

## Upper-Division Mathematics Requirement

**Rule:** Take 23 credits in this category.

**Note:**

1. Students completing a minor (in another subject) need take only 20 credits.
2. Students completing a second major need take only 18 credits.

Minimum Required Grade: C-

23 Total Credits Required

## Upper-Division Elective Courses

**Note:**

1. Students completing a minor (in another subject) or a second major need take only 6 courses (totaling 18 credits or more).
2. Residency Requirement: At least 4 of the courses in this category must be taken at UM-Missoula (only 3 if M 307 is taken at UM-Missoula).
3. Note that STAT 451 does not count toward this requirement.

Take 7 courses from the following list; at least 3 of them must be at the 400 level:

M 301	Mathematics Technology for Teachers
M 311	Ordinary Differential Equations and Systems
M 325	Discrete Mathematics
M 326	Number Theory
M 361	Discrete Optimization
M 362	Linear Optimization
M 381	Advanced Calculus I
M 412	Partial Differential Equations
M 414	Deterministic Models
M 429	History of Mathematics
M 431	Abstract Algebra I
M 432	Abstract Algebra II
M 439	Euclidean and Non-Euclidean Geometry
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 341	Introduction to Probability and Statistics
STAT 421	Probability Theory
STAT 422	Mathematical Statistics
STAT 452	Statistical Methods II

Minimum Required Grade: C-

## Upper-Division Elective Computer Labs

**Rule:** Computer labs from the following list are optional; if taken (0-2 credits), they count toward the total number of credits required for the Upper-Division Mathematics Requirement.

M 317	Ordinary Differential Equations Computer Lab	1
M 363	Linear Optimization Laboratory	1
M 418	Partial Differential Equations Computer Lab	1
STAT 457	Computer Data Analysis I	1
STAT 458	Computer Data Analysis II	1

Minimum Required Grade: C-

## Science Requirement

**Rule:** Take 18 credits in at most 3 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 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-

18 Total Credits Required

## Advanced College Writing Requirement

**Rule:** Take 1 of the following 2 courses, or any other approved Advanced College Writing course.

M 429	History of Mathematics	3
or M 499	Senior Thesis	
Total Hours		3

Minimum Required Grade: C-

## GPA Requirement

**Note:**

1. A cumulative GPA of 2.0 is required for all courses used to fulfill major requirements.
2. In addition, a cumulative GPA of 2.0 is required for all mathematical sciences courses used to fulfill major requirements. (Mathematical sciences courses are those with a prefix of M or STAT.)

## Foreign Language/Computer Science Requirement

**Rule:** Either complete the General Education Requirement "Group III: Modern and Classical Language" (not the symbolic systems exception), or take one course from the following list.

**Note:** Students completing a second major are exempt from this requirement.

Select one of the following:	3
CSCI 100 Intro to Programming	
CSCI 135 Fund of Computer Science I	
CSCI 136 Fund of Computer Science II	
CSCI 250 Computer Mdlng/Science Majors	
Total Hours	3

Minimum Required Grade: C-

## Requirements for the Applied Mathematics Concentration

**Rule:** Complete the following subcategories

Minimum Required Grade: C-

13-14 Total Credits Required

### Applied Mathematics Option: Core Courses

**Rule:** Take all of the following courses.

M 311 Ordinary Differential Equations and Systems	3
M 412 Partial Differential Equations	3
Total Hours	6

Minimum Required Grade: C-

### Applied Mathematics Option: Elective Courses

**Rule:** Take 2 of the following courses.

**Note:** In addition, M 381 and M 485 are also recommended.

Select two of the following:	7-8
M 414 Deterministic Models	
M 440 Numerical Analysis	
M 445 Statistical, Dynamical, and Computational Modeling	
M 472 Introduction to Complex Analysis	
Total Hours	7-8

Minimum Required Grade: C-

## Combinatorics and Optimization

This degree concentration differs from the BA in Mathematics without a concentration only in the Concentration Requirements.

## Bachelor of Arts - Mathematics; Combinatorics & Optimization Concentration

### College Humanities & Sciences

Degree Specific Credits: 67

**Required Cumulative GPA:** 2.0

## Catalog Year: 2017-2018

**Note:** The degree specific credits are much lower for double-majors and for students completing an additional minor (in another subject): 41 credits for students completing a second major, and 46 credits for students completing a minor.

## 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

Mathematics Core Courses	23
Upper-Division Mathematics Requirement	23
Upper-Division Elective Courses	
Upper-Division Elective Computer Labs	
Science Requirement	18
Advanced College Writing Requirement (usually fulfilled with a course that counts towards the Upper-Division Mathematics Requirement)	
Foreign Language/Computer Science Requirement	3
Requirements for the Combinatorics & Optimization Concentration (usually fulfilled with courses that count towards the Upper-Division Mathematics Requirement)	
Combinatorics & Optimization Concentration: Core Courses	
Combinatorics & Optimization Concentration: Elective Courses	
Total Hours	67

## Mathematics Core Courses

**Rule:** Take all of the following courses.

M 171 Calculus I	4
or M 181 Honors Calculus I	
M 172 Calculus II	4
or M 182 Honors Calculus II	
M 210 Introduction to Mathematical Software	3
M 221 Introduction to Linear Algebra	4
M 273 Multivariable Calculus	4
M 300 Undergraduate Mathematics Seminar	1
M 307 Introduction to Abstract Mathematics	3
Total Hours	23

Minimum Required Grade: C-

## Upper-Division Mathematics Requirement

**Rule:** Take 23 credits in this category.

**Note:**

1. Students completing a minor (in another subject) need take only 20 credits.
2. Students completing a second major need take only 18 credits.

Minimum Required Grade: C-

23 Total Credits Required

### Upper-Division Elective Courses

#### Note:

1. Students completing a minor (in another subject) or a second major need take only 6 courses (totaling 18 credits or more).
2. Residency Requirement: At least 4 of the courses in this category must be taken at UM-Missoula (only 3 if M 307 is taken at UM-Missoula).
3. Note that STAT 451 does not count toward this requirement.

Take 7 courses from the following list; at least 3 of them must be at the 400 level:

M 301	Mathematics Technology for Teachers
M 311	Ordinary Differential Equations and Systems
M 325	Discrete Mathematics
M 326	Number Theory
M 361	Discrete Optimization
M 362	Linear Optimization
M 381	Advanced Calculus I
M 412	Partial Differential Equations
M 414	Deterministic Models
M 429	History of Mathematics
M 431	Abstract Algebra I
M 432	Abstract Algebra II
M 439	Euclidean and Non-Euclidean Geometry
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 341	Introduction to Probability and Statistics
STAT 421	Probability Theory
STAT 422	Mathematical Statistics
STAT 452	Statistical Methods II

Minimum Required Grade: C-

### Upper-Division Elective Computer Labs

**Rule:** Computer labs from the following list are optional; if taken (0-2 credits), they count toward the total number of credits required for the Upper-Division Mathematics Requirement.

M 317	Ordinary Differential Equations Computer Lab	1
M 363	Linear Optimization Laboratory	1

M 418	Partial Differential Equations Computer Lab	1
STAT 457	Computer Data Analysis I	1
STAT 458	Computer Data Analysis II	1

Minimum Required Grade: C-

### Science Requirement

**Rule:** Take 18 credits in at most 3 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 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-

18 Total Credits Required

### Advanced College Writing Requirement

**Rule:** Take 1 of the following 2 courses, or any other approved Advanced College Writing course.

M 429	History of Mathematics	3
or M 499	Senior Thesis	
Total Hours		3

Minimum Required Grade: C-

### GPA Requirement

#### Note:

1. A cumulative GPA of 2.0 is required for all courses used to fulfill major requirements.
2. In addition, a cumulative GPA of 2.0 is required for all mathematical sciences courses used to fulfill major requirements. (Mathematical sciences courses are those with a prefix of M or STAT.)

### Foreign Language/Computer Science Requirement

**Rule:** Either complete the General Education Requirement "Group III: Modern and Classical Language" (not the symbolic systems exception), or take one course from the following list.

**Note:** Students completing a second major are exempt from this requirement.

Select one of the following:		3
CSCI 100	Intro to Programming	
CSCI 135	Fund of Computer Science I	
CSCI 136	Fund of Computer Science II	

CSCI 250	Computer Mdlng/Science Majors	
Total Hours		3

Minimum Required Grade: C-

## Requirements for the Combinatorics & Optimization Concentration

Minimum Required Grade: C-

12-13 Total Credits Required

### Combinatorics & Optimization Option: Core Courses

**Rule:** Take all of the following courses.

M 361	Discrete Optimization	3
M 362	Linear Optimization	3
M 485	Graph Theory	3
Total Hours		9

Minimum Required Grade: C-

### Combinatorics & Optimization Concentration: Elective Courses

Select one of the following: 3-4

CSCI 332	Design/Analysis of Algorithms	
M 414	Deterministic Models	
M 440	Numerical Analysis	
STAT 341	Introduction to Probability and Statistics	
Total Hours		3-4

Minimum Required Grade: C-

## Mathematical Sciences-Computer Science (Combined Major)

The purpose of the combined program is to provide a thorough background in both allied disciplines and to inculcate a deeper understanding of their goals and methods. A student must complete 60 credits in the two disciplines:

- 30 of these credits in Computer Science courses and
- 30 of these credits in Mathematical Sciences courses.

Each student plans a program in consultation with both a Computer Science and a Mathematical Sciences advisor. Students planning to attend graduate school in computer science or the mathematical sciences should consult with their respective advisors.

## Bachelor of Science - Mathematical Sci-Computer Sci

### College Humanities & Sciences

**Degree Specific Credits:** 73

**Required Cumulative GPA:** 2.0

## Catalog Year: 2017-2018

## General Education Requirements

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

## Summary

Mathematical Sciences	31
Computer Science	30
Science Requirement	9-10
Biology	
Chemistry	
Physics	
Public Speaking Requirement	3
Advanced College Writing Requirement	3
Total Hours	76-77

## Mathematical Sciences

**Rule:** Complete the following subcategories.

31 Total Credits Required

### Mathematical Sciences Core

**Rule:** Complete all of the following courses.

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 273	Multivariable Calculus	4
M 307	Introduction to Abstract Mathematics	3
or M 225	Introduction to Discrete Mathematics	
Total Hours		19

Minimum Required Grade: C-

### Mathematical Sciences Electives

**Note:** The combined nine credits of Computer Science Electives and twelve credits of Mathematical Sciences Electives must include at least three 3- or 4-credit courses numbered 400 or above, with at least one chosen from each department (not including M 429 and STAT 451, STAT 452).

