Mathematics, B.S.

Bachelor of Science students majoring in mathematics enroll in one of three programs: Program A is for students who plan to work in business or government or pursue graduate study in mathematics; program B is for students who seek secondary school teaching licensure; and program C is for those seeking specialization in a mathematics-related area, such as actuarial science, biomathematics, business, computer science, economics, physics, statistics, and so forth. Program C may be especially appropriate for students who plan to seek a mathematics-related job after earning a bachelor's degree, rather than going on to graduate study.

Learning Outcomes
Math majors will be able to demonstrate the ability to:

- give correct, logical mathematical proofs using mathematical terminology and hypotheses;
- reason logically and quantitatively using algebraic, analytic, and numerical methods;
- incorporate mathematical ideas and reasoning into well-written English; and
- model and analyze problems in pure mathematics and in other disciplines.

B.S. with Second Major

Students majoring in mathematics may choose to earn a second major in computer science, statistics, actuarial science, or other disciplines. They must satisfy all requirements of program A, program B, or program C in mathematics as well as all requirements for the second major. For more information, consult an advisor and see Declaring or Changing a Major on the College of Liberal Arts and Sciences website.

Transfer from Engineering to Mathematics


Requirements

The Bachelor of Science with a major in mathematics requires a minimum of 120 s.h., including at least 44-56 s.h. (13-14 courses) of work for the major. Total credit for the major depends on a student's choice of program A, B, or C. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core.

All students complete the post-calculus mathematics requirement, the upper-level mathematics requirement, and the requirements for program A, B, or C.

For policies concerning transfer credit, correspondence credit, credit by examination, cumulative grade-point average, general rules relating to regression and duplication, and so forth, see For Undergraduate Students on the College of Liberal Arts and Sciences website. For information about duplication, regression, and use of the second-grade-only option for mathematics courses, contact the Department of Mathematics or visit the Department of Mathematics website.

The department's Handbook for Undergraduate Majors provides details about schedule planning and career options for mathematics students. For more information on admission, financial support, employment opportunities, the faculty, facilities, and other topics, visit the University of Iowa and Department of Mathematics website.

The B.S. with a major in mathematics (program A, B, or C) requires the following coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Program Requirements (semester hours vary in program A, B, or C selection)</td>
<td>44-56</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>44-56</td>
</tr>
</tbody>
</table>

Post-Calculus Mathematics Requirement

Students majoring in mathematics must earn at least 15 s.h. in post-calculus mathematical sciences courses offered by the University of Iowa; students may not count transfer courses or credit by exam toward this requirement. At least 12 s.h. of the required 15 s.h. in post-calculus courses must be earned in Department of Mathematics courses (prefix MATH) or in courses cross-listed with the department.

Post-calculus courses in the Department of Mathematics are numbered 2000 or above, excluding these:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:3700</td>
<td>Introduction to Matrix Theory</td>
<td>3</td>
</tr>
<tr>
<td>MATH:3750</td>
<td>Classical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH:3995</td>
<td>Topics in Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH:3996</td>
<td>Individual Study and Honors in Mathematics</td>
<td>arr.</td>
</tr>
<tr>
<td>MATH:3997</td>
<td>Readings in Mathematics</td>
<td>arr.</td>
</tr>
<tr>
<td>MATH:4010</td>
<td>Basic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH:4020</td>
<td>Basic Abstract Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Post-calculus courses offered by the Department of Computer Science, and the Department of Statistics and Actuarial Science must have a calculus prerequisite.

Upper-Level Mathematics Requirement

Mathematics majors must take at least two upper-level mathematics courses for the B.S. degree. Upper-level mathematics courses include MATH:3900 Introduction to Mathematics Research and courses numbered 4000 or above, excluding these:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:4010</td>
<td>Basic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH:4020</td>
<td>Basic Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH:4120</td>
<td>History of Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>
No courses from other departments can be counted as upper-level mathematics courses, unless they are cross-listed with an upper-level mathematics course (prefix MATH).

**Program A**

Program A is primarily for students who plan to work in business or government or to pursue graduate study in mathematics.

**Program A: Core Courses**

Students must complete a two-semester sequence of calculus I-II. Advanced placement credit, CLEP credit, and credit granted through the Mathematics Incentive Program is accepted for all or part of the calculus requirement.

