.: 30 credits

Learn more about the master's degree in statistics and data science (<https://uaf.edu/academics/programs/masters/statistics.php>), including an overview of the program, career opportunities and more.

GRADUATE CERTIFICATE, APPLIED AND COMPUTATIONAL MATHEMATICS

The graduate certificate in applied and computational mathematics is equivalent to most of a year of coursework done by graduate students in this area. The certificate encourages a more in-depth study of mathematics beyond the undergraduate level. The focus is on mathematics that is useful in the sciences and engineering, especially on techniques that can be applied in computer programs. Furthermore, it provides students with a credential recognizing their additional mathematical expertise.

The certificate is ideal for current graduate students in disciplines other than mathematics who seek greater exposure to mathematical ideas and techniques. It is most suitable for students in the sciences and engineering. It is not suitable for students already enrolled in the M.S. in mathematics or Ph.D. in mathematics programs.

Minimum Requirements for Applied and Computational Mathematics Graduate Certificate: 12 credits

GRADUATE CERTIFICATE, STATISTICS

Statistics is a collection of methods and theories used to make decisions or estimate unknown quantities from incomplete information. Statistical techniques are useful, for example, in estimating plant, animal and mineral abundances; forecasting social, political and economic trends; planning field plot experiments in agriculture; performing clinical trials in medical research; and maintaining quality control in industry. Employment opportunities are excellent for statisticians in many of these areas.

As a postbaccalaureate program, the certificate in statistics is equivalent to a full year of graduate statistics courses and is ideal for current graduate students in disciplines other than statistics (especially the sciences). The graduate certificate in statistics encourages a more in-depth study of statistics and provides students a credential recognizing their quantitative expertise.

Graduates of this program could be labeled quantitative biologists, biometricians, quantitative geologists, geostatisticians, or mathematical statisticians depending upon their specific course work. In addition, this program prepares individuals for Ph.D.-level work in statistics or their area of application.

Minimum Requirements for Statistics Graduate Certificate: 12 credits.

Programs Degrees

- B.A., Mathematics (<https://catalog.uaf.edu/bachelors/mathematics-ba/>)
- B.S., Mathematics (<https://catalog.uaf.edu/bachelors/mathematics-bs/>)

- Accelerated B.S./M.S., Mathematics (<https://catalog.uaf.edu/accelerated-programs/mathematics-bs-ms/>)
- Accelerated B.S., Mathematics/M.S., Statistics and Data Science (<https://catalog.uaf.edu/accelerated-programs/statistics-bs-ms/>)
- M.S., Mathematics (<https://catalog.uaf.edu/masters/mathematics/>)
- M.S., Statistics and Data Science (<https://catalog.uaf.edu/masters/statistics-data-science/>)
- Ph.D., Mathematics (<https://catalog.uaf.edu/phd/mathematics/>)

Graduate Certificates

- Graduate Certificate, Applied and Computational Mathematics (<https://catalog.uaf.edu/graduate-certificates/mathematics/>)
- Graduate Certificate, Statistics (<https://catalog.uaf.edu/graduate-certificates/statistics/>)

Minors

- Minor, Mathematics (<https://catalog.uaf.edu/minors/mathematics/>)
- Minor, Statistics (<https://catalog.uaf.edu/minors/statistics/>)