Mathematics, BA

Requirements for Students Matriculating in or before Academic Year 2018-2019. Learn more about University Academic Regulation 3.1 [here](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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</thead>
<tbody>
<tr>
<td>ENGL 1113</td>
<td>Composition I</td>
<td>3</td>
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<tr>
<td>or ENGL 1313</td>
<td>Critical Analysis and Writing I</td>
<td></td>
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<tr>
<td>Select one of the following:</td>
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<td>3</td>
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<tr>
<td>ENGL 1213</td>
<td>Composition II</td>
<td></td>
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<tr>
<td>ENGL 1413</td>
<td>Critical Analysis and Writing II</td>
<td></td>
</tr>
<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
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</tbody>
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American History & Government
HIST 1103  Survey of American History  3
POLS 1113  American Government  3

Analytical & Quantitative Thought (A)
MATH 2144  Calculus I (A)  1  4
CS 1113  Computer Science I (A)  1  3

Humanities (H)
Courses designated (H)  6

Natural Sciences (N)
Must include one Laboratory Science (L) course
PHYS 1114  College Physics I (LN)  1  4
or PHYS 2014  University Physics I (LN)  1  3

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<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></td>
</tr>
<tr>
<td>MATH 4083</td>
<td>Intermediate Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH 4143</td>
<td>Advanced Calculus I</td>
<td></td>
</tr>
<tr>
<td>MATH 4153</td>
<td>Advanced Calculus II</td>
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<tr>
<td>MATH 4343</td>
<td>Introduction to Cryptography</td>
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<tr>
<td>MATH 4403</td>
<td>Geometry</td>
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<tr>
<td>MATH 4603</td>
<td>Intermediate Abstract Algebra</td>
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</tr>
<tr>
<td>MATH 4613</td>
<td>Abstract Algebra I</td>
<td></td>
</tr>
<tr>
<td>MATH 4623</td>
<td>Abstract Algebra II</td>
<td></td>
</tr>
<tr>
<td>MATH 4713</td>
<td>Number Theory</td>
<td></td>
</tr>
<tr>
<td>MATH 4753</td>
<td>Introduction to Cryptography</td>
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</table>
Preparation for Graduate Study Track

**Code** | **Title** | **Hours**
--- | --- | ---
MATH 4023 | Introduction to Analysis | 3
MATH 4063 | Advanced Linear Algebra | 3
MATH 4283 | Select 3 hours of 4000-level courses in MATH or STAT | 9

Select 9 hours of the following, with at least 3 hours from each group:

- **Algebra and Discrete Math**
  - MATH 4603 Intermediate Algebra I
  - MATH 4613 Abstract Algebra I
  - MATH 4623 Abstract 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 4083 Intermediate Analysis
  - 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 9 hours of the following, with at least 3 hours from each group:

- **Applied Math**
  - MATH 4883 Social Issues in Computing

**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**
   a. 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.
   b. Natural and Mathematical Sciences are defined as any course from the following prefixes: ASTR, BIOC, BIOL, CHEM, CS (except CS 4883 Social Issues in Computing), GEOL, MATH, MICR, PBIO, PHYS, and STAT; or courses from other departments that carry an (A) or (N) general education designation.
   c. 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 or Electives).
   d. Non-Western Studies Requirement for B.A. and B.F.A.; One 3-hour course in Non-Western Studies (N.W.). 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 or Electives).
   e. The College of Arts & Sciences requires a minimum 2.0 GPA in all major requirements and a minimum 2.0 GPA in all major-prefix courses.

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 in the same language, which must include language courses 1713 and 1813, 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.
   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 of college credit.) Or, students may meet the requirement by transfer of documentation of meeting the foreign language competency.
Mathematics, BA

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 2024.