Students complete the following core courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:1850 &amp;</td>
<td>Calculus I-II</td>
<td>8</td>
</tr>
<tr>
<td>MATH:1860</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:2700</td>
<td>Introduction to Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH:2850</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH:3600</td>
<td>Introduction to Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH:3720</td>
<td>Introduction to Abstract Algebra I</td>
<td>4</td>
</tr>
<tr>
<td>MATH:3770</td>
<td>Fundamental Properties of Spaces and Functions I</td>
<td>4</td>
</tr>
</tbody>
</table>

More advanced courses may be substituted for the core courses, with Department of Mathematics approval.

**Program A: Electives**

Students complete six electives (18-24 s.h.), including at least three upper-level mathematics courses.

**Mathematics**

Students may choose from mathematics courses numbered MATH:2150 Foundations of Geometry, MATH:3800 Elementary Numerical Analysis or courses above MATH:3800, excluding MATH:4010 Basic Analysis and MATH:4020 Basic Abstract Algebra.

**Computer Science**

Students may choose computer science courses numbered CS:1210 through CS:4740, excluding CS:3210 Programming Languages and Tools, CS:3910 Informatics Project, CS:3980 Topics in Computer Science I, and CS:3990 Honors in Computer Science or Informatics.

**Statistics and Actuarial Science**


Among the courses listed above, only one of the following three courses, STAT:2020, STAT:3100, or STAT:3120 can be counted; although none of these courses can be counted if taken after STAT:4100.

Students may choose actuarial science courses numbered ACTS:3080 Mathematics of Finance I and ACTS:4130 through ACTS:4380.

Consult the department’s Handbook for Undergraduate Majors for a complete list of electives in computer science, and statistics and actuarial science.

**Program B**

Program B is intended for students seeking secondary school teaching licensure. Students who wish to earn teaching licensure in addition to earning a Bachelor of Science with a major in mathematics also must complete the Teacher Education Program (TEP); see “Teacher Licensure” below.

**Program B: Core Courses**

Students must complete a two-semester sequence of calculus I-II. Advanced placement credit, CLEP credit, and credit earned through the Mathematics Incentive Program is accepted for part or all of the calculus requirement. Students complete the following core courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:1850 &amp;</td>
<td>Calculus I-II</td>
<td>8</td>
</tr>
<tr>
<td>MATH:1860</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:2150</td>
<td>Foundations of Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH:2700</td>
<td>Introduction to Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH:2850</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH:3720</td>
<td>Introduction to Abstract Algebra I</td>
<td>4</td>
</tr>
<tr>
<td>MATH:3770</td>
<td>Fundamental Properties of Spaces and Functions I</td>
<td>4</td>
</tr>
<tr>
<td>MATH:4050</td>
<td>Introduction to Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>or MATH:4060</td>
<td>Discrete Mathematical Models</td>
<td></td>
</tr>
<tr>
<td>CS:1210</td>
<td>Computer Science I: Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>STAT:3120</td>
<td>Probability and Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>

More advanced courses may be substituted for the core courses, with Department of Mathematics approval.

**Program B: Electives**

Students in Program B must take at least three additional Department of Mathematics post-calculus courses (9-12 s.h.), including two chosen from MATH:3900 Introduction to Mathematics Research and courses numbered 4000 or above, excluding MATH:4010 Basic Analysis and MATH:4020 Basic Abstract Algebra. The post-calculus courses must be chosen avoiding duplication and regression with the core math courses, particularly when engineering mathematics courses are considered. With the department’s approval, capable students are encouraged to substitute more advanced courses in the same subject area for any of the electives. The Handbook for Undergraduate Majors offers advice on course selection.

**Teacher Licensure**

Students interested in teaching in elementary and/or secondary schools should seek admission to the Teacher Education Program (TEP) in the College of Education.

To qualify for licensure in secondary teaching, students in the TEP complete a degree in education as well as a related College of Liberal Arts and Sciences degree. See Teacher Education Program Application and Admission on the College of Education website for details on requirements and
deadlines for applying to the College of Education and about
TEP choices of majors leading to licensure.

Students who wish to earn teacher licensure should choose
program B; see "Program B" above.

