B.A. or B.S., Mathematics

Minimum Requirements for Degree: 120 credits

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

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. or B.S. Degree Requirements

Select one from the following:

Complete the B.A. degree requirements. (http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofartsandbacheloroffineartstext)

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

MATH F252X Calculus II

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 F103X College Physics I
and PHYS F104X College Physics II
or PHYS F211X General Physics I
and PHYS F212X General Physics II

Program Requirements

MATH F253X Calculus III 4
MATH F265 Introduction to Mathematical Proofs 3
MATH F314 Linear Algebra 3

Select one from the following options: 29

Mathematics Option

MATH F401 Introduction to Real Analysis
MATH F405 Abstract Algebra
MATH F490 Senior Seminar 1

Select at least 21 additional credits of electives. Following are some suggested elective packages. 2

Pure Math:

MATH F305 Geometry
MATH F320 Topics in Combinatorics
and 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

Select two from the following:

MATH F307 Discrete Modeling
MATH F310 Numerical Mathematics
STAT F300 Statistics

Statistics Option

CS F201 or NRM F338 Computer Science I
or ENGL F414 Research Writing
ENGL F314 Technical 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

Total Credits 39

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 your undergraduate degree program, so that you can be appropriately advised of the State of Alaska requirements for teacher licensure. You may choose to pursue a double major with education or complete a postbaccalaureate teacher certification program.

CS F201 Computer Science I 3
MATH F305 Geometry 3
MATH F306 Introduction to the History and Philosophy of Mathematics 3

Select one from the following:

STAT F300 Statistics 3
or MATH F371 Probability
and MATH F408 Mathematical Statistics

Additional 9 elective credits

MATH F320 Topics in Combinatorics 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH F321</td>
<td>Number Theory</td>
</tr>
<tr>
<td>MATH F307</td>
<td>Discrete Mathematics</td>
</tr>
</tbody>
</table>

Select two from the following: 6-7

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH F302</td>
<td>Differential Equations</td>
</tr>
<tr>
<td>MATH F310</td>
<td>Numerical Analysis</td>
</tr>
<tr>
<td>MATH F421</td>
<td>Applied Analysis</td>
</tr>
<tr>
<td>MATH F422</td>
<td>Introduction to Complex Analysis</td>
</tr>
<tr>
<td>MATH F460</td>
<td>Mathematical Modeling</td>
</tr>
</tbody>
</table>

Total Credits 21-22