

Science Education, BA

Requirements

The Bachelor of Arts with major in science education requires a minimum of 120 s.h., including the general education requirements for the degree, a minimum of 45 s.h. in science education professional education courses, completion of an approved College of Liberal Arts and Sciences science degree, and science education content courses. They must also complete the GE CLAS Core. General education requirements to earn a bachelor of arts degree from the College of Education are the GE CLAS Core of the College of Liberal Arts and Sciences (CLAS). The major requires admission to the Teacher Education Program (TEP), and students must maintain TEP academic and professional standards. Application information can be obtained through the Office of Student Services.

Students must earn one of these majors at the University of Iowa, with a minimum of 36 s.h., in order to earn the BA in science education: a BA in biology, a BS in biology, a BA in chemistry, a BS in chemistry, a BA in earth and environmental sciences, a BS in earth and environmental sciences, a BA in geographical and sustainability sciences, a BS in geographical and sustainability sciences, a BA in physics, a BS in physics, or a BS in science studies; both degrees may be earned at the same time. Graduates who have earned a comparable degree at another institution and wish to earn the BA in science education should consult the Department of Teaching and Learning; additional coursework may be required.

For initial licensure, student teaching must be an all-day, full-semester experience. Most students are placed in a district within a 60-mile radius of Iowa City. Placements outside this area require special approval and are considered on an individual basis. Special site programs provide experience in districts with diverse populations and students also may apply to student teach at international sites for the second half of the semester.

Additional information about options for student teaching and application procedures is available from the Office of Student Services. Applications for student teaching must be submitted during the calendar year before the student teaching semester. The deadline for students planning to student teach the following fall semester is Nov. 15 and April 15 for the following spring semester.

Programs designed to lead to professional licensure are subject to federal regulations regarding informational disclosures. Please see Professional Licensure Disclosures by Program for further information.

The BA with a major in science education requires the following coursework.

Professional Education Course Requirements

Students complete 45 s.h. from the following.

Foundation Courses

Foundation courses may be completed before or after admission to the major.

Course #	Title	Hours
All of these:		
EDTL:4900	Foundations of Special Education	3
EPLS:3000	Foundations of Education	3
PSQF:1075	Educational Psychology and Measurement	3

Additional Licensure Courses

Course #	Title	Hours
All of these:		
EDTL:3002	Teaching and Learning Technologies	2
EDTL:3091	Secondary Education Program Orientation and Classroom Management	3
EDTL:3095	Teaching Reading in Secondary Content Areas	1
EPLS:4180	Human Relations for the Classroom Teacher	3
And all of these taken in this order:		
EDTL:4750	Assessment in Science, Technology, Engineering, and Mathematics (STEM)	2
EDTL:4751	Learning in the Science, Technology, Engineering, and Mathematics (STEM) Classroom	2
EDTL:4752	Secondary Science Methods II With Field Experience	3
EDTL:4753	Secondary Science Methods III With Field Experience	3
EDTL:4779	Secondary School Science Practicum	2

Student Teaching

Transfer students should consult their advisor since they must complete certain courses before they student teach.

Course #	Title	Hours
All of these:		
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

Mathematics Course

State standards for teacher preparation require a college-level math course as part of the liberal arts core. Students can meet this requirement by selecting a course in mathematics, statistics, or computer science for the Quantitative or Formal Reasoning requirement of the GE CLAS Core. Contact College of Education Academic Advising with questions.

Course #	Title	Hours
One of these:		
CS:1110	Introduction to Computer Science	3

CS:1210	Computer Science I: Fundamentals	4
STAT:1010	Statistics and Society	3
STAT:1020	Elementary Statistics and Inference	3
STAT:1030	Statistics for Business	4
Any mathematics course (prefix MATH), except MATH:0100, MATH:1005, or MATH:1210		

Science Education Content Courses

Students complete the science courses of their major field of study, the broad field science block, and additional science courses as needed to meet the requirements of the subject areas the students are preparing to teach.