**Program C**

Program C enables students to specialize in a mathematicsrelated subtrack, such as the mathematics of making
optimal business decisions, risk management and insurance,
economics, finance, physics, chemistry, biostatistics,
biomathematics, computer science, statistics and actuarial
science, or all departments within the College of Engineering.
In consultation with the faculty advisor, students build on the
Program C core to prepare a subtrack plan of study tailor-
made to their interests and academic or career goals. The
proposed study plan must be approved by the Department of
Mathematics.

Students must file their subtrack plan of study before they
begin their senior year; they use the Program C Plan of Study
form, available at the Department of Mathematics website.
The Handbook for Undergraduate Majors has templates for
choosing electives in several areas; students may use these or
propose other plans.

**Program C: Core Courses**

Students must complete a two-semester sequence of calculus
I-II. Advanced placement credit, CLEP credit, and credit earned
through the Mathematics Incentive Program is accepted for
part or all of the calculus requirement. Students complete the
following core math courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:1850 &amp;</td>
<td>Calculus I-II</td>
<td>8</td>
</tr>
<tr>
<td>MATH:1860</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:2700</td>
<td>Introduction to Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH:2850</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>One additional &quot;proofs&quot; course such as</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH:3720 or MATH:3770</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Some subtracks require additional core courses from other
departments; consult the Handbook for Undergraduate Majors
or the Department of Mathematics website. Additional non-
math core courses count toward electives (see "Program C: Electives" below). Students who specialize in engineering
should consult the Department of Mathematics.

More advanced courses may be substituted for the core
courses, with Department of Mathematics approval.

**Program C: Electives**

Students choose eight or nine approved electives. All electives
must be offered for 3-4 s.h. of credit. At least three of the
electives must be post-calculus mathematics courses (prefix
MATH). All B.S. mathematics majors must take 15 s.h. of
post-calculus mathematics courses and at least two upper-
level mathematics courses; see "Post-Calculus Mathematics Requirement" and "Upper-Level Mathematics Requirement" above.

Some subtracks require additional core courses from other
departments (see "Program C: Core Courses" above); the
additional non-math core courses count toward electives.
For a list of suggested subtracks and restrictions on electives
in each subtrack, consult the Handbook for Undergraduate
Majors or the Department of Mathematics website.

---

**Combined Programs**

**B.S./M.S. in Business Analytics (Career Subprogram)**

Students majoring in mathematics who are interested in
earning a master's degree in business analytics with a career
subprogram may apply to the combined B.S./M.S. program
offered by the College of Liberal Arts and Sciences and the
Tippie College of Business. The program enables students to
begin the study of business analytics before they complete
their bachelor's degree. Students are able to complete both
degrees in five years rather than six.

Separate application to each degree program is required.
Applicants must be admitted to both programs before they
may be admitted to the combined degree program. For
information about the business analytics program, see the M.S. in business analytics (career) in the Tippie College of
Business section of the Catalog.

**B.S./M.S. in Finance**

Students majoring in mathematics who are interested in
earning a master's degree in finance may apply to the
combined B.S./M.S. program offered by the College of Liberal
Arts and Sciences and the Tippie College of Business. The
program enables students to begin the study of finance before
they complete their bachelor's degree. Students are able to
complete both degrees in five years rather than six.

Separate application to each degree program is required.
Applicants must be admitted to both programs before they
may be admitted to the combined degree program. For
information about the finance program, see the M.S. in finance
(Tippie College of Business) section of the Catalog.

**Honors**

**Honors in the Major**

Students majoring in mathematics have the opportunity to
graduate with honors in the major. Departmental honors
students must complete all requirements for the major and
must maintain a g.p.a. of at least 3.40 in the major and
overall. To graduate with honors in the major, they must
complete one of the options below.

