

Biology - Teaching B.A.

Biology - Teaching Major

The B.A. Biology - Teaching major requires a minimum of 120 total hours to graduate. This total includes UNIFI/General Education requirements, the Professional Experiences requirements, Educator Essentials requirements, and the following specified major requirements, to complete the minimum of 120 hours.

The Biology Teaching major provides a broad education in biology. Along with Educator Essentials courses and student teaching, this curriculum is a sound preparation for teaching life science, biology, and other secondary science courses. This program is an excellent preparation for graduate work in biology or science education.

This major leads to endorsement #151 5-12 Biological Science.

Required:

Introductory track:		15
BIOL 2051	General Biology: Organismal Diversity *	
BIOL 2052	General Biology: Cell Structure and Function *	
BIOL 3100	Evolution, Ecology and the Nature of Science	
BIOL 3140	Genetics	
Evolutionary Biology:		3
BIOL 4142/5142	Evolutionary Biology	
Plant group:		4
Select one of the following:		
BIOL 3109/5109	Plants of North America	
BIOL 3120	Plant Diversity and Evolution	
BIOL 4172/5172	Developmental Plant Anatomy	
Animal group:		3-4
Select one of the following:		
BIOL 3101	Human Anatomy and Physiology I	
BIOL 3106	Vertebrate Anatomy	
BIOL 3160	Field Zoology of Vertebrates	
BIOL 3170	Entomology	
BIOL 4128/5128	Cell Biology ^^	
BIOL 4164/5164	Mammalogy	
Ecology Group:		3-4
Select one of the following:		
BIOL 4105/5105	Wildlife Ecology and Management	
BIOL 4167/5167	Conservation Biology	
BIOL 4168/5168	Ecology	
Cognate courses:		12
CHEM 1110	General Chemistry I * ^	
CHEM 1120	General Chemistry II ^	
EARTHSCI 1320	Earth History ^^	
Biology elective		4

Choose 4 credits of BIOL course(s) 3000-level or above, not duplicated in other coursework

Total Hours **44-46**

* Satisfies UNIFI Scientific Reasoning or a Connect Elective course.

^ Students with excellent preparation in chemistry may substitute CHEM 1130 General Chemistry I-II for CHEM 1110 General Chemistry I and CHEM 1120 General Chemistry II.

^^EARTHSCI 1320 has a prerequisite of EARTHSCI 1300. This prerequisite is waived for Biology Teaching majors.

BIOL 4128/5128 has a prerequisite of BIOL 3100; BIOL 3140; CHEM 2040 or CHEM 2210; and junior standing.

Professional Experiences

Required:

EDUC 2385	Teaching Methods I: Secondary Science *, **	3
EDUC 2485	Teaching Internship I: Secondary Science	3
EDUC 3585/5585	Teaching Methods II: Secondary Science *	3
EDUC 3685/5685	Teaching Internship II: Secondary Science	3
EDUC 4138	Secondary School Teaching	12
Total Hours		24

* A grade of C (2.00) or higher is required for all Methods courses.

**Biology Teaching majors can count EDUC 2385 Teaching Methods I: Secondary Science for category 5 of Educator Essentials.

Educator Essentials

Required: *

Select one of the following in each category:

Category 1: The Learner		3
EDPSYCH 1500	Reflections on Learning	
EDPSYCH 2068	Development and Learning in Sociocultural Contexts	
EDPSYCH 2100	Creativity and Higher Order Thinking in the Classroom	
SOCFOUND 2243	Rethinking the Learning Society: Education and Its Future(s)	
Category 2: Social Contexts of Learning		3
SOCFOUND 2119	Social & Cultural Foundations of Education	
SOCFOUND 2134	A Modern History of Education in the United States	
SOCFOUND 2334	Education Policy and Politics of Education	
TESOL 2015	Language Today	
Category 3: Education for All		3