Complete 12 credits from the following courses 12

M 311	Ordinary Differential Equations and Systems
M 325	Discrete Mathematics
M 326	Number Theory
M 361	Discrete Optimization
M 362	Linear Optimization
M 381	Advanced Calculus I
M 412	Partial Differential Equations
M 414	Deterministic Models
M 429	History of Mathematics
M 431	Abstract Algebra I

M 432	Abstract Algebra II	
M 439	Euclidean and Non-Euclidean Geometry	
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 341	Introduction to Probability and Statistics	
STAT 421	Probability Theory	
STAT 422	Mathematical Statistics	
STAT 451	Statistical Methods I	
STAT 452	Statistical Methods II	

Total Hours 12

Minimum Required Grade: C-

## Computer Science

**Rule:** Complete the following subcategories.

30 Total Credits Required

### Computer Science Core

**Rule:** Complete all of the following courses.

CSCI 106	Careers in Computer Science	1
CSCI 135	Fund of Computer Science I	3
CSCI 136	Fund of Computer Science II	3
CSCI 205	Programming Languages w/ C/C++	4
CSCI 232	Data Structures and Algorithms	4
CSCI 332	Design/Analysis of Algorithms	3
CSCI 361	Computer Architecture	3

Total Hours 21

Minimum Required Grade: C-

### Computer Science Electives

**Rule:** Complete 9 credits from the following courses.

#### Note:

1. A total of at most three of the nine credits of Computer Science Electives may be in CSCI 398 or CSCI 498.
2. The combined nine credits of Computer Science Electives and twelve credits of Mathematical Sciences Electives must include at least three 3- or 4-credit courses numbered 400 or above, with at least one chosen from each department (not including M 429 and STAT 451, STAT 452).

Complete 9 credits from the following 9

CSCI 315E	Computers, Ethics, and Society	
CSCI 323	Software Science	
CSCI 340	Database Design	
CSCI 390	Research	

CSCI 391	Special Topics	
CSCI 394	Seminar	
CSCI 398	Internship	
CSCI 411	Advanced Web Programming	
CSCI 412	Game and Mobile App	
CSCI 426	Adv Prgrmg Theory/Practice I	
CSCI 427	Adv Prgrmg Theory/Practice II	
CSCI 441	Computer Graphics Programming	
CSCI 443	User Interface Design	
CSCI 444	Data Visualization	
CSCI 446	Artificial Intelligence	
CSCI 447	Machine Learning	
CSCI 448	Pattern Recognition	
CSCI 451	Computational Biology	
CSCI 460	Operating Systems	
CSCI 464	Applications of Mining Big Data	
CSCI 466	Networks	
CSCI 477	Simulation	
CSCI 480	Applied Parallel Computing Techniques	
CSCI 490	Research	
CSCI 491	Special Topics	
CSCI 494	Seminar	
CSCI 498	Internship	
CSCI 499	Senior Thesis/Capstone	

Total Hours 9

Minimum Required Grade: C-

## Science Requirement

**Rule:** Complete the course work from 1 of the following subcategories.

9-10 Total Credits Required

### Biology

**Rule:** If you choose biology, complete all of the following courses.

BIOB 160N	Principles of Living Systems	3
BIOB 161N	Prncpls of Living Systems Lab	1
BIOB 170N	Prncpls Biological Diversity	3
BIOB 171N	Prncpls Biological Dvrsty Lab	2

Total Hours 9

Minimum Required Grade: C-

### Chemistry

**Rule:** If you choose chemistry, complete all of the following courses.

CHMY 141N	College Chemistry I	5
& CHMY 142N	and College Chemistry I Lab	
CHMY 143N	College Chemistry II	5
& CHMY 144N	and College Chemistry II Lab	

Total Hours 10

Minimum Required Grade: C-

**Physics**

**Rule:** If you choose physics, complete all of the following courses.

PHSX 215N	Fund of Physics w/Calc I	4
PHSX 216N	Physics Laboratory I w/Calc	1
PHSX 217N	Fund of Physics w/Calc II	4
PHSX 218N	Physics Laboratory II w/Calc	1
Total Hours		10

Minimum Required Grade: C-

**Public Speaking Requirement**

**Rule:** Complete 1 of the following courses.

COMX 111A	Intro to Public Speaking	3
or COMX 242	Argumentation	
Total Hours		3

Minimum Required Grade: C-

**Advanced College Writing Requirement**

**Note:** Any other approved Advanced College Writing course will also fulfill this requirement.

Select 3 credits from the following:		3
CSCI 315E	Computers, Ethics, and Society	
CSCI 499	Senior Thesis/Capstone	
M 429	History of Mathematics	
M 499	Senior Thesis	
Total Hours		3

Minimum Required Grade: C-

**Suggested Curricula**

**Note:** Students are encouraged to choose their Computer Science and Mathematical Sciences Electives according to one of the following curricula; these tracks are suggestions only and, as such, optional. Note that the suggested curricula do not include an advanced College Writing Course.

**Applied Math–Scientific Programming**

M 311	Ordinary Differential Equations and Systems	3
M 412	Partial Differential Equations	3
M 414	Deterministic Models	3
Select one of the following:		3-4
M 381	Advanced Calculus I	
M 440	Numerical Analysis	
M 472	Introduction to Complex Analysis	
M 473	Introduction to Real Analysis	
STAT 341	Introduction to Probability and Statistics	
Select three of the following:		9
CSCI 441	Computer Graphics Programming	
CSCI 444	Data Visualization	
CSCI 460	Operating Systems	

CSCI 477	Simulation	
Total Hours		21-22

**Combinatorics and Optimization–Artificial Intelligence**

M 361	Discrete Optimization	3
M 362	Linear Optimization	3
Select two of the following:		6
M 325	Discrete Mathematics	
M 414	Deterministic Models	
M 485	Graph Theory	
STAT 341	Introduction to Probability and Statistics	
CSCI 446	Artificial Intelligence	3
CSCI 447	Machine Learning	3
CSCI 460	Operating Systems	3
Total Hours		21

**Data Science (Big Data Analytics)**

M 461	Practical Big Data Analytics	3
M 462	Theoretical Basics of Big Data Analytics and Real Time Computation Algorithms	3
STAT 341	Introduction to Probability and Statistics	3
STAT 451	Statistical Methods I	3
STAT 452	Statistical Methods II	3
Select three of the following:		9
CSCI 444	Data Visualization	
CSCI 447	Machine Learning	
CSCI 448	Pattern Recognition	
CSCI 464	Applications of Mining Big Data	
CSCI 480	Applied Parallel Computing Techniques	
Total Hours		24

**Statistics–Machine Learning**

STAT 341	Introduction to Probability and Statistics	3
STAT 421	Probability Theory	3
Select two of the following:		6
M 325	Discrete Mathematics	
M 362	Linear Optimization	
M 485	Graph Theory	
STAT 422	Mathematical Statistics	
Select three of the following:		9
CSCI 340	Database Design	
CSCI 444	Data Visualization	
CSCI 446	Artificial Intelligence	
CSCI 447	Machine Learning	
CSCI 451	Computational Biology	
Total Hours		21

**Algebra–Analysis**

M 381	Advanced Calculus I	3
M 431	Abstract Algebra I	4
Select two of the following:		7-8
M 326	Number Theory	
M 432	Abstract Algebra II	
M 472	Introduction to Complex Analysis	



M 473	Introduction to Real Analysis	
CSCI 426	Adv Prgrmg Theory/Practice I	3
CSCI 460	Operating Systems	3
CSCI Elective		3
Total Hours		23-24

## Mathematics B.A.

This degree is the BA in Mathematics without a concentration. Students can add one or more of the concentrations in Applied Mathematics, Combinatorics & Optimization, Pure Mathematics, or Statistics to this degree by fulfilling the respective Concentration Requirements (achieved by taking specific Upper-Division Elective Courses). Typically, students declare one of these four concentrations during their sophomore or junior year. Note that the requirements for the Mathematics Education concentration are extensive and differ substantially from the requirements for the other concentrations. Students interested in Mathematics Education are encouraged to declare this concentration as early as possible, preferably during their first year at UM.

## Bachelor of Arts - Mathematics

### College Humanities & Sciences

Degree Specific Credits: 67

Required Cumulative GPA: 2.0

### Catalog Year: 2017-2018

**Note:** The degree specific credits are much lower for double-majors and for students completing an additional minor (in another subject):

- 41 credits for students completing a second major, and
- 46 credits for students completing a minor.

## General Education Requirements

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

## Summary

Mathematics Core Courses	23
Upper-Division Mathematics Requirement	23
Upper-Division Elective Courses	
Upper-Division Elective Computer Labs	
Science Requirement	18
Advanced College Writing Requirement (usually fulfilled with a course that counts towards the Upper-Division Mathematics Requirement)	
Foreign Language/Computer Science Requirement	3
Total Hours	67

## Mathematics Core Courses

**Rule:** Take all of the following courses.

M 171	Calculus I	4
or M 181	Honors Calculus I	
M 172	Calculus II	4

or M 182	Honors Calculus II	
M 210	Introduction to Mathematical Software	3
M 221	Introduction to Linear Algebra	4
M 273	Multivariable Calculus	4
M 300	Undergraduate Mathematics Seminar	1
M 307	Introduction to Abstract Mathematics	3
Total Hours		23

Minimum Required Grade: C-

## Upper-Division Mathematics Requirement

**Rule:** Take 23 credits in this category.

**Note:**

1. Students completing a minor (in another subject) need take only 20 credits.
2. Students completing a second major need take only 18 credits.

Minimum Required Grade: C-

23 Total Credits Required

## Upper-Division Elective Courses

**Note:**

1. Students completing a minor (in another subject) or a second major need take only 6 courses (totaling 18 credits or more).
2. Residency Requirement: At least 4 of the courses in this category must be taken at UM-Missoula (only 3 if M 307 is taken at UM-Missoula).
3. Note that STAT 451 does not count toward this requirement.

Take 7 courses from the following list; at least 3 of them must be at the 400 level

M 301	Mathematics Technology for Teachers
M 311	Ordinary Differential Equations and Systems
M 325	Discrete Mathematics
M 326	Number Theory
M 361	Discrete Optimization
M 362	Linear Optimization
M 381	Advanced Calculus I
M 412	Partial Differential Equations
M 414	Deterministic Models
M 429	History of Mathematics
M 431	Abstract Algebra I
M 432	Abstract Algebra II
M 439	Euclidean and Non-Euclidean Geometry
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 341	Introduction to Probability and Statistics	
STAT 421	Probability Theory	
STAT 422	Mathematical Statistics	
STAT 452	Statistical Methods II	

Minimum Required Grade: C-

### Upper-Division Elective Computer Labs

**Rule:** Computer labs from the following list are optional; if taken (0-2 credits), they count toward the total number of credits required for the Upper-Division Mathematics Requirement.

