Bachelor of Arts in Mathematics

The Bachelor of Arts (BA) in Mathematics prepares students for careers in academia, K-12 education, and a myriad of jobs requiring a balance of analytical and interpersonal abilities. In addition to a strong mathematics core curriculum, this degree helps to strengthen communication and critical thinking skills.

Admission Requirements

- Complete the Admission Requirements for Baccalaureate D (http://catalog.uaa.alaska.edu/academicpoliciesprocesses/admissions/undergraduate/)egrees (http://catalog.uaa.alaska.edu/academicpoliciesprocesses/admissions/undergraduate/).

Graduation Requirements

- Complete 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/).
- 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.
- Complete the following major requirements:

Code	Title	Credits
Core Courses		
MATH A251	Calculus I	4-6
or MATH A251F	F.A.T. Calculus I	
MATH A252	Calculus II	4-6
or MATH A252F	F.A.T. Calculus II	
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
MATH A302	Ordinary Differential Equations	
MATH A426	Numerical Analysis	
MATH A432	Partial Differential Equations	
PHYS A456	Nonlinear Dynamics and Chaos	
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 [1]	
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 A111	Fundamentals of Oral Communication	
COMM A235	Small Group Communication	
COMM A237	Interpersonal Communication	
COMM A241	Public Speaking	
COMM A305	Intercultural Communication	
COMM A330	Collaboration and Group Decision Making	

COMM A335	Communication and Conflict	
COMM A340	Nonverbal Communication	
COMM A341	Advanced Public Speaking	
COMM A350	Communication in the Workplace	
COMM A450	Communication and Leadership	
THR A121	Fundamentals of Acting	
Mathematics Capstone Experience		
Select 1-3 credits from the following:		1-3
MATH A495A	Mathematics Practicum [1]	
MATH A495B	Mathematics or Statistics Internship [1]	
MATH A496	Advanced Readings in Mathematics [1]	
MATH A498	Individual Research [1]	
Total		**65-72**

[1] A maximum of 6 credits of MATH A490, MATH A495A, MATH A495B, MATH A496 and MATH A498 may be applied to the degree requirements.

A minimum of 120 credits is required for the degree, of which 39 credits must be upper-division.

Honors in Mathematics

The Bachelor of Arts in Mathematics recognizes distinguished achievement by conferring programmatic honors in mathematics. In order to receive honors in mathematics, a student must meet the following requirements:

- Meet the requirements for Graduation with Honors (http://catalog.uaa.alaska.edu/academicpoliciesprocesses/academicstandardsregulations/graduation/) as outlined in the catalog;
- Meet the requirements for a BA/BS in Mathematics;
- Earn a minimum cumulative GPA of 3.50 in the major requirements;
- 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.