Option 1: complete four of the courses below, including a two-
course sequence, with a B average for the four courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:4090</td>
<td>A Rigorous Introduction to Abstract Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH:4210</td>
<td>Foundations of Analysis</td>
<td>4</td>
</tr>
<tr>
<td>MATH:5000 &amp;</td>
<td>Abstract Algebra I-II</td>
<td>8</td>
</tr>
<tr>
<td>MATH:5010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:5200 &amp;</td>
<td>Introduction to Analysis I-II</td>
<td>8</td>
</tr>
<tr>
<td>MATH:5210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:5400 &amp;</td>
<td>General Topology - Introduction to Smooth Manifolds</td>
<td>8</td>
</tr>
<tr>
<td>MATH:5410</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:5600 &amp;</td>
<td>Nonlinear Dynamics with Numerical Methods - Partial Differential Equations with Numerical Methods</td>
<td>8</td>
</tr>
<tr>
<td>MATH:5700</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sample Plans of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Mathematics, B.S.
• Program A [p. 4]
• Program B (p. 5)

Program A

Course | Title | Hours
--- | --- | ---
ENGL:1200 or RHET:1030 | The Interpretation of Literature or Rhetoric | 3 - 4
MATH:1850 | Calculus I | 4
MATH:2700 | Introduction to Linear Algebra | 4
GE CLAS Core: Values and Culture | 3
CSI:1600 | Success at Iowa | 2
Elective course | 2
--- | --- | ---
Hours | 14-15

Spring

ENGL:1200 or RHET:1030 | The Interpretation of Literature or Rhetoric | 3 - 4
MATH:1860 | Calculus II | 4
MATH:2850 | Introduction to Ordinary Differential Equations | 4
GE CLAS Core: Diversity and Inclusion | 3
Elective course | 1
--- | --- | ---
Hours | 15-16

Second Year

Fall

GE CLAS Core: World Languages First Level Proficiency or elective course | 4 - 5
MATH:3600 | Introduction to Ordinary Differential Equations | 3
MATH:3720 | Calculus III | 4
GE CLAS Core: Social Sciences | 3
Elective course | 2
--- | --- | ---
Hours | 16-17

Spring

GE CLAS Core: World Languages Second Level Proficiency or elective course | 4 - 5
Major: required post-calculus math elective course | 3
MATH:3720 | Introduction to Abstract Algebra I | 4
GE CLAS Core: Historical Perspectives | 3
Elective course | 2
--- | --- | ---
Hours | 16-17

Third Year

Fall

GE CLAS Core: World Languages Second Level Proficiency or elective course | 4 - 5
--- | --- | ---

Academic Plans

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. Courses in the major are those required to complete the major; they may be offered by departments other than the major department.

Note: Many mathematics courses must be taken in sequence, so students must begin major requirements as early as possible, and individual plans of study must be constructed carefully. The major typically requires 13 or 14 courses. Students must choose program A, B, or C by the end of the third semester and must remain in their chosen program until they graduate in order to stay on track for the four-year graduation plan.

Before the third semester begins: coursework in the major through second-semester calculus
Before the fifth semester begins: three or four more courses in the major
Before the seventh semester begins: three or four more courses in the major and at least 90 s.h. earned toward the degree
Before the eighth semester begins: two or three more courses in the major
During the eighth semester: enrollment in all remaining coursework in the major, all remaining GE CLAS Core courses, and a sufficient number of semester hours to graduate

University of Iowa Honors Program

In addition to honors in the major, students have opportunities for honors study and activities through membership in the University of Iowa Honors Program. Visit Honors at Iowa to learn about the University’s honors program. Honors in mathematics is awarded by the Department of Mathematics and is separate from the University of Iowa Honors Program. Membership in the UI Honors Program is not required to earn honors in the mathematics major. However, honors in mathematics can be applied toward UI Honors Program requirements.

Any Semester

Program A is primarily for students who plan to work in business or government or to pursue graduate study in mathematics.

First Year

Fall

ENGL:1200 or RHET:1030 | The Interpretation of Literature or Rhetoric | 3 - 4
MATH:1850 | Calculus I | 4
GE CLAS Core: Values and Culture | 3
CSI:1600 | Success at Iowa | 2
Elective course | 2
--- | --- | ---
Hours | 14-15

Spring

ENGL:1200 or RHET:1030 | The Interpretation of Literature or Rhetoric | 3 - 4
MATH:1860 | Calculus II | 4
MATH:2700 | Introduction to Linear Algebra | 4
GE CLAS Core: Diversity and Inclusion | 3
Elective course | 1
--- | --- | ---
Hours | 15-16