M 317	Ordinary Differential Equations Computer Lab	1
M 363	Linear Optimization Laboratory	1
M 418	Partial Differential Equations Computer Lab	1
STAT 457	Computer Data Analysis I	1
STAT 458	Computer Data Analysis II	1

Minimum Required Grade: C-

### Science Requirement

**Rule:** Take 18 credits in at most 3 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 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-

18 Total Credits Required

### Advanced College Writing Requirement

**Rule:** Take 1 of the following 2 courses, or any other approved Advanced College Writing course.

M 429	History of Mathematics	3
or M 499	Senior Thesis	
Total Hours		3

Minimum Required Grade: C-

### GPA Requirement

#### Note:

1. A cumulative GPA of 2.0 is required for all courses used to fulfill major requirements.

2. In addition, a cumulative GPA of 2.0 is required for all mathematical sciences courses used to fulfill major requirements. (Mathematical sciences courses are those with a prefix of M or STAT.)

### Foreign Language/Computer Science Requirement

**Rule:** Either complete the General Education Requirement Group III: Modern and Classical Language or take one course from the following list.

**Note:** Students completing a second major are exempt from this requirement.

Select one from the following:	3
CSCI 100	Intro to Programming
CSCI 135	Fund of Computer Science I
CSCI 136	Fund of Computer Science II
CSCI 250	Computer Mdlng/Science Majors
Total Hours	3

Minimum Required Grade: C-

## 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 (p. 101)

## 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	
<b>Total Hours</b>	<b>67-68</b>

### 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	
<b>Total Hours</b>		<b>34</b>

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
<b>Total Hours</b>	<b>3-4</b>

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
<b>Total Hours</b>		<b>4</b>

Minimum Required Grade: C-

### Student Teaching Requirement for the Mathematics Concentration

Take the following Course	14
EDU 495	Student Teaching
<b>Total Hours</b>	<b>14</b>

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 (p. 83)).

## Pure Mathematics

This degree concentration differs from the BA in Mathematics without a concentration only in the Concentration Requirements.

## Bachelor of Arts - Mathematics; Pure Mathematics Concentration

### College Humanities & Sciences

Degree Specific Credits: 68

Required Cumulative GPA: 2.0

### Catalog Year: 2017-2018

**Note:** The degree specific credits are much lower for double-majors and for students completing an additional minor (in another subject):

- 44 credits for students completing a second major, and
- 47 credits for students completing a minor.

## 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

Mathematics Core Courses	23
Upper-Division Mathematics Requirement	23
Upper-Division Elective Courses	
Upper-Division Elective Computer Labs	
Science Requirement	18
Advanced College Writing Requirement (usually fulfilled with a course that counts towards the Upper-Division Mathematics Requirement)	
Foreign Language/Computer Science Requirement	3
Requirements for the Pure Mathematics Concentration (usually fulfilled with courses that count towards the Upper-Division Mathematics Requirement)	
Total Hours	67

## Mathematics Core Courses

**Rule:** Take all of the following courses.

M 171	Calculus I	4
or M 181	Honors Calculus I	
M 172	Calculus II	4
or M 182	Honors Calculus II	
M 210	Introduction to Mathematical Software	3
M 221	Introduction to Linear Algebra	4
M 273	Multivariable Calculus	4
M 300	Undergraduate Mathematics Seminar	1
M 307	Introduction to Abstract Mathematics	3
Total Hours		23

Minimum Required Grade: C-

## Upper-Division Mathematics Requirement

**Rule:** Take 23 credits in this category.

**Note:**

1. Students completing a minor (in another subject) need take only 20 credits.
2. Students completing a second major need take only 18 credits.

Minimum Required Grade: C-

23 Total Credits Required

## Upper-Division Elective Courses

**Note:**

1. Students completing a minor (in another subject) or a second major need take only 6 courses (totaling 18 credits or more).
2. Residency Requirement: At least 4 of the courses in this category must be taken at UM-Missoula (only 3 if M 307 is taken at UM-Missoula).
3. Note that STAT 451 does not count toward this requirement.

Take 7 courses from the following list; at least 3 of them must be at the 400 level.:

M 301	Mathematics Technology for Teachers
M 311	Ordinary Differential Equations and Systems
M 325	Discrete Mathematics
M 326	Number Theory
M 361	Discrete Optimization
M 362	Linear Optimization
M 381	Advanced Calculus I
M 412	Partial Differential Equations
M 414	Deterministic Models
M 429	History of Mathematics
M 431	Abstract Algebra I
M 432	Abstract Algebra II
M 439	Euclidean and Non-Euclidean Geometry
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 341	Introduction to Probability and Statistics
STAT 421	Probability Theory
STAT 422	Mathematical Statistics
STAT 452	Statistical Methods II

Minimum Required Grade: C-

### Upper-Division Elective Computer Labs

**Rule:** Computer labs from the following list are optional; if taken (0-2 credits), they count toward the total number of credits required for the Upper-Division Mathematics Requirement.

M 317	Ordinary Differential Equations Computer Lab	1
M 363	Linear Optimization Laboratory	1
M 418	Partial Differential Equations Computer Lab	1
STAT 457	Computer Data Analysis I	1
STAT 458	Computer Data Analysis II	1

Minimum Required Grade: C-

### Science Requirement

**Rule:** Take 18 credits in at most 3 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 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-

18 Total Credits Required

### Advanced College Writing Requirement

**Rule:** Take 1 of the following 2 courses, or any other approved Advanced College Writing course.

M 429	History of Mathematics	3
or M 499	Senior Thesis	
Total Hours		3

Minimum Required Grade: C-

### GPA Requirement

**Note:**

1. A cumulative GPA of 2.0 is required for all courses used to fulfill major requirements.
2. In addition, a cumulative GPA of 2.0 is required for all mathematical sciences courses used to fulfill major requirements. (Mathematical sciences courses are those with a prefix of M or STAT.)

### Foreign Language/Computer Science Requirement

**Rule:** Either complete the General Education Requirement "Group III: Modern and Classical Language" (not the symbolic systems exception), or take one course from the following list.

**Note:** Students completing a second major are exempt from this requirement.

Select one of the following:		3
CSCI 100	Intro to Programming	
CSCI 135	Fund of Computer Science I	
CSCI 136	Fund of Computer Science II	
CSCI 250	Computer Mdlng/Science Majors	
Total Hours		3

Minimum Required Grade: C-

### Requirements for the Pure Mathematics Concentration

Select four of the following:		15-16
M 381	Advanced Calculus I	
M 431	Abstract Algebra I	
M 432	Abstract Algebra II	
M 472	Introduction to Complex Analysis	
M 473	Introduction to Real Analysis	
Total Hours		15-16

Minimum Required Grade: C-

### Statistics

This degree concentration differs from the BA in Mathematics without a concentration only in the Concentration Requirements.

### Bachelor of Arts - Mathematics; Statistics Concentration

#### College Humanities & Sciences

Degree Specific Credits: 67

Required Cumulative GPA: 2.0

#### Catalog Year: 2017-2018

**Note:** The degree specific credits are much lower for double-majors and for students completing an additional minor (in another subject):

- 41 credits for students completing a second major, and
- 46 credits for students completing a minor.

## 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

Mathematics Core Courses	23
Upper-Division Mathematics Requirement	23
Upper-Division Elective Courses	
Upper-Division Elective Computer Labs	
Science Requirement	18
Advanced College Writing Requirement (usually fulfilled with a course that counts towards the Upper-Division Mathematics Requirement)	
Foreign Language/Computer Science Requirement	3
Requirements for the Statistics Concentration (usually fulfilled with courses that count towards the Upper-Division Mathematics Requirement)	
<b>Total Hours</b>	<b>67</b>

### Mathematics Core Courses

**Rule:** Take all of the following courses.

M 171	Calculus I	4
or M 181	Honors Calculus I	
M 172	Calculus II	4
or M 182	Honors Calculus II	
M 210	Introduction to Mathematical Software	3
M 221	Introduction to Linear Algebra	4
M 273	Multivariable Calculus	4
M 300	Undergraduate Mathematics Seminar	1
M 307	Introduction to Abstract Mathematics	3
<b>Total Hours</b>		<b>23</b>

Minimum Required Grade: C-

### Upper-Division Mathematics Requirement

**Rule:** Take 23 credits in this category.

**Note:**

1. Students completing a minor (in another subject) need take only 20 credits.
2. Students completing a second major need take only 18 credits.

Minimum Required Grade: C-

### Upper-Division Elective Courses

**Note:**

1. Students completing a minor (in another subject) or a second major need take only 6 courses (totaling 18 credits or more).
2. Residency Requirement: At least 4 of the courses in this category must be taken at UM-Missoula (only 3 if M 307 is taken at UM-Missoula).
3. Note that STAT 451 does not count toward this requirement.

Take 7 courses from the following list; at least 3 of them must be at the 400 level:

M 301	Mathematics Technology for Teachers
M 311	Ordinary Differential Equations and Systems
M 325	Discrete Mathematics
M 326	Number Theory
M 361	Discrete Optimization
M 362	Linear Optimization
M 381	Advanced Calculus I
M 412	Partial Differential Equations
M 414	Deterministic Models
M 429	History of Mathematics
M 431	Abstract Algebra I
M 432	Abstract Algebra II
M 439	Euclidean and Non-Euclidean Geometry
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 341	Introduction to Probability and Statistics
STAT 421	Probability Theory
STAT 422	Mathematical Statistics
STAT 452	Statistical Methods II

Minimum Required Grade: C-

### Upper-Division Elective Computer Labs

**Rule:** Computer labs from the following list are optional; if taken (0-2 credits), they count toward the total number of credits required for the Upper-Division Mathematics Requirement.

M 317	Ordinary Differential Equations Computer Lab	1
M 363	Linear Optimization Laboratory	1
M 418	Partial Differential Equations Computer Lab	1
STAT 457	Computer Data Analysis I	1
STAT 458	Computer Data Analysis II	1

Minimum Required Grade: C-

### Science Requirement

**Rule:** Take 18 credits in at most 3 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 minor (in another subject) or a second major are exempt from this requirement.

- 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-

18 Total Credits Required

### Advanced College Writing Requirement

**Rule:** Take 1 of the following 2 courses, or any other approved Advanced College Writing course.

M 429	History of Mathematics	3
or M 499	Senior Thesis	
Total Hours		3

Minimum Required Grade: C-

### GPA Requirement

**Note:**

- A cumulative GPA of 2.0 is required for all courses used to fulfill major requirements.
- In addition, a cumulative GPA of 2.0 is required for all mathematical sciences courses used to fulfill major requirements. (Mathematical sciences courses are those with a prefix of M or STAT.)

