

MATHEMATICS EDUCATION

Individuals interested in teaching in K-12 schools must complete a degree in the content area they want to teach plus the teacher preparation program through the Department of Teaching and Learning. Individuals must complete the teaching major/teaching track within that degree program, which may contain different course requirements than the academic major since the sequence of courses is designed to meet state standards. Upon completion of the degree program with the teaching track and the secondary licensure program, one will be eligible for a standard Montana teaching license in this content area.

- Secondary Education Licensure Program (<http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php>)
- Licensure Degree Requirements (<http://catalog.umt.edu/past-catalogs/2017-2018/colleges-schools-programs/education-human-sciences/teaching-learning/lic-secondary-licensure>)

Bachelor of Arts - Mathematics; Mathematics Education Concentration

College Humanities & Sciences

Degree Specific Credits: 67-68

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

Note:

1. The number of degree specific credits required is significantly higher if one also counts the additional course work required by the Teacher Education Program.
2. Note that the Teacher Education Program requires in addition an overall cumulative GPA of at least 2.75.

General Education Requirements

Information regarding these requirements can be found in the General Education Section (<http://catalog.umt.edu/academics/general-education-requirements>) of the catalog.

Summary

Mathematical Sciences Courses Required for the Mathematics Education Concentration	41-42
Core Courses	
Elective Course	
Mathematics Teaching Methods Course	
Student Teaching Requirement for the Mathematical Education Concentration	14
Science Requirement for the Mathematics Education Concentration	12
Secondary Teaching Licensure	
Total Hours	67-68

Mathematical Sciences Courses Required for the Mathematics Education Concentration

Rule: The courses in this category must be completed with a cumulative GPA of at least 2.75.

Core Courses

Rule: Take all of the following courses.

Note:

1. Residency Requirement: At least 4 of the upper-division courses in this category must be taken at UM Missoula (only 3 if the Elective Course is an upper-division course taken at UM-Missoula).
2. Note that taking M 429 satisfies the Advanced College Writing Requirement for this degree.
3. STAT 451 can be substituted for STAT 341, if STAT 451 is not selected as the elective course.

M 171	Calculus I	4
or M 181	Honors Calculus I	
M 172	Calculus II	4
or M 182	Honors Calculus II	
M 221	Introduction to Linear Algebra	4
M 301	Mathematics Technology for Teachers	3
M 307	Introduction to Abstract Mathematics	3
M 326	Number Theory	3
M 429	History of Mathematics	3
M 431	Abstract Algebra I	4
M 439	Euclidean and Non-Euclidean Geometry	3
STAT 341	Introduction to Probability and Statistics	3
or STAT 451	Statistical Methods I	
Total Hours		34

Minimum Required Grade: C-

Elective Course

Select one of the following: 3-4

M 273	Multivariable Calculus
M 311	Ordinary Differential Equations and Systems
M 325	Discrete Mathematics
M 361	Discrete Optimization
M 362	Linear Optimization
M 381	Advanced Calculus I
M 412	Partial Differential Equations
M 414	Deterministic Models
M 432	Abstract Algebra II
M 440	Numerical Analysis
M 445	Statistical, Dynamical, and Computational Modeling
M 461	Practical Big Data Analytics
M 462	Theoretical Basics of Big Data Analytics and Real Time Computation Algorithms
M 472	Introduction to Complex Analysis
M 473	Introduction to Real Analysis
M 485	Graph Theory

STAT 421	Probability Theory	
STAT 422	Mathematical Statistics	
STAT 451	Statistical Methods I	
STAT 452	Statistical Methods II	
Total Hours		3-4

Minimum Required Grade: C-

Mathematics Teaching Methods Course

Rule: Take the following course.

Note: The course number EDU 497 covers many different teaching methods courses. The section of EDU 497 entitled "Methods: 5 - 12 Mathematics" is required for the Mathematics Education option.

EDU 497	Teaching and Assessing	4
Total Hours		4

Minimum Required Grade: C-

Student Teaching Requirement for the Mathematics Concentration

Take the following Course 14

EDU 495	Student Teaching	
Total Hours		14

Minimum Required Grade: C-

Science Requirement for the Mathematics Education Concentration

Rule: Take 12 credits in at most two areas selected from astronomy (ASTR), biology (BIO*), chemistry (CHMY), computer science (CSCI, except CSCI TR*), economics (ECNS), forestry (FORS, WILD), geosciences (GEO), management information systems (BMIS), and physics (PHSX).

Note:

1. Students completing a teaching minor (in another subject) or a second major are exempt from this requirement.
2. Transfer courses listed on the transcript as "CSCI TR*" may include course work in other areas such as Computer Applications (CAPP) and therefore do not count towards this requirement unless a student successfully petitions the Department of Mathematical Sciences.

Minimum Required Grade: C-

12 Total Credits Required

Secondary Teaching Licensure

Note: For licensure to teach mathematics, a student must also gain admission to the Teacher Education Program and meet all the requirements for secondary teaching licensure (see the College of Education and Human Sciences (<http://catalog.umt.edu/past-catalogs/2017-2018/colleges-schools-programs/education-human-sciences>)).