Broad Field Science Block

Students complete 12 s.h. from the following.

Course #	Title	Hours
This course:		
SIED:4135	The Nature of Science	4
At least two of these:		
SIED:4102	Societal and Educational Applications of Earth Science and Environmental	4
SIED:4103	Societal and Educational Applications of Biological Sciences	4
SIED:4105	Societal and Educational Applications of Physical Sciences	4
SIED:4106	Societal and Educational Applications of Chemical Concepts	4
SIED:4110	Exploring the Geology, Mining History, and Environmental Issues of the Colorado Rockies	4

Endorsements

The science education TEP is approved by the state of Iowa as preparation for teaching licensure with one or more of the following endorsements: grades 5-12 biological sciences; grades 5-12 chemistry; grades 5-12 earth science; grades 5-12 physics; and grades 5-12 all science.

Added endorsement programs for additional teaching areas are available, including grades 5-12 basic science and subject areas other than science.

Teacher Education Program Academic and Professional Standards

State of Iowa teacher preparation standards require that teacher candidates demonstrate the content, pedagogical, and professional knowledge, skills, and dispositions necessary to help all students learn. Because of this, the College of Education and the Teacher Education Program have established academic and professional standards that students must maintain. For undergraduate teacher

candidates and Bachelor of Arts candidates in science education, these standards include:

- University of Iowa cumulative GPA and overall cumulative GPA, based on total hours earned
 - 0-29 overall earned semester hours: minimum of 1.85 (2.70 for good standing)
 - 30 or more overall earned semester hours: minimum of 2.00 (2.70 for good standing)
 - Non-degree students: minimum of 2.00 (2.70 for good standing)
- TEP major GPA (overall cumulative): minimum of 2.00 (2.70 for good standing)
- University of Iowa term GPA: minimum of 1.50 during fall or spring enrollment
- A grade of C-minus or higher in TEP major courses
- No notices of concern in professional dispositional qualities
- Academic good standing in College of Liberal Arts and Sciences
- Major GPA in the TEP CLAS content major: minimum of 2.00
- UI major GPA in the TEP CLAS content major: minimum of 2.00

For additional information about these standards, contact the Office of Student Services.

Liberal Arts Core

State of Iowa teacher preparation standards require a core of liberal arts knowledge including but not limited to English composition, mathematics, natural sciences, social sciences, and humanities. Students who have not completed these requirements with their previous coursework will need additional coursework. Bachelor's degree graduates of the College of Education or the College of Liberal Arts and Sciences have met these requirements with the GE CLAS Core if a course in mathematics, statistics, or computer science was selected for the Quantitative and Formal Reasoning requirement. For additional information about these standards, contact the Office of Student Services.

Academic Plans

Sample Plan 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.

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Course	Title	Hours
Academic Career		
Any Semester		
Admission to the Teacher Education Program, College of Education, is by competitive application. For information about application requirements, process, and deadlines, please see the College of Education's website.		
For specific information regarding requirements in the College of Education, please see the General Catalog.		
Students must earn another major at the University of Iowa in order to earn the BA in science education. Both degrees may be earned at the same time. ^a		

Graduates who have earned one of these degrees at another institution and wish to earn the BA in science education should consult the Department of Teaching and Learning; additional coursework may be required.^a

GE CLAS Core: Sustainability ^b	Hours	0
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First Year

Fall

ENGL:1200 or RHET:1030	The Interpretation of Literature or Rhetoric: Writing and Communication	3 - 4
GE CLAS Core: World Languages First Level Proficiency ^c		4 - 5
CSI:1600	Success at Iowa	1
Course(s) required for second degree, including a course that applies to the GE CLAS Core Natural Sciences area - consult sample plan for chosen program ^a		4
Hours		12-14

Spring

PSQF:1075	Educational Psychology and Measurement	3
RHET:1030 or ENGL:1200	Rhetoric: Writing and Communication or The Interpretation of Literature	3 - 4
GE CLAS Core: World Languages Second Level Proficiency ^c		4 - 5
Course(s) required for second degree, including a course that applies to the GE CLAS Core Natural Sciences area - consult sample plan for chosen program ^a		3 - 8
Hours		13-20