### Foreign Language/Computer Science Requirement

**Rule:** Either complete the General Education Requirement "Group III: Modern and Classical Language" (not the symbolic systems exception), or take one course from the following list.

**Note:** Students completing a second major are exempt from this requirement.

Select one of the following: 3

CSCI 100	Intro to Programming	
CSCI 135	Fund of Computer Science I	
CSCI 136	Fund of Computer Science II	
CSCI 250	Computer Mdlng/Science Majors	
Total Hours		3

Minimum Required Grade: C-

### Requirements for the Statistics Concentration

**Note:** Additional mathematics and statistics courses chosen with advisor.

Select four of the following: 12

M 461	Practical Big Data Analytics	
M 462	Theoretical Basics of Big Data Analytics and Real Time Computation Algorithms	
STAT 341	Introduction to Probability and Statistics	
STAT 421	Probability Theory	
STAT 422	Mathematical Statistics	

STAT 452	Statistical Methods II	
Total Hours		12

Minimum Required Grade: C-

## Military Science

Reserve Officers Training Corps, Chad Carlson, Chair

Army ROTC (Reserve Officers' Training Corps) offers college students the opportunity to serve as commissioned officers in the U.S. Army, the Army National Guard, or the U.S. Army Reserve upon graduation. ROTC enhances a student's education by providing unique leadership and management training along with practical leadership experience. Students develop many of the qualities basic to success while earning a college degree and an officer's commission at the same time.

### The Margin of Difference

Army ROTC cadets learn to be leaders and receive hands-on experience in managing physical, financial, and human resources. They develop self-confidence and superior decision-making skills. Employers value these leadership qualities and recognize the associated potential in ROTC graduates.

### Four-Year Program

The four-year Army ROTC program consists of two parts:

- the Basic Course and
- the Advanced Course.

#### Basic Course

The basic course is normally taken during the first two years of college and may be taken without incurring any military obligation. This course covers such subjects as management principles, national defense, military history, and leadership development. Basic course classes include adventure training such as squad tactics and small arms marksmanship. Additional opportunities are also available to conduct small unit training exercises throughout Western Montana. In addition, a variety of outside social and professional enrichment activities are available. All necessary ROTC textbooks, uniforms, and other essential materials for the basic course are furnished to students at no cost. After completing the basic course, students who have demonstrated the potential to become officers and who have met the physical and scholastic standards are eligible to enroll in the Advanced Course. Compression of the Basic Course into two semesters may be arranged for those students who did not take military science courses during their Freshman year.

#### Advanced Course

The Advanced Course is usually taken during the final two years of college. Instruction includes organization and management, tactics, ethics, critical thinking, creative problem solving and further leadership development. Uniforms and equipment in the Advanced Course are furnished to students at no cost. During the summer between their junior and senior years of college, Advanced Course cadets attend Cadet Summer Training (CST), a fully paid four-week leadership practicum. LDAC gives cadets the chance to apply what they have learned in the classroom and introduces them to Army life while also receiving academic credit. Completion of the Advanced Course requires



two years of study. Each cadet in the Advanced Course receives a subsistence allowance of up to \$4,500 for each year of attendance.

## Two-Year Program

The two-year program applies to incoming juniors and community college graduates, students at four-year colleges who did not take ROTC during their first two years of school, and students entering a two-year postgraduate course of study. To enter the two-year program, students must attend a fully paid four-week Leader's Training Course (LTC), normally held during the summer between their sophomore and junior years of college. At LTC, students learn to challenge themselves physically and mentally, and to build their confidence and leadership skills. After successfully completing LTC, students who meet all the necessary enrollment requirements may participate in the Advanced Course.

## Scholarships and Financial Assistance

Army ROTC scholarships are offered for four, three and two years and are awarded on a competitive basis. Each scholarship pays 100% of student's tuition and fees, \$1200 a year for textbooks and supplies, and a monthly stipend totaling up to \$4,500 per year while the scholarship is in effect. Four-year scholarships are awarded to students who will be entering college as freshmen. Two and three-year scholarships are awarded to students already enrolled in college and to Army enlisted personnel on active duty. Additionally, students who attend LTC (see two-year program) may compete for two-year scholarships while at the course. Scholarship recipients can pursue degrees in any accredited four year program at the University of Montana. Students who receive scholarships are required to attain undergraduate degrees in the fields in which their scholarships were awarded.

## Veterans

Veterans may apply their military experience as credit toward the ROTC Basic Course. If eligible, a veteran may enroll directly into the Advanced Course.

## Simultaneous Membership Program

This program allows students to be members of the Army National Guard or the Army Reserve and to enroll in Army ROTC at the same time. Students participating in the Simultaneous Membership Program receive up to \$4,000 per year in tuition assistance, \$4,500 per year in monthly stipends and an additional \$20,000 per year in other benefits. There are also scholarships available for students participating in the Simultaneous Membership Program that are interested in staying in the Army National Guard or the Army Reserve upon graduation that pay up to \$8,500 per year for living expenses and \$1,200 per year for textbooks, supplies and other equipment. These scholarships are in addition to many of the current benefits students receive as part of the Simultaneous Membership Program.

## Service Obligation

There is no military service obligation for basic course students, unless on scholarship. Advanced course and scholarship (contracted) students incur an obligation to serve in the active Army, Army Reserve or National Guard.

## Commission Requirements

In order to earn a commission as a Second Lieutenant in the United States Army, each student must:

1. Complete all required Military Science instruction while attending college as a full-time student, and obtain a baccalaureate or higher degree.
2. Complete a PMS approved US History course.
3. Meet medical and physical fitness standards.
4. Be a U.S. citizen.
5. Successfully complete Cadet Summer Training.
6. Be recommended by the Professor of Military Science.

## Undergraduate Minors

- Military Studies (p. 284)

## Military Studies Minor

### Minor - Military Studies (Minor)

#### College Humanities & Sciences

**Degree Specific Credits:** 33

**Required Cumulative GPA:** 2.5

#### Catalog Year: 2017-2018

**Note:** A total of 24 credits of MSL (Military Science Leadership) courses are allowed toward the bachelor degree for contracted students. A total of 12 credits are allowed toward the bachelor degree for non-contracted students. Obtain a grade of "C" or better in all courses used toward the minor, and a cumulative GPA of 2.5 for Military Science courses.

## Summary

Lower Core Courses	12
Upper Core Courses	12
War History Requirement	3
History/Political Science Requirement	6
Total Hours	33

### Lower Core Courses

**Rule:** Must complete all of the following:

**Note:** The department may waive the Basic Course requirements for following situation courses:

- prior military service,
- Advanced Individual Training (AIT),
- Leader's Training Course (LTC) or
- Accelerated Cadet Commissioning Training (ACCT).

MSL 101	Leadership and Personal Dev	3
MSL 102	Intro to Tactical Leadership	3
MSL 201	Innovative Team Leadership	3



MSL 202	Found of Tactical Leadership	3
Total Hours		12

Minimum Required Grade: C

## Upper Core Courses

**Rule:** Must complete all of the following:

MSL 301	Adaptive Team Leadership	3
MSL 302	Applied Team Leadership	3
MSL 401	Adaptive Leadership	3
MSL 402	Leadership in a Complex World	3
Total Hours		12

Minimum Required Grade: C

## War History Requirement

**Rule:** Must complete 1 of the following

HSTA 316	American Civil War Era	3
or HSTA 333	American Military History	
Total Hours		3

Minimum Required Grade: C

## History/Political Science Requirement

**Rule:** Must complete six credits from the following:

**Note:** Students must complete at least 3 credits from each discipline with at least 3 credits of upper division coursework in addition to the required history course. Student can also take HSTR 301X or HSTR 304H to satisfy the History requirement.

Select at least 3 credits from the following:		3
HSTA 316	American Civil War Era	
HSTA 333	American Military History	
HSTR 272E	Terrorism:Viol Mod Wrld	
PSCI 230X	Intro to International Rel	3
or PSCI 335	American Foreign Policy	
Total Hours		6

Minimum Required Grade: C

## Modern and Classical Languages Literatures Department

Elizabeth Ametsbichler, Chair

Instruction is offered in the following languages and literatures:

- Arabic,
- Chinese,
- French,
- German,
- Classical Greek,
- Italian,

- Japanese,
- Latin,
- Russian and
- Spanish, as well as in
- linguistics,
- foreign literatures in English translation, film, and the study of foreign cultures.

Undergraduate courses have been planned to meet the needs of students who began studying a language in high school as well as those who undertake such study for the first time at the University.

The courses are intended to serve several purposes:

1. Contribute to the general education of students by giving them an opportunity to gain insight into patterns of living and thinking which are different from their own;
2. Enable students to gain proficiency in the language;
3. Prepare candidates for careers in research and college teaching by providing a solid basis for graduate studies in the various languages;
4. Prepare future teachers of foreign languages;
5. Provide language training requisite to careers in government, foreign commerce, and library work;
6. Enable students to read foreign publications and to meet graduate foreign language requirements in their field.

The Department of Modern and Classical Languages and Literatures offers undergraduate majors in

- Classics (Greek and Latin),
- French,
- German,
- Japanese,
- Russian, and
- Spanish.

Within Classics, it is possible to elect options in

- Classical Languages (Latin and Greek),
- Classical Civilization, and
- Latin.

There are undergraduate minors in

- Arabic and
- Chinese.

**High School Preparation:** Credit is automatically granted for Advanced Placement scores of 3, 4, or 5. At each UM Orientation, the department offers a computerized placement/assessment examination in French, German, and Spanish. Students also can arrange individually to take the CLEP exam, administered by Testing Services in French, German, or Spanish.

These exams are not required, but serve one or more of three purposes:

1. **Exemption from the General Education Competency Requirement in Foreign Language:** if the student achieves a score that indicates a competence equivalent to the completion of French, German, or Spanish 102 (second semester). (See the General Education Requirements (p. 30) section of this catalog.)

2. **Placement for further study in the language:** the score achieved on this test is an accurate indicator of the course level at which language study should be resumed at the University (e.g. 102, 201, 202).
3. **Credit by examination:** A student with extensive language study may score high enough on the placement exam to qualify for University credits if she or he places into 202 or 301. By taking the course into which she or he placed (202 or 301) and receiving a B (3.00) or better, the student may then receive four by-pass credits (Pass grade only) for the preceding course (201 or 202).