Second Year

Fall

GE CLAS Core: World Languages First Level Proficiency or elective course | 4 - 5
MATH:3600 | Introduction to Ordinary Differential Equations | 3
MATH:3720 | Calculus III | 4
GE CLAS Core: Social Sciences | 3
Elective course | 2
--- | --- | ---
Hours | 16-17

Spring

GE CLAS Core: World Languages Second Level Proficiency or elective course | 4 - 5
Major: required post-calculus math elective course | 3
MATH:3720 | Introduction to Abstract Algebra I | 4
GE CLAS Core: Historical Perspectives | 3
Elective course | 2
--- | --- | ---
Hours | 16-17

Third Year

Fall

GE CLAS Core: World Languages Second Level Proficiency or elective course | 4 - 5
MATH:3770 Fundamental Properties of Spaces and Functions I 4
Major: required post-calculus math elective course 3 - 4
GE CLAS Core: Natural Sciences with Lab b 4
Elective course c 1

Hours 16-18

Spring
GE CLAS Core: World Languages Fourth Level 4 - 5
Proficiency or elective course d
Major: required upper-level math elective course f 3
Major: required post-calculus math elective course e 3 - 4
GE CLAS Core: Natural Sciences without Lab b 3
Elective course c 3

Hours 16-18

Fourth Year
Fall
Major: required upper-level math elective course f 3
GE CLAS Core: International and Global Issues b 3
GE CLAS Core: Literary, Visual, and Performing Arts 3
Elective course c 3
Elective course c 3

Hours 15

Spring
Major: required upper-level math elective course f 3
Elective course c 3
Elective course c 3
Elective course c 3
Elective course c 3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) g

Hours 15

Total Hours 123-131

a Enrollment in math courses requires completion of a placement exam.
b GE CLAS Core courses may be completed in any order unless used as a prerequisite for another course. Students should consult with an advisor about the best sequencing of courses.
c Students may use elective courses to earn credit towards the total s.h. required for graduation or to complete a double major, minors, or certificates.
d Students who have completed four years of a single language in high school have satisfied the GE CLAS Core World Languages requirement. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course.
e Students must earn at least 15 s.h. in post-calculus mathematical sciences courses offered by the University of Iowa. Post-calculus courses are numbered 2000 or above, excluding: MATH:3700, MATH:3750, MATH:3995, MATH:3996, MATH:3997, MATH:4010, and MATH:4020. Required mathematical electives must include at least one upper-level math course (prefix MATH). Some statistics, actuarial science and computer sciences courses can be included among post-calculus electives only. See advisor for list of acceptable courses in MATH, STAT, ACTS, and CS.
f Required mathematical electives must include at least three upper-level math courses. These include: MATH:3900 and math courses (MATH prefix) numbered 4000 and higher, but not MATH:4010, MATH:4020 and MATH:4120. Each upper-level math course is offered at most once per year; choose when to complete the upper-level requirement according to spring or fall offerings for desired courses.
g Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor. For more information visit http://commencement.uiowa.edu. If applicable search for "Early and Late Participation" to find this page (e.g. walk in graduation ceremony in May, degree confer in August).

Program B

Course Title Hours

Academic Career

Any Semester
Program B is intended for students seeking secondary school teaching licensure. a

Admission to the Teacher Education Program, College of Education, is by competitive application. For information about application requirements, process, and deadlines, please consult an advisor for the College of Education.

First Year
Fall
ENGL:1200 or RHET:1030 The Interpretation of Literature or Rhetoric 3 - 4
GE CLAS Core: World Languages First Level Proficiency or elective course b
MATH:1850 Calculus I c 4
CSI:1600 Success at Iowa 2
Elective course d 2

Hours 15-17

Spring
RHET:1030 or ENGL:1200 Rhetoric or The Interpretation of Literature 3 - 4
MATH:1860 Calculus II d 4
GE CLAS Core: World Languages Second Level Proficiency or elective course b
PSQF:1075 Educational Psychology and Measurement e
GE CLAS Core: Diversity and Inclusion f 3
10-hour pre-admission school field experience g, h

Hours 17-19

Summer
Exam: PRAXIS core exam for Teacher Education Program g
Prepare materials for Teacher Education Program application (e.g. essays, letters of recommendation) i

