Bachelor of Science in Mathematics

Admission Requirements
Satisfy the Application and Admission Requirements for Baccalaureate Programs (http://catalog.uaa.alaska.edu/academicpoliciesprocesses/admissions/undergraduate).

Graduation Requirements
• Satisfy the General University Requirements for Baccalaureate Degrees (http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements).
• Complete the General Education Requirements for Baccalaureate Degrees (http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements/gers).
• Complete the College of Arts and Sciences Requirements (http://catalog.uaa.alaska.edu/undergraduateprograms/cas/#collegeofartsandsciencesrequirementstext).
• Complete the major and additional requirements below.

Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH A251</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH A252</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH A253</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH A265</td>
<td>Fundamentals of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH A303</td>
<td>Introduction to Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH A306</td>
<td>Discrete Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH A314</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH A324</td>
<td>Introduction to Real Analysis</td>
<td>3</td>
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Analysis and Topology
Select one of the following: 3
- MATH A321 Analysis of Several Variables
- MATH A410 Introduction to Complex Analysis
- MATH A430 Concepts of Topology
- MATH A431 Introduction to Differential Geometry

Applied Math
Select one of the following: 3
- BIOL/CHM/PHYS Nonlinear Dynamics and Chaos
- MATH A302 Ordinary Differential Equations
- MATH A422 Partial Differential Equations
- MATH A426 Numerical Analysis

Statistics
Select one of the following: 3-4
- MATH A371 Stochastic Processes
- MATH A407 Mathematical Statistics I
- MATH A408 Mathematical Statistics II
- STAT A307 Probability and Statistics
- STAT A308 Intermediate Statistics for the Sciences
- STAT A401 Statistical Methods
- STAT A402 Scientific Sampling
- STAT A403 Regression Analysis
- STAT A404 Analysis of Variance
- STAT A407 Time Series Analysis
- STAT A408 Multivariate Statistics
- STAT A490 Selected Topics in Statistics

Other Mathematics Courses
Select one of the following: 3
- MATH A305 Introduction to Geometries
- MATH A309 Introduction to Number Theory
- MATH A420 Historical Mathematics

Select any two additional courses from any of the four categories above or from the following: 6
- MATH A490A Selected Topics in Mathematics *
- MATH A495 Mathematics Practicum *
- MATH A498 Individual Research *

Total Credits 45-46

* A maximum of 6 credits of MATH A490A, MATH A495 and MATH A498 may be applied to the degree requirements.

Additional Requirements
• All mathematics majors must take a standardized test of knowledge of mathematics approved by the mathematics faculty for the purpose of evaluating program effectiveness. There is no minimum score required for graduation. This test will normally be taken during the senior year.
• All mathematics majors must complete a portfolio demonstrating their mathematics knowledge. There is no grade for this requirement. The portfolio will normally be submitted in the semester of graduation.

A total of 120 credits is required for the degree, of which 42 credits must be upper division.

Honors in Mathematics
Students majoring in mathematics are eligible to graduate with departmental honors if they satisfy the following requirements:

1. Meet the requirements for Graduation with Honors (http://catalog.uaa.alaska.edu/academicpoliciesprocesses/academicstandardsregulations/graduation).
2. Meet the requirements for a BA/BS in Mathematics.
3. Earn a grade point average of 3.50 or above in the major requirements.
4. Complete a minimum of 12 upper-division credits required for the major in residence.
Program Student Learning Outcomes
Students graduating with a Bachelor of Science in Mathematics will be able to:

• Demonstrate knowledge of the techniques of modern mathematical subjects including calculus, linear algebra, abstract algebra, real analysis, discrete mathematics, and probability and statistics.
• Demonstrate an ability to construct proofs and solve problems using deductive logic, data analysis, computation, modeling, and connections.
• Demonstrate an ability to read, write, and speak mathematics.
• Demonstrate cognizance of their mathematical knowledge, of mathematics around them, and the need for life-long learning.