MATHEMATICS, BA

Requirements for Students Matriculating in or before Academic Year 2017-2018. Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.00
Total Hours: 120

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENGL 1113</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 1313</td>
<td>Critical Analysis and Writing I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENGL 1213</td>
<td>Composition II</td>
<td>3</td>
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<tr>
<td>ENGL 1413</td>
<td>Critical Analysis and Writing II</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
<td>3</td>
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</tbody>
</table>

American History & Government

HIST 1103 | Survey of American History | 3 |
POLS 1113 | American Government | 3 |

Analytical & Quantitative Thought (A)

MATH 2144 | Calculus I (A) | 4 |
CS 1113 | Computer Science I (A) | 3 |

Humanities (H)

Courses designated (H) | 6 |

Natural Sciences (N)

Must include one Laboratory Science (L) course

PHYS 1114 | General Physics (LN) | 4 |
| or PHYS 2014 | General Physics (LN) | 4 |

Course designated (N) | 2 |

Social & Behavioral Sciences (S)

Course designated (S) | 3 |

Additional General Education

Courses designated (A), (H), (N), or (S) | 6 |

Hours Subtotal | 40 |

Diversity (D) & International Dimension (I)

May be completed in any part of the degree plan

Select at least one Diversity (D) course

Select at least one International Dimension (I) course

College/Departmental Requirements

First Year Seminar

A&S 1111 | A&S First Year Seminar (transfer students with 15 hours exempt) | 1 |

Arts & Humanities

See note 2.a. | 9 |

Natural & Mathematical Sciences

MATH 2153 | Calculus II (A) | 3 |

Foreign Language

See note 3 | 9 |

Non-Western Studies

At least one course

See note 2.d.

Upper-Division General Education

Select 6 hours outside major department

See note 2.c.

Hours Subtotal | 22 |

Major Requirements

Minimum grade of “C” or “P” required in each course

Major Foundation

MATH 2163 | Calculus III | 3 |
MATH 2233 | Differential Equations | 3 |
MATH 3013 | Linear Algebra | 3 |
MATH 3613 | Introduction to Abstract Algebra | 3 |
Select 3 hours of the following: |
| STAT 4013 | Statistical Methods I (A) | 3 |
| STAT 4033 | Engineering Statistics | 3 |
| STAT 4053 | Statistical Methods I for the Social Sciences (A) | 3 |
Select 3 hours of the following: |
| MATH 3583 | Introduction to Mathematical Modeling | 3 |
| MATH 3933 | Research Methods | 3 |
| MATH 4423 | Geometry and Algorithms in Three-Dimensional Modeling | 3 |

Tracks

Select one track (p. 1) | 24 |

Hours Subtotal | 42 |

Electives

Select 16 hours

May need to include 6 hours upper-division general education outside major department (see note 2.c.) and 4 additional upper division hours

Hours Subtotal | 16 |

Total Hours | 120 |

1 College and Departmental Requirements that may be used to meet Gen Ed Requirements.

Tracks

General Track

Code | Title | Hours |
<table>
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<tr>
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<tbody>
<tr>
<td>MATH 4023</td>
<td>Introduction to Analysis</td>
<td>6</td>
</tr>
<tr>
<td>MATH 4063</td>
<td>Advanced Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4143</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4153</td>
<td>Advanced Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4343</td>
<td>Introduction to Topology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4403</td>
<td>Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4613</td>
<td>Modern Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4623</td>
<td>Modern Algebra II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4713</td>
<td>Number Theory</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4753</td>
<td>Introduction to Cryptography</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4813</td>
<td>Groups and Representations</td>
<td>3</td>
</tr>
</tbody>
</table>
Select 9 hours of MATH courses numbered 4000 or above | 9 |
Select 3 hours of 4000-level courses in MATH or STAT or upper-
division CS or PHYS.
Select 6 hours of upper division courses in any field.

## Preparation for Graduate Study Track

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<tr>
<td>MATH 4063</td>
<td>Advanced Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4283</td>
<td>Complex Variables</td>
<td>3</td>
</tr>
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Select 9 hours of the following, with at least 3 hours from each group:

**Algebra and Discrete Math**
- MATH 4613 Modern Algebra I
- MATH 4623 Modern Algebra II
- MATH 4663 Combinatorics
- MATH 4713 Number Theory
- MATH 4753 Introduction to Cryptography
- MATH 4813 Groups and Representations

**Analysis**
- MATH 4013 Calculus of Several Variables
- MATH 4143 Advanced Calculus I
- MATH 4153 Advanced Calculus II

Select 3 hours from one of the following groups:

**Geometry or Topology**
- MATH 4343 Introduction to Topology
- MATH 4403 Geometry
- MATH 5413 Differential Geometry

**Applied Math**
- MATH 4233 Intermediate Differential Equations
- MATH 4263 Introduction to Partial Differential Equations
- MATH 4513 Numerical Analysis

Select 3 hours of 4000-level courses in MATH or STAT.

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### Other Requirements

- See the College of Arts and Sciences Requirements.
- **Upper-Division Credit**: Total hours must include at least 40 hours in courses numbered 3000 or above.
- **Hours in One Department**: Hours in one department in excess of 54 will be added to the minimum total of 120 required for graduation.

