B.A., MATHEMATICS

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

Minimum Requirements for Mathematics
B.A.: 120 credits

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

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

B.A. Degree Requirements
Complete the B.A. degree requirements. (http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofartstext)
As part of the B.A. requirements, complete:
- MATH F252X Calculus II

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

Concentrations

MATHEMATICS CONCENTRATION

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH F401</td>
<td>Introduction to Real Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH F405</td>
<td>Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH F490</td>
<td>Senior Seminar 1</td>
<td>2</td>
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</tbody>
</table>
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
  - MATH F320 Topics in Combinatorics 3
  - or MATH F321 Number Theory
  - MATH F404 Introduction to Topology 3
  - MATH F410 Introduction to Complex Analysis 3
  - additional 9 elective credits
- Applied Math Suggested Elective Package
  - MATH F302 Differential Equations 3
  - MATH F410 Introduction to Complex Analysis 3
  - MATH F432 Introduction to Partial Differential Equations 3

MATHEMATICAL MODELING
- MATH F460 Mathematical Modeling 3
Complete 2 of the following:
- MATH F307 Discrete Mathematics
- MATH F426 Numerical Analysis
- STAT F300 Statistics

Additional 3 elective credits
- Elective Package for Mathematics Teachers (Grades 7-12) 3

Statistics Concentration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<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>1</td>
</tr>
<tr>
<td>or MATH F408</td>
<td>Mathematical Statistics</td>
<td></td>
</tr>
</tbody>
</table>
Complete one from the following:
- MATH F307 Discrete Mathematics 3
- MATH F320 Topics in Combinatorics 3
- MATH F321 Number Theory 3
Complete 2 from the following:
- MATH F302 Differential Equations 3
- MATH F410 Introduction to Complex Analysis 3
- MATH F426 Numerical Analysis 3
- MATH F432 Introduction to Partial Differential Equations 3
- MATH F460 Mathematical Modeling 3

STATISTICS CONCENTRATION

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL F314</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL F414</td>
<td>Research Writing</td>
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</tr>
<tr>
<td>MATH F371</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>MATH F401</td>
<td>Introduction to Real Analysis</td>
<td>3</td>
</tr>
<tr>
<td>or MATH F405</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH F408</td>
<td>Mathematical Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT F300</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT F401</td>
<td>Regression and Analysis of Variance</td>
<td>4</td>
</tr>
<tr>
<td>STAT F402</td>
<td>Scientific Sampling</td>
<td>3</td>
</tr>
<tr>
<td>STAT F454</td>
<td>Statistical Consulting Seminar 1</td>
<td>1</td>
</tr>
</tbody>
</table>
Additional 3 elective credits at the F300 level or above 4

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.