Hours 0

Second Year
Fall
GE CLAS Core: World Languages Second Level Proficiency or elective course b
MATH:2700 Introduction to Linear Algebra l 4
MATH:2850 Calculus III 4
EPLS:3000 Foundations of Education e 3
Elective course d 1
Admission Application: apply to the Teacher Education Program l

Hours 16-17
Spring
MATH:2150 Foundations of Geometry 3
EDTL:3091 Secondary Education Program 3
Orientation and Classroom Management 1
EDTL:3095 Teaching Reading in Secondary Content Areas 1
EDTL:3002 Technology in the Classroom 2
GE CLAS Core: World Languages Fourth Level 4 - 5
Proficiency or elective course
GE CLAS Core: Social Sciences 3

Third Year
Fall
MATH:3720 Introduction to Abstract Algebra 4
MATH:4050 Introduction to Discrete Mathematics 3
EDTL:3532 Introduction and Practicum: Mathematics 3
EDTL:4900 Foundations of Special Education 3
GE CLAS Core: Historical Perspectives 3

Spring
MATH:3770 Fundamental Properties of Spaces and Functions 4
STAT:3120 Probability and Statistics 4
EDTL:3534 Methods: Middle School Mathematics 3
EPLS:4180 Human Relations for the Classroom Teacher 3
Elective course 1

Fourth Year
Fall
GE CLAS Core: Literary, Visual, and Performing Arts 3
GE CLAS Core: Natural Sciences with Lab 4
Major: required post-calculus math elective course 3 - 4
EDTL:4535 Methods: High School Mathematics 3
Major: required upper-level math elective course 3 - 4
Apply for student teaching (see the College of Education website for application instructions and deadlines)

Spring
CS:1210 Computer Science I: Fundamentals 4
GE CLAS Core: Natural Sciences without Lab 3
GE CLAS Core: International and Global Issues 3
Major: required upper-level math elective course 3 - 4
Elective course 2

Fifth Year
Fall
EDTL:4087 Seminar: Curriculum and Student Teaching 3
EDTL:4091 Observation and Laboratory Practice in the Secondary School 6

EDTL:4092 Observation and Laboratory Practice in the Secondary School 6

Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)

Exam: edTPA

Total Hours 141-150

a Completion of the Mathematics (Program B) BS major requirements (39 s.h.), the Teacher Education Program requirements (39 s.h.), and all general education requirements (including World Languages) (48-52 s.h.) exceeds the minimum 120 s.h. expected for a bachelor's degree in CLAS. Students pursuing this program of study should expect to take higher than average number (15 s.h.) of semester hours per term, take summer classes, and/or extend graduation time frame beyond four years.
b Students who have completed four years of a single language in high school have satisfied the GE CLAS Core World Languages requirement. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course.
c Enrollment in math courses requires completion of a placement exam.
d Students may use elective courses to earn credit towards the total s.h. required for graduation or to complete a double major, minors, or certificates.
e Course required for the Teacher Education Program and may be completed prior to admission to the College of Education.
f GE CLAS Core courses may be completed in any order unless used as a prerequisite for another course. Students should consult with an advisor about the best sequencing of courses.
g Required for admission into the Teacher Education Program.
h Complete the College of Education verification of 10 hour field experience form available on the Office of Educational Services web page.
i Please see the College of Education website for detailed application instructions and deadlines. Admission is selective and a priority deadline exists.
j Course may also be offered in the summer session.
k Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.
l Course must be completed during the first semester of enrollment in the Teacher Education Program.
m Course required for the Teacher Education Program and may only be completed after admission to the College of Education.
n Students must complete MATH:4050, a fall-only course, or MATH:4060, a spring-only course.
o Post-calculus courses are numbered 2000 or above. excluding: MATH:3700, MATH:3750, MATH:3995, MATH:3996, MATH:3997, MATH:4010, and MATH:4020.
p Upper-level electives include MATH:3900 or any MATH prefix courses numbered 4040 or higher.
q Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor. For more information visit http://commencement.uiowa.edu/
r As a requirement for completion of an approved Teacher Education Program for initial teaching licensure, the state of Iowa requires a passing score on this exam. The test is required before recommendation for licensure or certification to any state.

Career Advancement

The Pomerantz Career Center offers multiple resources to help students find internships and jobs.