Students who elect not to take this exam may:

1. Satisfy the General Education Competency Requirement in Foreign Language by successfully completing a University foreign language 102 (second semester) course.
2. Estimate their placement level for further study by the approximate equating of one year of high school study to one semester of university study. Students should consult with the department in making this estimate.

**Foreign Study Programs.** The Department of Modern and Classical Languages and Literatures offers programs of accredited study in Austria, Chile, China, France, Germany, Italy, Japan, Spain, Mexico, and Russia. Each program is supervised by a departmental faculty member, and is open to any student who meets the respective foreign language prerequisites. (There is no language prerequisite for the Study Abroad in Italy, but Italian is recommended.) Details concerning individual programs are available from the Department of Modern and Classical Languages and Literatures. The department also sponsors work/study internships abroad for students in Japanese.

## Undergraduate

- Classics B.A., Classical Civilization Concentration (p. 287)
- Classics B.A., Classical Languages Concentration (p. 288)
- Classics B.A., Latin Concentration (p. 296)
- French B.A. (p. 289)
- German B.A. (p. 291)
- Japanese B.A. (p. 294)
- Russian B.A. (p. 298)
- Spanish B.A. (p. 300)

## Undergraduate Minors

- Arabic Studies (p. 286)
- Chinese (p. 287)
- Classical Civilization (p. 288)
- French (p. 290)
- German (p. 293)
- Greek (p. 294)
- Japanese (p. 295)
- Latin American Studies (p. 296)
- Latin (p. 297)
- Russian (p. 299)
- Russian Studies (p. 300)
- Spanish (p. 301)

## Arabic Studies Minor

## Minor - Arabic Studies (Minor)

### College Humanities & Sciences

**Degree Specific Credits:** 30

**Required Cumulative GPA:** 2.0

### Catalog Year: 2017-2018

**Note:** At least 9 credits must be of upper division courses. A minimum grade of C is required in all the courses taken to fulfill the minor.

## Summary

Lower Core Courses	18
Upper Core Courses	9
Electives	3
<b>Total Hours</b>	<b>30</b>

### Lower Core Courses

**Rule:** Must complete all of the following:

ARAB 101	Elementary Modern Standard Arabic I	5
ARAB 102	Elementary Modern Standard Arabic II	5
ARAB 201	Intermediate Modern Standard Arabic I	4
ARAB 202	Intermediate Modern Standard Arabic II	4
<b>Total Hours</b>		<b>18</b>

Minimum Required Grade: C

### Upper Core Courses

**Rule:** Must complete all of the following:

ARAB 301	Adv Modern Standard Arabic I	3
ARAB 302	Adv Modern Standard Arabic II	3
ARAB 305	The Arab World	3
<b>Total Hours</b>		<b>9</b>

Minimum Required Grade: C

### Electives

**Note:** ARAB 392: Students may count up to 3 credits from an independent study related to the Arabic language or the Arab world. Before taking an independent study outside the Arabic program, you need to consult with the advisor of the minor. Upon consent of the advisor of the academic minor, up to three credits (either taken at the University of Montana or transferred from another college or university) may be counted as part of the electives if at least 75% of the content is related to the Arab world.

Select 3 credits from the following:	3
ARAB 307	Model Arab League Delegates
ARAB 317	Model Arab League Staff
ARAB 392	Independent Study
HSTR 262H	Islamic Civil: Classical Age

HSTR 264H Islamic Civ. Modrn Era	
Total Hours	3

Minimum Required Grade: C

## Chinese Minor

### Minor - Chinese (Minor)

#### College Humanities & Sciences

Degree Specific Credits: 29

Required Cumulative GPA: 2.0

#### Catalog Year: 2017-2018

### Summary

Lower Core Courses	20
Upper Division Electives	9
Total Hours	29

#### Lower Core Courses

**Rule:** Must complete all of the following:

CHIN 101	Elementary Chinese I	5
CHIN 102	Elementary Chinese II	5
CHIN 201	Intermediate Chinese I	5
CHIN 202	Intermediate Chinese II	5
Total Hours		20

Minimum Required Grade: C-

#### Upper Division Electives

**Note:** With prior approval, 3 of these credits may be in China-focused courses offered by other departments.

Must complete 9 credits from the following:	9
CHIN 313L	Chinese Poetry in Translation
CHIN 314L	Traditiona Chinese Literature
CHIN 380	Chinese Folktales
CHIN 388	Readings in Classical Chinese
Total Hours	9

Minimum Required Grade: C-

## Classical Civilization

Bachelor of Arts - Classics; Classical Civilization Concentration

#### College Humanities & Sciences

Degree Specific Credits: 39

Required Cumulative GPA: 2.5

#### Catalog Year: 2017-2018

#### General Education Requirements

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

### Summary

Classics Core Courses	24
Literature and History	
Languages: Latin or Greek	
Classics Electives	15
Total Hours	39

#### Classics Core Courses

**Rule:** Must complete 24 credits from the following subcategories of classes:

##### Literature and History

CLAS 160L	Classical Mythology	3
CLAS 251L	The Epic	3
or CLAS 252L	Greek Drama: Politics on Stage	
CLAS 399	Capstone	3
HSTR 302H	Ancient Greece	3
or HSTR 304H	Ancient Rome	
Total Hours		12

Minimum Required Grade: C-

##### Languages

**Rule:** Student must complete 12 credits in one of the following options:

##### Option One: Latin

Latin		12
LATN 101	Elementary Latin I	
LATN 102	Elementary Latin II	
LATN 201	Intermediate Latin I	
LATN 202	Intermediate Latin II	
Total Hours		12

Minimum Required Grade: C-

##### Option Two: Greek

Greek		12
GRK 101	Elementary Greek I	
GRK 102	Elementary Greek II	
GRK 201	Intermediate Greek I	
GRK 202	Intermediate Greek II	
Total Hours		12

Minimum Required Grade: C-

##### Classics Electives

**Note:** Classes taken in fulfillment of the Classics Core cannot be counted towards electives.

Select 15 credits of the following: 15

ARTH 407	Roman and Early Christian Art	
CLAS 320	Women in Antiquity	
CLAS 360H	Ancient Greek Civ and Culture	
CLAS 365E	The Roots of Western Ethics	
GRK 101	Elementary Greek I	
GRK 102	Elementary Greek II	
GRK 201	Intermediate Greek I	
GRK 202	Intermediate Greek II	
GRK 300	Major Greek Writers	
HSTR 301X	Ancient Greek Social History	
HSTR 302H	Ancient Greece	
HSTR 304H	Ancient Rome	
LATN 101	Elementary Latin I	
LATN 102	Elementary Latin II	
LATN 201	Intermediate Latin I	
LATN 202	Intermediate Latin II	
LATN 311	Major Latin Authors	
PHL 363H	Ancient Greek and Roman Philosophy	
PHL 465	Plato	
PHL 466	Aristotle	
Total Hours		15

Minimum Required Grade: C-

## Classical Civilization Minor Minor - Classical Civilization (Minor)

### College Humanities & Sciences

Degree Specific Credits: 24

Required Cumulative GPA: 2.5

### Catalog Year: 2017-2018 Summary

Lower Division Core	6
Language Requirements	6
Greek	
Latin	
Degree Electives	12
Total Hours	24

### Lower Division Core

Rule: Must complete all of the following:

CLAS 155L	Survey of Greek and Roman Lit	3
CLAS 160L	Classical Mythology	3
Total Hours		6

Minimum Required Grade: C-

### Language Requirements

Rule: Must complete 1 of the following language sequences

#### Option One: Greek

Greek		6
GRK 101	Elementary Greek I	
GRK 102	Elementary Greek II	
Total Hours		6

Minimum Required Grade: C-

#### Option Two: Latin

Latin		6
LATN 101	Elementary Latin I	
LATN 102	Elementary Latin II	
Total Hours		6

Minimum Required Grade: C-

### Degree Electives

Rule: Must complete the following subcategories

12 Total Credits Required

#### Electives I

Select three of the following: 9

ARTH 407	Roman and Early Christian Art	
CLAS 251L	The Epic	
CLAS 252L	Greek Drama: Politics on Stage	
CLAS 320	Women in Antiquity	
CLAS 360H	Ancient Greek Civ and Culture	
CLAS 365E	The Roots of Western Ethics	
GRK 201	Intermediate Greek I	
GRK 202	Intermediate Greek II	
GRK 300	Major Greek Writers	
LATN 201	Intermediate Latin I	
LATN 202	Intermediate Latin II	
LATN 311	Major Latin Authors	
PHL 363H	Ancient Greek and Roman Philosophy	
Total Hours		9

Minimum Required Grade: C-

#### Electives II

Select one of the following: 3

HSTR 301X	Ancient Greek Social History	
HSTR 302H	Ancient Greece	
HSTR 304H	Ancient Rome	
Total Hours		3

Minimum Required Grade: C-

## Classical Languages

# Bachelor of Arts - Classics; Classical Languages Concentration

## College Humanities & Sciences

Degree Specific Credits: 39

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

## 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

Classics Core Courses	24
Literature and History	
Languages: Latin or Greek	
Classical Language Electives	15
<b>Total Hours</b>	<b>39</b>

### Classics Core Courses

**Rule:** Must complete 24 credits from the following subcategories of classes:

#### Literature and History

CLAS 160L	Classical Mythology	3
CLAS 251L	The Epic	3
or CLAS 252L	Greek Drama: Politics on Stage	
CLAS 399	Capstone	3
HSTR 302H	Ancient Greece	3
or HSTR 304H	Ancient Rome	
<b>Total Hours</b>		<b>12</b>

Minimum Required Grade: C-

#### Languages

**Rule:** Student must complete 12 credits in one of the following options:

#### Option One: Latin

Latin		12
LATN 101	Elementary Latin I	
LATN 102	Elementary Latin II	
LATN 201	Intermediate Latin I	
LATN 202	Intermediate Latin II	
<b>Total Hours</b>		<b>12</b>

Minimum Required Grade: C-

#### Option Two: Greek

Greek		12
GRK 101	Elementary Greek I	
GRK 102	Elementary Greek II	
GRK 201	Intermediate Greek I	

GRK 202	Intermediate Greek II	
<b>Total Hours</b>		<b>12</b>

Minimum Required Grade: C-

### Classical Language Electives

**Rule:** Complete an additional 15 credits of Greek and Latin Language.

A minimum of 9 credits in each language is required. Classes taken in fulfillment of the Classics Core cannot be counted towards Classical Language Electives.

