

GRADUATE CERTIFICATE, APPLIED AND COMPUTATIONAL MATHEMATICS

Overview Graduate Certificate

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 into 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 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

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

Admission Requirements

Complete the following admission requirements:

- Hold a baccalaureate degree from an accredited institution
- Complete Calculus I (MATH F251X), Calculus II (MATH F252X), Calculus III (MATH F253X), Differential Equations (MATH F302) and Computer Science I (CS F201)¹ or their equivalent;
- Complete Linear Algebra (MATH F314)¹ or its equivalent.

¹ Students must earn a C or better in each course.

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

Code	Title	Credits
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General University Requirements

Complete the general university requirements. (<http://catalog.uaf.edu/graduate/>)

Graduate Certificate Requirements

Complete the graduate certificate requirements. (<http://catalog.uaf.edu/graduate/#certificateslicensencurestext>)

Applied and Computational Mathematics Program Requirements

Complete any two of the following: 6

MATH F614	Numerical Linear Algebra
MATH F615	Numerical Analysis of Differential Equations
MATH F660	Advanced Mathematical Modeling
MATH F661	Optimization
MATH F663	Graph Theory

Select two or more from the following electives to total 12 credits for the certificate: 6 - 8

- Any course listed above not already taken
- Any of MATH F617, MATH F632, MATH F658, MATH F665
- At most one of MATH F631, MATH F641, MATH F645, MATH F651
- At most one of MATH F401, MATH F404, MATH F405, MATH F408, MATH F410, MATH F412, MATH F426, MATH F430, MATH F432, MATH F460
- At most one 3- or 4-credit 600-level statistics course, excluding STAT F698
- Or other elective courses approved by a mathematics advisor.