

**University of Alaska College of Education
Initial Endorsement Content Preparation Review
Secondary Mathematics Grades 7-12**

The following content area preparation review is for application to a UAA teacher education program leading to an Alaska Type A Certificate with an initial endorsement in Mathematics Grades 7-12. These requirements are based on the National Council for Teachers of Mathematics (NCTM) guidelines and the Alaska Content and Performance Standards, which define what students in grades 7-12 should know about mathematics. Once the applicant has been admitted to the UAA teacher education program, evaluation of candidate progress toward certification will be guided by the Alaska’s Beginning Teacher Standards, the Guidelines for Preparing Culturally Responsive Teachers for Alaska’s Schools, and the NCATE/NCTM Standards for *Programs for Initial Preparation of Secondary Mathematics Teachers*.

Student Name: _____ **Advisor Signature:** _____ **Date:** _____
(indicating that all standards have been met)

UAA ID: _____ **Praxis II Mathematics Content Knowledge Overall Score:** _____ / 200 **Total Math Credits:** _____ **Math GPA:** _____
Praxis II Subscores: Algebra/Number Theory _____ Functions & Calculus _____ Matrix Algebra & Discrete Math _____ Measurement, Geometry & Trig _____ Data Analysis, Statistics & Probability _____

Applicants need to pass the Praxis II Math Content Knowledge Exam (#0061) with a score of **128** or higher.

Applicants need to further demonstrate their math content knowledge by one of the following three avenues:

- I. Undergraduate degree from UAA with a BA or BS in Mathematics
Coursework is to include the following:

Year of Graduation: _____

	Credits	Grade
MATH 200 Calculus I	_____	_____
MATH 201 Calculus II	_____	_____
MATH 202 Calculus III	_____	_____
MATH 215 Introduction to Mathematical Proofs	_____	_____
MATH 303 Introduction to Modern Algebra	_____	_____
MATH 305 Introduction to Geometries	_____	_____
MATH 306 Discrete Methods	_____	_____
MATH 314 Linear Algebra	_____	_____
MATH 420 History of Mathematics	_____	_____
STAT 307 Probability	_____	_____
STAT 308 <i>Intermediate Statistics for the Sciences (Recommended)</i>	_____	_____

- II. Undergraduate degree with a major in mathematics from a regionally accredited institution (attach transcripts)

Degree Granting University: _____

Year of Graduation: _____

III. Undergraduate degree not in mathematics (attach transcripts) It is *highly recommended* that the candidate majors in mathematics, a math-related area or minors in math.

Complete the following Initial Endorsement Content Preparation Review Matrix. A total of 36 approved semester credits in mathematics and/or math-related fields are required. Pre-calculus coursework may fulfill a maximum of 6 credits of the required 36. Courses may require additional documentation (course syllabus, course description, institution’s grade policy and definitions, course product, etc.) in order to meet the indicators for each NCTM standard. At least one course is needed for each standard A-H.

Initial Endorsement Content Preparation Review Matrix

The following 36 semester credit hour requirements and the Praxis II exam (Test #0061) must be successfully completed **prior** to full admission to the Master of Arts in Teaching Program. With the exception of Standard A (Knowledge of Number and Operation), all courses need to be at the Calculus level or higher. Grades need to be “C” or higher for any class used on this matrix, with a competitive GPA (recommended 2.75 or higher).

Standard Met	NCTM/NCATE Standard	Course Name	Year	Grade	Credits
_____	A. Knowledge of Number and Operation (3 semester hours)				
_____	B. Knowledge of Algebra (3 semester hours) Praxis II Algebra & Number Theory Score: _____				
_____	C. Knowledge of Calculus (9-12 semester hours) Praxis II Functions & Calculus Score: _____				
_____	D. Knowledge of Discrete Mathematics (3 semester hours) Praxis II Matrix Algebra & Discrete Math Score: _____				
_____	E. Knowledge of Geometry and Measurement (3 semester hours) Praxis II Measurement, Geometry & Trig Score: _____				

_____	F. Knowledge of Data Analysis, Statistics, and Probability (3 semester hours) Praxis II Data Analysis, Statistics & Probability Score: _____		
_____	G. Knowledge of the Historical Development of Mathematics (1-3 semester hours)		
_____	H. Knowledge of Reasoning & Proof (minimum of 3 semester hours of proofs-based coursework)		
_____	I. Additional math and/or math-related coursework (To bring total credits to 36 semester hours)		
_____	Knowledge of Mathematical Problem Solving, Communication, Connections and Representation (Coursework completed align with NCTM process indicators)		

Total Credits:

Additional coursework needed: _____

Examples of Coursework Aligning with Standard

- A. Trigonometry, Pre-Calculus
- B. Linear Algebra, Modern Algebra, Number Theory, Discrete Mathematics
- C. Calculus I, II, III, IV, Differential Equations, Complex Analysis, Advanced Calculus
- D. Discrete Methods, Cryptology, Linear Algebra, Matrix Algebra
- E. Introduction to Geometries, Euclidean Geometry, Analytical Geometry, Projective Geometry
- F. Probability, Statistical Analysis, Stochastic Processes, Applied Statistics (e.g. sciences, business, economics, psychology)
- G. History of Mathematics
- H. Introduction to Mathematical Proofs, Modern Algebra, Discrete Methods, Advanced Calculus, Geometry, Number Theory
- I. Complex Analysis, Analysis of Several Variables, Numerical Methods, *applied* credits including physics and some engineering coursework, programming coursework (max. of 3 credits)