Select 15 credits of the following:	15
GRK 101	Elementary Greek I
GRK 102	Elementary Greek II
GRK 201	Intermediate Greek I
GRK 202	Intermediate Greek II
GRK 300	Major Greek Writers
LATN 101	Elementary Latin I
LATN 102	Elementary Latin II
LATN 201	Intermediate Latin I
LATN 202	Intermediate Latin II
LATN 311	Major Latin Authors

**Total Hours** 15

Minimum Required Grade: C-

## French B.A.

# Bachelor of Arts - French

## College Humanities & Sciences

Degree Specific Credits: 30

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

**Note:** Students are required to maintain a minimum overall GPA of 2.5 in all upper-division French courses presented in fulfillment of requirements for the French major. Must complete a minimum of 30 French upper division credits. FRCH 101 through FRCH 202, or equivalent, are a prerequisite for this major. A minimum of twelve upper-division credits for the major must be taken from UM faculty on the UM campus.

## 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

Upper Division Core	9
Survey Course Electives	9
Degree Electives	6
Literature and/or Culture Courses	6
<b>Total Hours</b>	<b>30</b>

## Upper Division Core

**Rule:** Must complete all of the following courses:

FRCH 301	Adv Grammar/Oral Writ Exprsn	3
FRCH 350	French Civ & Culture	3
FRCH 421	Adv Stylistics & Oral Arg	3
Total Hours		9

Minimum Required Grade: C-

## Survey Course Electives

Select three of the following: 9

FRCH 310	Fr. Lit. Cult. Mid. Age Renass	
FRCH 311	Fr. Lit. Cult. 17th 18th Cent.	
FRCH 312	Fr. Lit. Cult. Long 19th Cent.	
FRCH 313	Literature and Culture III: French and Francophone Literatures and Cultures of the 20th Century	
Total Hours		9

Minimum Required Grade: C-

## Degree Electives

Select at least 6 credits from the following: 6

FRCH 300	Intro to Literature in French	
FRCH 338	The French Cinema	
FRCH 339	Surv African Cinema	
FRCH 391	Special Topics	
FRCH 392	Independent Study	
Total Hours		6

Minimum Required Grade: C-

## Literature and/or Culture Courses

Select 6 credits from the following: 6

FRCH 420	Studies in French Prose	
FRCH 430	Studies in French Drama	
FRCH 440	Studies in French Poetry	
FRCH 491	Special Topics	
FRCH 492	Independent Study	
FRCH 494	Seminar/Workshop	
Total Hours		6

Minimum Required Grade: C-

## Teaching French Concentration

### Extended Major Teaching Field of French

For an endorsement in the extended major teaching field of French, a student must complete the requirements for the B.A. with a major in French including FRCH 421, LING 270S, and MCLG 410. Study in a French speaking country, provided either through the university's Study Abroad Program or an experience considered to be equivalent, also is required.

French qualifies for a single field endorsement. However, there is a limited demand in the majority of Montana high schools for teachers with a single endorsement in French. Students should complete the requirements for a second teaching endorsement (major or minor) in another field in more demand in high schools.

To sign up for this option, you need to contact the Curriculum and Instruction Department. Do not fill out a major/minor form for graduation or the major/minor/concentration section of the major change form. Approvals for this option must come from the Curriculum and Instruction Department.

Tracks will not appear on your UM transcript, diploma, university lists, student data system, or university publication and are used for advising purposes only. You do not fill out a major change for a track.

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 Curriculum and Instruction. 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 (p. 101)

## Teaching Licensure Requirements

**Note:** Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching & Learning (p. 95) in the College of Education and Human Sciences for more information. A major GPA of 2.75 is required to be eligible for student teaching.

## Teaching Track

**Rule:** Must complete all of the following courses

LING 270S	Intro to Linguistics	3
MCLG 410	Methods Teaching Foreign Language	3
Total Hours		6

Minimum Required Grade: C-

# French Minor

## Minor - French (Minor)

## College Humanities & Sciences

Degree Specific Credits: 15

Required Cumulative GPA: 2.0



## Catalog Year: 2017-2018

**Note:** FRCH 101-FRCH 202, or equivalent, are prerequisites to the minor in French. A minimum of six upper-division credits for the minor must be taken from UM faculty on the UM campus.

### Summary

Upper Division Core	6
Degree Electives	9
Total Hours	15

### Upper Division Core

**Rule:** Must complete all of the following:

FRCH 301	Adv Grammar/Oral Writ Exprsn	3
FRCH 350	French Civ & Culture	3
Total Hours		6

Minimum Required Grade: C-

### Degree Electives

**Rule:** Must complete the following subcategories

9 Total Credits Required

#### 300-level courses

Select two of the following: 6

FRCH 310	Fr. Lit. Cult. Mid. Age Renass	
FRCH 311	Fr. Lit. Cult. 17th 18th Cent.	
FRCH 312	Fr. Lit. Cult. Long 19th Cent.	
FRCH 313	Literature and Culture III: French and Francophone Literatures and Cultures of the 20th Century	
FRCH 338	The French Cinema	

Total Hours 6

Minimum Required Grade: C-

#### 400-level courses

Select 3 credits from the following: 3

FRCH 420	Studies in French Prose	
FRCH 421	Adv Stylistics & Oral Arg	
FRCH 430	Studies in French Drama	
FRCH 440	Studies in French Poetry	
FRCH 491	Special Topics	
FRCH 492	Independent Study	
FRCH 494	Seminar/Workshop	

Total Hours 3

Minimum Required Grade: C-

### Teaching French Concentration

A teaching minor is an academic minor which may contain different course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete a teaching major in a content

area plus the teacher preparation program through the Department of Curriculum and Instruction. Additional teaching areas can be added through completion of either a teaching major or a teaching minor in that content area.

- Secondary Education Licensure Program (<http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php>)
- Licensure Degree Requirements (p. 101)

### Teaching Licensure Requirements

**Note:** Individuals completing a teaching minor must also complete a teaching major in another content area. Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning (p. 95) in the College of Education and Human Sciences for more information. A minor GPA of 2.75 is required to be eligible for student teaching.

### Teaching Concentration Requirements

**Rule:** Must complete all of the following:

LING 270S	Intro to Linguistics	3
MCLG 410	Methods Teaching Foreign Language	3
Total Hours		6

Minimum Required Grade: C-

## German B.A. Bachelor of Arts - German

### College Humanities & Sciences

**Degree Specific Credits:** 46

**Required Cumulative GPA:** 2.5

## Catalog Year: 2017-2018

**Note:** Students are required to maintain a minimum overall GPA of 2.5 in all upper-division GRMN courses presented in fulfillment of requirements for the German major.

### 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

Language Core	16
Lower Division Elective	3
Upper Division Core Courses	21-22
German Culture, Film, and Literature Electives	9
Optional Lower-Division Elective	
Total Hours	49-50

## Language Core

**Rule:** Must complete all of the following courses:

GRMN 101	Elementary German I	4
GRMN 102	Elementary German II	4
GRMN 201	Intermediate German I	4
GRMN 202	Intermediate German II	4
Total Hours		16

Minimum Required Grade: C-

*Optional Lower-Division Elective*

**Rule:** May take the following course

GRMN 106H	Introduction to German Culture and Civilization	3
Total Hours		3

Minimum Required Grade: C-

## Upper Division Core Courses

**Rule:** Must complete all of the following subcategories

Minimum Required Grade: C-

21-22 Total Credits Required

### Subcategory 1

**Rule:** Must complete all of the following courses

GRMN 301	German: Oral and Written Expression I	3
GRMN 311	Introduction to German Literature	3
Total Hours		6

Minimum Required Grade: C-

### Subcategory 2

**Rule:** Must complete 1 of the following courses

GRMN 302	German Oral & Written Expression II	3-4
or GRMN 305	Practicum in German Language	
Total Hours		3-4

Minimum Required Grade: C-

### Subcategory 3

**Rule:** Must complete the following courses

GRMN 312	Introduction to German Literature: Drama/Poetry	3
Total Hours		3

Minimum Required Grade: C-

### Subcategory 4

**Rule:** Must complete the following courses

LING 270S	Intro to Linguistics	3
Total Hours		3

Minimum Required Grade: C-

### Subcategory 5

**Rule:** Must complete at least 2 3-credit courses in literature at the 400 level.

Select two of the following:

GRMN 431	German Literature 1760-1832	6
GRMN 441	19th Century German Literature	
GRMN 451	20th Century German Literature to 1945	
GRMN 452	20th Century German Literature Since 1945	
GRMN 491	Special Topics	
Total Hours		6

Minimum Required Grade: C-

## German Culture, Film, and Literature Electives

**Rule:** May substitute a 400-level course with consent of instructor

**Note:** The upper-division writing expectation must be met by successfully completing either GRMN 351H or GRMN 352H.

Select three of the following:

GRMN 317L	Introduction to Multicultural Literature in Contemporary Germany	9
GRMN 322L	Survey of German Cinema	
GRMN 340L	Nature and the Environment in German Literature and Film	
GRMN 350	German Culture & Civilization	
GRMN 351H	German Culture: Beginnings to Romanticism	
GRMN 352H	German Culture 1900-Present	
Total Hours		9

Minimum Required Grade: C-

## Optional Lower-Division Elective

GRMN 106H	Introduction to German Culture and Civilization	3
Total Hours		3

Minimum Required Grade: C-

## Teaching German Concentration

### Extended Major Teaching Field of German

For an endorsement in the extended major teaching field of German, a student must complete the requirements for the B.A. with a major in German which includes LING 270S, plus MCLG 410. Study in a German language country, provided either through the University's Study Abroad Program or an experience considered to be equivalent, also is required. German qualifies for a single field endorsement. However, there is a limited demand in the majority of Montana high schools for teachers with a single endorsement in German. Students are encouraged to complete the requirements for a second teaching endorsement (major or minor) in another field in more demand in high schools.

To sign up for this option, you need to contact Teaching and Learning Department. Do not fill out a major/minor form for graduation or the major/minor/concentration section of the major change form. Approvals for this option must come from the Curriculum and Instruction Department.

Concentrations will not appear on your UM transcript, diploma, university lists, student data system, or university publication and are used for advising purposes only. You do not fill out a major change for a track.

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 Curriculum and Instruction. 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 (p. 101)

### Teaching Licensure Requirements

**Note:** Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning (p. 95) in the College of Education and Human Sciences for more information. A major GPA of 2.75 is required to be eligible for student teaching.

