

Bachelor of Arts in Mathematics

Admission Requirements

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

Graduation Requirements

1. Satisfy the General University Requirements for Baccalaureate Degrees (<http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements/>).
2. Complete the General Education Requirements for Baccalaureate Degrees (<http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements/gers/>).
3. Complete the major and additional requirements below.

Major Requirements

Code	Title	Credits
Core Courses		
MATH A251	Calculus I	4
MATH A252	Calculus II	4
MATH A253	Calculus III	4
MATH A264	Introduction to the Mathematics Major	1
MATH A265	Fundamentals of Mathematics	3
MATH A306	Discrete Methods	3
MATH A314	Linear Algebra	3
MATH A401	Introduction to Real Analysis	3
MATH A405	Introduction to Abstract Algebra	3
MATH A420	Historical Mathematics	3
Analysis and Topology		
Select one of the following:		3
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/CHEM/PHYS A456	Nonlinear Dynamics and Chaos	
MATH A302	Ordinary Differential Equations	
MATH A426	Numerical Analysis	
MATH A432	Partial Differential Equations	
Statistics		
Select one of the following:		3-4
MATH A371	Stochastic Processes	
MATH A407	Mathematical Statistics	

STAT A307	Probability and Statistics
STAT A308	Intermediate Statistics for the Sciences
STAT A402	Scientific Sampling
STAT A403	Regression Analysis
STAT A404	Analysis of Variance
STAT A407	Time Series Analysis
STAT A408	Multivariate Statistics
STAT A410	Statistical Methods

Other Mathematics Courses

Select one of the following:		3
MATH A305	Introduction to Geometries	
MATH A309	Introduction to Number Theory	
MATH A490	Selected Topics in Mathematics	
Select any 6 additional credits from any of the four categories above.		6

Additional Courses

PHIL A101	Introduction to Logic	3
Select 6 credits from the following (a WRTG GER plus one additional selection):		6

WRTG A212	Writing and the Professions
WRTG A213	Writing and the Sciences
WRTG A214	Arguing Across Contexts
ENGL A311	Writing and Rhetoric in Public Life
ENGL A312	Advanced Technical Writing
ENGL A313	Professional Writing
ENGL A414	Research Writing

Select 6 credits from the following:		6
COMM A110	Introduction to Human Communication	
COMM A111	Fundamentals of Oral Communication	
COMM A235	Small Group Communication	
COMM A236	Interviewing	
COMM A237	Interpersonal Communication	
COMM A241	Public Speaking	
COMM A341	Advanced Public Speaking	
THR A121	Fundamentals of Acting	

Mathematics Capstone Experience

Select 1-3 credits from the following:		1-3
MATH A495A	Mathematics Practicum	
MATH A495B	Mathematics or Statistics Internship	
MATH A496	Advanced Readings in Mathematics	
MATH A498	Individual Research	

Total		65-68
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* *A maximum of 6 credits of MATH A490, MATH A495A, MATH A495B, MATH A496 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 cumulative 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 Arts in Mathematics will be able to:

- Demonstrate knowledge of the techniques of modern mathematical subjects including all of algebra, analysis, discrete mathematics, and probability and statistics.
- Demonstrate an ability to solve problems using skills such as deductive logic, data analysis, computation, modeling, connections, and other mathematical techniques.
- Demonstrate an ability to create mathematical proofs.
- Demonstrate an ability to read, write, and speak about mathematics.
- Demonstrate cognizance of their mathematical knowledge, of mathematics around them, and of the benefit of continued study of mathematics.