### College of Arts and Sciences Requirements

1. **General Education Requirements**
   - No more than two courses (or eight hours) from the major department may be used to meet General Education and College and Departmental Requirements. The General Education required English Composition, required U.S. History, required American Government, one required MATH or STAT course, and required foreign language for B.A. degrees do not count against the two-course maximum.

2. **A&S College/Departmental Requirements**
   - **Arts and Humanities** are defined as any course carrying an (H) designation or courses from AMST, ART, DANC, ENGL (except ENGL 3323 Technical Writing) HIST, MUSI, PHIL (except PHIL 1313 Logic and Critical Thinking (A), PHIL 3003 Symbolic Logic (A) and PHIL 4003 Mathematical Logic and Computability), REL, TH, and foreign languages.
   - **Natural and Mathematical Sciences** are defined as any course from the following prefixes: ASTR, BIOL, BOT, CHEM, CS (except CS 4883 Social Issues in Computing), GEOL, MATH, MICR, PHYS, and STAT; or courses from other departments that carry an (A) or (N) general education designation.
   - The required six hours of upper-division General Education may not include courses from the student’s major department. This requirement may be satisfied by courses also used to satisfy any part of a student’s degree program (i.e., in General Education, College Departmental Requirements, Major Requirements of Electives).
   - **Non-Western Studies Requirement for B.A. and B.F.A.**; One 3-hour course in Non-Western Studies from:

### Example Courses

- AMIS 2013 Introduction to American Indian Studies (D)
- AMIS 4013 American Indian Sovereignty (D)
- ANTH 3443 Peoples of Mesoamerica (IS)
- ANTH 4223 The Aztec Empire (H)
- ART 3693 Survey of Asian Art (H)
- ART 3733 History of Latin American Art I
- ART 4603 History of Ancient Egyptian Art
- ART 4653 History of Indian Art
- ART 4663 History of Chinese Art (H)
- ART 4673 History of Japanese Art
- ART 4683 Modern and Contemporary Art in Asia
- ART 4703 Art East and West: Biases and Borrowings
- ART 4713 The Visual Culture of the Islamic World (HI)
- ART 4763 Native American Art and Material Culture
- CHIN 1813 Elementary Chinese II
- ENGL 2963 Survey of Nonwestern Traditions (HI)
- ENGL 3190 Readings in Postcolonial and Multiethnic Literature (African Novel)
- ENGL 4330 Studies in Native American Literature
- FLL 1000 Special Studies in Foreign Languages and Literatures (Arabic 2 & Mvskoke2)
- GEOG 3053 Introduction to Central Asian Studies (IS)
- GEOG 3733 Russia and Its Neighbors (IS)
- GEOG 3753 Asia (IS)
- GEOG 3763 Africa (IS)
- GEOG 3783 The Middle East (IS)
- HIST 1713 Survey of Eastern Civilization (H)
- HIST 3013 Ancient Egypt and Israel (H)
- HIST 3043 Ancient Mesopotamia: Iraq, Iran & Syria from 4000-333 B.C. (H)
- HIST 3053 Introduction to Central Asian Studies (IS)
3. Foreign Language Proficiency

a. The foreign language requirement for the B.A. may be satisfied by 9 hours college credit in the same language, which must include 3 hours at the 2000-level, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement. Currently Arabic and Mvskoke are not offered at the 2000-level at OSU.

b. The foreign language requirement for the B.S., B.M. and B.F.A. may be satisfied by presenting a high school transcript which demonstrates two years of study of a single foreign language (passing grades at second year level of study). It may also be satisfied by 6 hours college credit, which must include language courses 1713 and 1813, or equivalent proficiency (e.g., passing an advanced standing examination; completing a 2000-level course or higher in the language; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement. Currently Arabic and Mvskoke are not offered at the 2000-level at OSU.

c. In addition to a. and b., students pursuing teacher certification must meet novice-high foreign language proficiency by presenting a high school transcript which demonstrates two years of study of a single foreign language with no grade below B. Or, students may complete 3 hours college credit in a single language with no grade below C (or pass an advanced standing examination, College Level Examination Program (CLEP) exam, or Oral Proficiency Interview developed by the American Council on the Teaching of Foreign Languages, equivalent to 3 hours college credit.) Or, students may meet the requirement by transfer of documentation of meeting the foreign language competency from one of the teacher education programs in the State of Oklahoma approved by the Oklahoma State Regents for Higher Education.

4. Exclusions

a. Courses used to satisfy the General Education English Composition, U.S. History, American Government, and Mathematics or Statistics requirements will not count toward the 54 hour maximum allowed from one department.

b. Courses with ATHL or LEIS prefixes and leisure activity courses may not be used for degree credit.

5. Teacher Certification

Students can satisfy the requirements for secondary schools teaching certification while earning a B.A. or B.S. in the College of Arts & Sciences. Those interested should see their Arts and Sciences adviser and the OSU Professional Education Unit in room 325 Willard.
Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
- Degrees that follow this plan must be completed by the end of Summer 2023.