### Teaching Concentration

**Rule:** Must complete the following courses

LING 270S	Intro to Linguistics	3
MCLG 410	Methods Teaching Foreign Language	3
Total Hours		6

Minimum Required Grade: C-

## German Minor

### Minor - German (Minor)

### College Humanities & Sciences

Degree Specific Credits: 34

Required Cumulative GPA: 2.5

### Catalog Year: 2017-2018

## Summary

Language Core	16
Lower Division Elective	3
Upper Division Core Courses	12-13
German Culture, Film, and Literature Electives	3
Total Hours	34-35

### Language Core

**Rule:** Must complete all of the following courses:

GRMN 101	Elementary German I	4
GRMN 102	Elementary German II	4
GRMN 201	Intermediate German I	4
GRMN 202	Intermediate German II	4
Total Hours		16

Minimum Required Grade: C-

### Lower Division Elective

**Rule:** Must take the following course

GRMN 106H	Introduction to German Culture and Civilization	3
Total Hours		3

Minimum Required Grade: C-

### Upper Division Core Courses

**Rule:** Must complete all of the following subcategories

**Note:** Native or near-native speakers of German must substitute 2 400-level literature courses for GRMN 301 and GRMN 302.

Minimum Required Grade: C-

12-13 Total Credits Required

#### Subcategory 1

**Rule:** Must complete all of the following courses

GRMN 301	German: Oral and Written Expression I	3
GRMN 311	Introduction to German Literature	3
Total Hours		6

Minimum Required Grade: C-

#### Subcategory 2

**Rule:** Must complete 1 of the following courses

GRMN 302	German Oral & Written Expression II	3-4
or GRMN 305	Practicum in German Language	
Total Hours		3-4

Minimum Required Grade: C-

#### Subcategory 3

**Rule:** Must complete the following courses

GRMN 312	Introduction to German Literature: Drama/Poetry	3
Total Hours		3

Minimum Required Grade: C-

## German Culture, Film, and Literature Electives

Select one of the following: 3

GRMN 317L	Introduction to Multicultural Literature in Contemporary Germany	3
GRMN 322L	Survey of German Cinema	
GRMN 340L	Nature and the Environment in German Literature and Film	
GRMN 350	German Culture & Civilization	
GRMN 351H	German Culture: Beginnings to Romanticism	
GRMN 352H	German Culture 1900-Present	

Total Hours 3

Minimum Required Grade: C-

## Teaching German Concentration

A teaching minor is an academic minor which may contain different course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete a teaching major in a content area plus the teacher preparation program through the Department of Curriculum and Instruction. Additional teaching areas can be added through completion of either a teaching major or a teaching minor in that content area.

- Secondary Education Licensure Program (<http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php>)
- Licensure Degree Requirements (p. 101)

To sign up for this option, you need to contact the Teaching and Learning Department. Do not fill out a minor form for graduation or the minor section of the major change form. Approvals for this option must come from the Curriculum and Instruction Department.

## Teaching Licensure Requirements

**Note:** Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning (p. 95) in the College of Education and Human Sciences for more information. Individuals completing a teaching minor must also complete a teaching major in another content area. A minor GPA of 2.75 is required to be eligible for student teaching.

## Teaching Concentration Requirements

**Rule:** Must complete both of the following

LING 270S	Intro to Linguistics	3
MCLG 410	Methods Teaching Foreign Language	3

Total Hours 6

Minimum Required Grade: C-

## Greek Minor

## Minor - Greek (Minor)

### College Humanities & Sciences

Degree Specific Credits: 21

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

## Summary

Required Lower Division Courses	12
Required Upper Division Courses	9
Total Hours	21

## Required Lower Division Courses

**Rule:** Must complete all of the following courses:

GRK 101	Elementary Greek I	3
GRK 102	Elementary Greek II	3
GRK 201	Intermediate Greek I	3
GRK 202	Intermediate Greek II	3
Total Hours		12

Minimum Required Grade: C-

## Required Upper Division Courses

Select 9 credits from the following: 9

GRK 300	Major Greek Writers	
GRK 391	Special Topics	
GRK 392	Independent Study	
GRK 492	Independent Study	

Total Hours 9

Minimum Required Grade: C-

## Japanese B.A.

### Bachelor of Arts - Japanese

### College Humanities & Sciences

Degree Specific Credits: 55

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

**Note:** Students are required to maintain a minimum GPA of 2.5 in all their upper-division JPNS courses presented in fulfillment of requirements for the Japanese major. All other courses taken to satisfy the requirements of the major or minor must be completed with a grade of C- or better; the minimum GPA required is 2.00 in all lower division work attempted in the major.

## General Education Requirements

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

### Summary

Lower Division Core Courses	29
Language Core	
Culture and Civilization Core	
East Asian Studies	
Upper Division Core Courses	14
Major Electives	12
<b>Total Hours</b>	<b>55</b>

### Lower Division Core Courses

**Rule:** Complete the following subcategories of courses:

29 Total Credits Required

#### Language Core

**Rule:** Must complete all of the following courses:

JPNS 101	Elementary Japanese I	5
JPNS 102	Elementary Japanese II	5
JPNS 201	Intermediate Japanese I	5
JPNS 202	Intermediate Japanese II	5
<b>Total Hours</b>		<b>20</b>

Minimum Required Grade: C-

#### Culture and Civilization Core

**Rule:** Must complete the following course:

JPNS 150H	Japanese Cult & Civiliz	3
<b>Total Hours</b>		<b>3</b>

Minimum Required Grade: C-

#### East Asian Studies

**Note:** Student must complete at least 2 East Asian studies or history courses on Japan or East Asia at any level that are not taught in the Modern and Classical Languages and Literature department for a total of 6 additional credits.

### Upper Division Core Courses

**Rule:** Must complete all of the following courses:

**Note:** Either JPNS 412 or JPNS 415 may be taken to complete the 14 credits. JPNS 411 is repeatable once.

JPNS 301	Advanced Japanese	4
JPNS 302	Advanced Japanese	4
JPNS 411	Mod Jpns Wrtrs/Thinkers (repeatable once)	3
JPNS 412	Intro Classical Japanese	3
or JPNS 415	Adv Jpns for Professionals	
<b>Total Hours</b>		<b>14</b>

Minimum Required Grade: C-

### Major Electives

**Note:**

- JPNS 392 may be taken for up to 3 credits only.
- Only 3 credits from JPNS 390 or JPNS 392 may count towards the 9 credits.
- JPNS 391 may only be counted as an elective when the course is a Japanese literature, Japanese pedagogy/linguistics, or Japanese cultural course not part of basic Japanese language instruction.

Select 12 credits from the following:	12
JPNS 311	Jpns Clasc Lit Engl Trans
JPNS 312	Jpns Lit Medieval to Mod
JPNS 371	Japanese Film and Anime
JPNS 390	Research
JPNS 391	Special Topics
JPNS 392	Independent Study
JPNS 431	Post-War Japanese Lit
JPNS 491	Special Topics
JPNS 492	Independent Study
<b>Total Hours</b>	<b>12</b>

Minimum Required Grade: C-

## Japanese Minor

### Minor - Japanese (Minor)

#### College Humanities & Sciences

**Degree Specific Credits:** 32

**Required Cumulative GPA:** 2.0

### Catalog Year: 2017-2018

#### Summary

Lower Division Core Courses	23
Upper Division Elective Courses	9
<b>Total Hours</b>	<b>32</b>

### Lower Division Core Courses

**Rule:** Must complete all of the following courses:

JPNS 101	Elementary Japanese I	5
JPNS 102	Elementary Japanese II	5
JPNS 150H	Japanese Cult & Civiliz	3
JPNS 201	Intermediate Japanese I	5
JPNS 202	Intermediate Japanese II	5
<b>Total Hours</b>		<b>23</b>

Minimum Required Grade: C-

## Upper Division Elective Courses

### Note:

- JPNS 392 may be taken for up to 3 credits only.
- Only 3 credits from JPNS 390 or JPNS 392 may count toward the 9 credits.
- If offered, JPNS 191, JPNS 291 or UD language courses such as JPNS 301 and/or JPNS 302 may be taken in place of up to 2 of the below electives.

Also permitted in substitution would be 1 course from outside the department if it has a substantial Ease Asia-related element.

Select 9 credits from the following:	9
JPNS 311 Jpns Clasc Lit Engl Trans	
JPNS 312 Jpns Lit Medieval to Mod	
JPNS 371 Japanese Film and Anime	
JPNS 390 Research	
JPNS 391 Special Topics	
JPNS 392 Independent Study	
JPNS 411 Mod Jpns Wrtrs/Thinkers	
JPNS 412 Intro Classical Japanese	
JPNS 431 Post-War Japanese Lit	
JPNS 491 Special Topics	
Total Hours	9

Minimum Required Grade: C-

## Latin American Studies Minor

### Minor - Latin American Studies (Minor)

### College Humanities & Sciences

Degree Specific Credits: 30

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

### Summary

Required Lower Division Courses	15
Minor Electives	15
Total Hours	30

### Required Lower Division Courses

**Rule:** Must complete all of the following courses:

MCLG 100H Intro Latin American Studies	3
SPNS 101 Elementary Spanish I	4
SPNS 102 Elementary Spanish II	4
SPNS 201 Intermediate Spanish I	4
Total Hours	15

Minimum Required Grade: C-

## Minor Electives

**Note:** SPNS 494 may count when topic is related to Latin American literature such as Latin American drama, poetry, novel, short story, Argentinian literature, or 19th Century Latin American Literature.

Select 15 credits from the following:	15
ANTY 354H Mesoamerican Prehistory	
ARTH 433H Ancient American Art	
ARTH 434 Latin American Art	
ARTH 494 Sem Art Hist & Crit	
ENST 493 Study Abroad: Environmental Justice Latin America	
HSTR 230H Colonial Latin America	
HSTR 231H Modern Latin America	
HSTR 334 Latin America: Reform & Revolution	
HSTR 335 Latin America: Workers & Labor	
HSTR 435 Lat Am Human Rgts & Memory	
HSTR 437 US-Latin America Relations	
MCLG 358 Lat Amer Civ Thru Lit/Film	
PSCI 325 Politics of Latin America	
PSCI 327 Politics of Mexico	
PSCI 463 Development Administration	
S W 323 Women & Soc Action Amer	
SPNS 331 Contemp Latin Amer Lit	
SPNS 432 Latin American Literature	
SPNS 494 Seminar	
Total Hours	15

Minimum Required Grade: C-

## Latin B.A.

### Bachelor of Arts - Classics; Latin Concentration

### College Humanities & Sciences

Degree Specific Credits: 39

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

### General Education Requirements

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

### Summary

Classics Core Courses	24
Literature and History	
Languages	
Advanced Latin Language	9
Latin Major Electives	6
Total Hours	39



## Classics Core Courses

**Rule:** Must Complete 24 credits from the following subcategories of classes:

### Literature and History

CLAS 160L	Classical Mythology	3
CLAS 251L	The Epic	3
or CLAS 252L	Greek Drama: Politics on Stage	
CLAS 399	Capstone	3
HSTR 304H	Ancient Rome	3
Total Hours		12

Minimum Required Grade: C-

### Languages

Must Complete all courses

LATN 101	Elementary Latin I	3
LATN 102	Elementary Latin II	3
LATN 201	Intermediate Latin I	3
LATN 202	Intermediate Latin II	3
Total Hours		12

Minimum Required Grade: C-

### Advanced Latin Language

Complete an additional 9 credits in advanced Latin	9	
LATN 311	Major Latin Authors	
LATN 391	Special Topics	
LATN 392	Independent Study	
LATN 492	Independent Study	
Total Hours	9	

### Latin Major Electives

Select 6 credits from the following:	6	
ARTH 407	Roman and Early Christian Art	
CLAS 320	Women in Antiquity	
CLAS 360H	Ancient Greek Civ and Culture	
CLAS 365E	The Roots of Western Ethics	
HSTR 301X	Ancient Greek Social History	
HSTR 302H	Ancient Greece	
MCLG 410	Methods Teaching Foreign Language	
PHL 363H	Ancient Greek and Roman Philosophy	
PHL 465	Plato	
PHL 466	Aristotle	
Total Hours	6	

Minimum Required Grade: C-

### Teaching Latin Track

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 concentration and the secondary licensure program, one will be eligible for a standard Montana teaching license in this content area.

