B.S., MATHEMATICS

Minimum Requirements for Degree: 120 credits
Students must earn a C- grade or better in each course.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td><strong>Pre-major Requirement</strong></td>
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<tr>
<td></td>
<td>Students must be ready to matriculate into MATH F251X before they will be allowed to declare mathematics as their major.</td>
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</tbody>
</table>

**General University Requirements**
Complete the general university requirements. (http://catalog.uaf.edu/bachelors/general-education-requirements)

As part of the general education requirements, complete:
- MATH F251X Calculus I

**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
- PHYS F123X College Physics I
- PHYS F124X College Physics II
- or PHYS F211X General Physics I
- and PHYS F212X General Physics II

**Program Requirements**

**Mathematics Concentration**
- MATH F401 Introduction to Real Analysis
- MATH F405 Abstract Algebra
- MATH F490 Senior Seminar

Complete one from the following options: 29

- Pure Math:
  - MATH F305 Geometry
  - MATH F320 Topics in Combinatorics
  - or MATH F321 Number Theory
  - MATH F404 Introduction to Topology
  - MATH F422 Introduction to Complex Analysis
- Additional 9 elective credits

- Applied Math:
  - MATH F302 Differential Equations
  - MATH F421 Applied Analysis
  - MATH F422 Introduction to Complex Analysis
  - MATH F460 Mathematical Modeling
- Complete two from the following:
  - MATH F307 Discrete Mathematics
  - MATH F310 Numerical Analysis

**Statistics Concentration**

- STAT F300 Statistics

Complete the following:
- CS F201 Computer Science I
- or NRM F338 Introduction to Geographic Information Systems
- ENGL F314 Technical Writing
- or ENGL F414 Research Writing
- MATH F371 Probability
- MATH F401 Introduction to Real Analysis
- or MATH F405 Abstract Algebra
- MATH F408 Mathematical Statistics
- STAT F300 Statistics
- STAT F401 Regression and Analysis of Variance
- STAT F402 Scientific Sampling
- STAT F454 Statistical Consulting Seminar ¹

Additional 3 elective credits at the F300 level or above

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.

**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.

**Requirements for Mathematics Teachers (Grades 7-12)**
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.

**Code** | **Title** | **Credits**
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<tr>
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<tbody>
<tr>
<td>CS F201</td>
<td>Computer Science I</td>
<td>3</td>
</tr>
<tr>
<td>MATH F305</td>
<td>Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH F316</td>
<td>Introduction to the History and Philosophy of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>STAT F300</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or MATH F371</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>and MATH F408</td>
<td>and Mathematical Statistics</td>
<td>3</td>
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<tr>
<td>Complete one from the following:</td>
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<td>3</td>
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<tr>
<td>MATH F320</td>
<td>Topics in Combinatorics</td>
<td>3</td>
</tr>
<tr>
<td>MATH F321</td>
<td>Number Theory</td>
<td>3</td>
</tr>
<tr>
<td>MATH F307</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Complete two from the following:</td>
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<td>6-7</td>
</tr>
<tr>
<td>MATH F302</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH F310</td>
<td>Numerical Analysis</td>
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B.S., Mathematics

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<tr>
<td>MATH F421</td>
<td>Applied Analysis</td>
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<tr>
<td>MATH F422</td>
<td>Introduction to Complex Analysis</td>
</tr>
<tr>
<td>MATH F460</td>
<td>Mathematical Modeling</td>
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