

B.S., MATHEMATICS

Program Requirements

Students must earn a C- grade or better in each course.

Minimum Requirements for Mathematics B.S.: 120 credits

CONCENTRATIONS: MATHEMATICS (P. 1), STATISTICS (P. 1)

Code	Title	Credits
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Pre-major Requirement

Students must be ready to matriculate into MATH F251X before they will be allowed to declare mathematics as their major.

General University Requirements

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

General Education Requirements

Complete the general education requirements. (<http://catalog.uaf.edu/bachelors/general-education-requirements/>)

As part of the general education requirements, complete:

MATH F251X	Calculus I	
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B.S. Degree Requirements

Complete the B.S. degree requirements. (<http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext>)

As part of the B.S. requirements, complete:

MATH F252X	Calculus II	
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PHYS F123X	College Physics I	
and PHYS F124X	and College Physics II	

or PHYS F211X	General Physics I	
and PHYS F212X	and General Physics II	

Mathematics Program Requirements

MATH F253X	Calculus III	4
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MATH F265	Introduction to Mathematical Proofs	3
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MATH F314	Linear Algebra	3
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Complete one of the following concentrations:		29
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Mathematics Concentration		
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Statistics Concentration		
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Concentrations

MATHEMATICS

Code	Title	Credits
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MATH F401	Introduction to Real Analysis	3
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MATH F405	Abstract Algebra	3
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MATH F490	Senior Seminar ¹	2
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Complete at least 21 additional credits of electives. ²

The following are some suggested elective packages:

Pure Math Suggested Elective Package

MATH F305	Geometry	3
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MATH F320	Topics in Combinatorics	3
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or MATH F321	Number Theory	
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MATH F404	Introduction to Topology	3
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MATH F410	Introduction to Complex Analysis	3
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Additional 9 elective credits		9
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Applied Math Suggested Elective Package

MATH F302	Differential Equations	3
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MATH F432	Introduction to Partial Differential Equations	3
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MATH F410	Introduction to Complex Analysis	3
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MATH F460	Mathematical Modeling	3
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Complete two of the following:		6
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MATH F307	Discrete Mathematics	
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MATH F426	Numerical Analysis	
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STAT F300	Statistics	
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Additional 3 elective credits		3
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Elective Package for Mathematics Teachers (Grades 7-12) ³

Complete the following:

CS F201	Computer Science I	3
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MATH F305	Geometry	3
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MATH F316	Introduction to the History and Philosophy of Mathematics	3
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STAT F300	Statistics	3
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or MATH F371	Probability	
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or MATH F408	Mathematical Statistics	
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Complete one from the following:		3
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MATH F307	Discrete Mathematics	
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MATH F320	Topics in Combinatorics	
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MATH F321	Number Theory	
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Complete 2 from the following:		6
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MATH F302	Differential Equations	
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MATH F410	Introduction to Complex Analysis	
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MATH F426	Numerical Analysis	
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MATH F432	Introduction to Partial Differential Equations	
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MATH F460	Mathematical Modeling	
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STATISTICS

Code	Title	Credits
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CS F201	Computer Science I	3
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or NRM F338	Introduction to Geographic Information Systems	
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ENGL F314	Technical Writing	3
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or ENGL F414	Research Writing	
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MATH F371	Probability	3
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MATH F401	Introduction to Real Analysis	3
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or MATH F405	Abstract Algebra	
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MATH F408	Mathematical Statistics	3
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STAT F300	Statistics	3
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STAT F401	Regression and Analysis of Variance	4
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STAT F402	Scientific Sampling	3
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STAT F454	Statistical Consulting Seminar ¹	1
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Additional 3 elective credits at the F300 level or above ⁴		
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- ¹ Fulfills the baccalaureate capstone requirement.
- ² Acceptable elective courses include any math or statistics course at the F300 level or above, and CS F201. At least 15 credits must be math courses. In some cases, courses with strong mathematical content from other disciplines may be used as electives. Such an elective must be approved by an advisor in the Department of Mathematics and Statistics. The requirement that at least 15 credits be math courses still applies.
- ³ We strongly recommend that prospective secondary science teachers seek advising from the UAF School of Education early in their undergraduate degree program, so that they can be appropriately advised of the State of Alaska requirements for teacher licensure. Students may choose to pursue a double major with education or complete a postbaccalaureate teacher certification program.
- ⁴ Acceptable elective courses include any MATH or STAT course at the F300 level or above. In some cases, courses with strong mathematical content from other disciplines may be used as electives. Such an elective must be approved by an advisor in the Department of Mathematics and Statistics.

Note: All mathematics majors – including double majors – must have an advisor from the Department of Mathematics and Statistics.

Note: At least 12 approved mathematics credits at the F300 level or above must be taken while in residence on the Fairbanks campus.