Second Year

Any Semester

10-hour pre-admission school field experience ^d	Hours	0
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Fall

EPLS:3000	Foundations of Education	3
Major: societal and educational applications course ^e		4
GE CLAS Core: World Languages Third Level Proficiency ^c		4 - 5
Course(s) required for second degree - consult sample plan for chosen program ^a		7 - 9

Prepare materials for Teacher Education Program application (e.g. essays, letters of recommendation)

Hours		18-21
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Spring

EDTL:4900	Foundations of Special Education	3
GE CLAS Core: Quantitative or Formal Reasoning ^{g, h}		3
GE CLAS Core: World Languages Fourth Level Proficiency ^c		4 - 5
Course(s) required for second degree - consult sample plan for chosen program ^a		7 - 9

Admission Application: apply to the Teacher Education Program^f

Hours		17-20
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Third Year

Fall

EDTL:3002	Teaching and Learning Technologies	2
EDTL:3091	Secondary Education Program Orientation and Classroom Management	3
EDTL:3095	Teaching Reading in Secondary Content Areas	1
EDTL:4750	Assessment in Science, Technology, Engineering, and Mathematics (STEM) ⁱ	2
EDTL:4751	Learning in the Science, Technology, Engineering, and Mathematics (STEM) Classroom ⁱ	2
Major: societal and educational applications course ^e		4
GE CLAS Core: Social Sciences ^h		3
Course(s) required for second degree - consult sample plan for chosen program ^a		6 - 7
Hours		23-24

Spring

EDTL:4752	Secondary Science Methods II With Field Experience ^j	3
EPLS:4180	Human Relations for the Classroom Teacher	3
GE CLAS Core: Historical Perspectives ^h		3
GE CLAS Core: Literary, Visual, and Performing Arts ^h		3
Course(s) required for second degree - consult sample plan for chosen program ^a		6 - 10
Apply for student teaching (see the College of Education website for application instructions and deadlines)		
Hours		18-22

Fourth Year

Fall

EDTL:4753	Secondary Science Methods III With Field Experience ⁱ	3
EDTL:4779	Secondary School Science Practicum ⁱ	2
SIED:4135	The Nature of Science	4
GE CLAS Core: International and Global Issues ^h		3
Course(s) required for second degree - consult sample plan for chosen program ^a		6 - 7
Hours		18-19

Spring

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

Hours		15
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Total Hours		134-155
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^a Approved majors for the second degree include a BA in biology, a BS in biology, a BA in chemistry, a BS in chemistry, a BA in earth and environmental sciences, a BS

- in earth and environmental sciences, a BA in geographical and sustainability sciences, a BS in geographical and sustainability sciences, a BA in physics, a BS in physics, or a BS in science studies.
- b Sustainability must be completed by choosing a course that has been approved for Sustainability AND for one of these General Education areas: Natural Sciences; Quantitative or Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Society.
 - c Students who have completed four levels of a single language or two levels of two different languages in high school or college have satisfied the GE CLAS Core World Languages requirement. Students who have completed three levels of a single language may complete a fourth-level course in the same language or may choose an approved World Language and Cultural Exploration course. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course. Contact your academic advisor or CLAS Undergraduate Programs Office with questions concerning the World Languages requirement.
 - d Complete the College of Education 10-hour pre-admission school field experience verification form available on the Teacher Education Program web page.
 - e Students must complete two of SIED:4102, SIED:4103, SIED:4105, SIED:4106, or SIED:4110.
 - f Please see the College of Education website for detailed application instructions and deadlines. Admission is selective and a priority deadline exists.
 - g Choose a course that will satisfy the Teacher Education Program math requirement.
 - h 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.
 - i Typically this course is offered in fall semesters only. Check MyUI for course availability since offerings are subject to change.
 - j Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.
 - k Please see Academic Calendar, on 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 or Degree Services.