**Note:** Students must gain admission to Teacher Education Program. An overall minimum grade point average of 3.0 is required for upper division work. Students must meet the requirements for teaching licensure.

- Secondary Education Licensure Program (<http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php>)
- Licensure Degree Requirements (p. 101)

### Latin Teaching Core

Students completing the Latin Teaching Track are required to complete the following courses:

ARTH 407	Roman and Early Christian Art	3
MCLG 410	Methods Teaching Foreign Language	3
Total Hours		6

## Latin Minor

### Minor - Latin (Minor)

### College Humanities & Sciences

Degree Specific Credits: 21-24

Required Cumulative GPA: 2.5

### Catalog Year: 2017-2018

### Summary

Required Lower Division Courses	12
Required Upper Division Courses	9
Latin Teaching Minor Track (add three credits if you are completing this advising track)	3
Total Hours	24

### Required Lower Division Courses

**Rule:** Must complete all of the following courses:

LATN 101	Elementary Latin I	3
LATN 102	Elementary Latin II	3
LATN 201	Intermediate Latin I	3
LATN 202	Intermediate Latin II	3
Total Hours		12

Minimum Required Grade: C-

### Required Upper Division Courses

Select 9 credits from the following:	9	
LATN 311	Major Latin Authors	
LATN 391	Special Topics	
LATN 392	Independent Study	

LATN 492	Independent Study	
Total Hours		9

Minimum Required Grade: C-

## Teaching Latin Track

A teaching minor is an academic minor which may contain different course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete a teaching major in a content area plus the teacher preparation program through the Department of Teaching and Learning. Additional teaching areas can be added through completion of either a teaching major or a teaching minor in that content area.

- Secondary Education Licensure Program (<http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php>)
- Licensure Degree Requirements (p. 101)

The term 'minor' for this teaching option refers to courses that need to be completed. To sign up for this option, you need to contact the Teaching and Learning Department. Do not fill out a minor form for graduation or the minor section of the major change form. Approvals for this option must come from the Teaching and Learning Department.

## Teaching Licensure Requirements

**Note:** Individuals completing a teaching minor must also complete a teaching major in another content area. Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning (p. 95) in the College of Education and Human Sciences for more information. A minor GPA of 2.75 is required to be eligible for student teaching.

## Teaching Methods Course

**Rule:** Complete the following course.

MCLG 410	Methods Teaching Foreign Language	3
Total Hours		3

Minimum Required Grade: C-

# Russian B.A.

## Bachelor of Arts - Russian

## College Humanities & Sciences

Degree Specific Credits: 48

Required Cumulative GPA: 2.5

## Catalog Year: 2017-2018

**Note:** Students are required to maintain a minimum overall GPA of 2.5 in all upper-division courses presented in fulfillment of requirements for the Russian major. Must complete a minimum of 27 upper division credits in Russian courses and electives.

## 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

Lower Division Core Courses	19
Language	
Culture	
Upper Division Core Courses	27
Expression	
Translation	
Language	
History	
Total Hours	46

## Lower Division Core Courses

**Rule:** Complete the following subcategories of courses

21 Total Credits Required

### Language

**Rule:** Must complete all of the following courses:

RUSS 101	Elementary Russian I	4
RUSS 102	Elementary Russian II	4
RUSS 201	Intermediate Russian I	4
RUSS 202	Intermediate Russian II	4
Total Hours		16

Minimum Required Grade: C-

### Culture

**Rule:** Must complete the following course

RUSS 105H	Intro to Russian Culture	3
Total Hours		3

Minimum Required Grade: C-

## Upper Division Core Courses

**Rule:** Must complete the following subcategories

**Note:** Student must complete at least 27 credits of upper-division work in Russian courses and electives, 15 credits of which must be in the target language.

27 Total Credits Required

### Translation

**Note:** RUSS 494 must be taken for 3 credits and will fulfill the upper division writing requirement.

Select two of the following:	6
FILM 308	Russian Cinema and Culture
RUSS 306L	Evil and the Supernatural in Russian Literature

RUSS 307L	Beauty, Power and Pride in Russian Literature	
Total Hours		6

Minimum Required Grade: C-

### Language

Select three of the following: 9

RUSS 411	19th-Century Russian Authors	
RUSS 412	20th-Century Russian Authors	
RUSS 424	Russian Short Story	
RUSS 440	Russian Poetry	
Total Hours		9

Minimum Required Grade: C-

### History

Select one of the following: 3

HSTR 357	Russia to 1881	
HSTR 358	Russia Since 1881	
Total Hours		3

Minimum Required Grade: C-

## Teaching Russian Concentration

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 Department. 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 (p. 101)

To sign up for this concentration, you need to contact the Teaching and Learning Department. Do not fill out a major/minor form for graduation or the major/minor/concentration section of the major change form. Approvals for this option must come from the Teaching and Learning Department.

Concentrations will not appear on your UM transcript, diploma, university lists, student data system, or university publication and are used for advising purposes only. You do not fill out a major change for a track.

### Teaching Licensure Requirements

**Note:** Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning (p. 95) in the College of Education and Human Sciences for more information. A major GPA of 2.75 is required to be eligible for student teaching. This major does not qualify as a single field endorsement. Individuals must complete a second teaching major or minor in another content area.

### Teaching Concentration Course

**Rule:** Must complete the following course

MCLG 410	Methods Teaching Foreign Language	3
Total Hours		3

Minimum Required Grade: C-

## Russian Minor

### College Humanities & Sciences

**Degree Specific Credits:** 28

**Required Cumulative GPA:** 2.5

### Catalog Year: 2017-2018

## Summary

Lower Division Core Requirements	16
Upper Division Credits	12
Total Hours	28

### Lower Division Core Requirements

**Rule:** Must complete all four courses or have equivalent courses

RUSS 101	Elementary Russian I	4
RUSS 102	Elementary Russian II	4
RUSS 201	Intermediate Russian I	4
RUSS 202	Intermediate Russian II	4
Total Hours		16

Minimum Required Grade: C

### Upper Division Credits

**Rule:** Must complete 12 upper division credits in Russian-related courses taught by MCLL faculty or equivalent

Minimum Required Grade: C-

12 Total Credits Required

## Teaching Russian Concentration

A teaching minor is an academic minor which may contain different course requirements designed to meet state standards. Those interested in teaching in K-12 schools must complete a teaching major in a content area plus the teacher preparation program through the Department of Teaching and Learning. Additional teaching areas can be added through completion of either a teaching major or a teaching minor in that content area.

- Secondary Education Licensure Program (<http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php>)
- Licensure Degree Requirements (p. 101)

The term 'minor' for this teaching option refers to courses that need to be completed. To sign up for this option, you need to contact the Teaching and Learning Department. Do not fill out a minor form for graduation or

the minor section of the major change form. Approvals for this option must come from the Teaching and Learning Department.

### Teaching Licensure Requirements

**Note:** Individuals completing a teaching minor must also complete a teaching major in another content area. Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning (p. 95) in the College of Education and Human Sciences for more information. A minor GPA of 2.75 is required to be eligible for student teaching.

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### Teaching Methods Course

**Rule:** Complete the following course.

MCLG 410	Methods Teaching Foreign Language	3
Total Hours		3

Minimum Required Grade: C

## Russian Studies Minor Minor - Russian Studies (Minor)

### College Humanities & Sciences

**Degree Specific Credits:** 30

**Required Cumulative GPA:** 2.5

### Catalog Year: 2017-2018

#### Summary

Lower Division Core Courses	19
Language	
Culture	
Degree Electives	9
History	
Russian Electives	
Total Hours	28

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### Lower Division Core Courses

**Rule:** Must complete the following subcategories

21 Total Credits Required

#### Language

**Rule:** Must complete all of the following courses

RUSS 101	Elementary Russian I	4
RUSS 102	Elementary Russian II	4
RUSS 201	Intermediate Russian I	4
RUSS 202	Intermediate Russian II	4
Total Hours		16

Minimum Required Grade: C-

### Degree Electives

**Rule:** Must complete the following subcategories

9 Total Credits Required

#### History

Select one of the following: 3

HSTR 357	Russia to 1881
HSTR 358	Russia Since 1881

Total Hours	3
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Minimum Required Grade: C-

#### Russian Electives

**Rule:** Must complete 6 credits of upper-division coursework

**Note:** 3 of the 6 credits must be taken in the MCLL department and 3 credits from a third department/discipline.

## Spanish B.A. Bachelor of Arts - Spanish

### College Humanities & Sciences

**Degree Specific Credits:** 49

**Required Cumulative GPA:** 2.5

### Catalog Year: 2017-2018

**Note:** Students are required to maintain a minimum overall GPA of 2.5 in all upper-division courses presented in fulfillment of requirements for the Spanish major.

### General Education Requirements

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

#### Summary

Lower Division Core Courses	16
Upper Division Core Courses	9
Additional Upper Division Spanish Electives	21
Upper Division Writing	3
Total Hours	49

### Lower Division Core Courses

**Rule:** Must complete all of the following courses:

SPNS 101	Elementary Spanish I	4
SPNS 102	Elementary Spanish II	4
SPNS 201	Intermediate Spanish I	4
SPNS 202	Intermediate Spanish II	4
Total Hours		16

Minimum Required Grade: C-