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KINES 4152	Adapted Physical Education	
SOCFOUND 3334	Education, Power, and Change	
SOCFOUND 3434	Social Movements and Education	
SPIE 3140	Interdisciplinary and Intersectional Study of Education for All	
SPIE 3150	Meeting the Needs of Diverse Learners in Classrooms	
TESOL 3710	Content Area Strategies for English Language Learners	
Category 4: The Classroom Environment		3
EDPSYCH 3200	Deeper Motivation and the Highly Engaged Classroom	
EDPSYCH 3300	Level Up: Gamified Learning Environments	
ECIE 4151	Early Childhood Curriculum Development and Organization	
RTNL 3360	Playful Learning and Project-Based Experiences: Techniques for Ed and Recreational Environments	
SOCFOUND 3219	Critical Perspectives on Technology and Education	
Category 5: Effective Pedagogy		3
ARTED 4600	Expressive Learning Assessment	
LRNTECH 3600	Technology, Pedagogy, and Learning in the Digital Age	
MEASRES 3510	Assessment for Learning	
TEACHING 3500	Effective Teaching through Differentiation, Technology and Assessment	
Category 6: The Professional Educator		3
ECIE 3149	Child, Family, School and Community Relationships	
SOCFOUND 3519	Teacher Leadership & Educational Change	
TEACHING 3177	Collaborative Partnerships for Educators	
Total Hours		18

* A grade of C (2.00) or higher is required in each Educator Essentials course.

Four-Year Plan

Biology Teaching, B.A.

This is a sample plan of study with a suggested sequencing of classes for the major. University electives may be applied to earn additional academic majors, minors, or certificates. Students should regularly meet with their academic advisor to plan their specific semester schedule to include UNIFI/General Education program and/or university elective hours required.

Course	Title	Hour
Freshman		
Fall		
BIOL 2051	General Biology: Organismal Diversity (or BIOL 2052 General Biology: Cell Structure and Function)	4
CHEM 1110	General Chemistry I	4
UNIFI/General Education or University Electives		7
Hours		15
Spring		
BIOL 2052	General Biology: Cell Structure and Function (or BIOL 2051 General Biology: Organismal Diversity)	4
CHEM 1120	General Chemistry II	4
Educator Essentials Course		3
UNIFI/General Education or University Electives		4
Hours		15
Sophomore		
Fall		
BIOL 3100	Evolution, Ecology and the Nature of Science (or BIOL 3140 Genetics)	3
Educator Essentials Course		3
UNIFI/General Education or University Electives		9
Hours		15
Spring		
BIOL 3140	Genetics (or BIOL 3100 Evolution, Ecology and the Nature of Science)	4
EDUC 2385	Teaching Methods I: Secondary Science	3
EDUC 2485	Teaching Internship I: Secondary Science	3
Educator Essentials Course		3
UNIFI/General Education or University Electives		3
Hours		16
Junior		
Fall		
Biology Group choice		4
Biology Electives		4
Educator Essentials Course		3
UNIFI/General Education or University Electives		6
Hours		17
Spring		
Biology Group choice		4
BIOL 4142/5142	Evolutionary Biology	3
Educator Essentials Course		3
UNIFI/General Education or University Electives		6
Hours		16
Senior		
Fall		
EARTHSCI 1320	Earth History	4
EDUC 3585/5585	Teaching Methods II: Secondary Science	3
EDUC 3685/5685	Teaching Internship II: Secondary Science	3
Biology Group choice		4
Hours		14

Spring		
EDUC 4138	Secondary School Teaching	12
Hours		12
Total Hours		120

* To graduate from UNI with a biology major, students must have both a cumulative and a major UNI GPA of 2.50 or higher, with a grade of C- (1.67) or higher in all courses that are applied to the major.

**Students must take at least seven (7) hours of 4000-level biology coursework pertinent to their major, with four (4) of those hours being taken at UNI.

Learning Outcomes

Biology Teaching, B.A.

Goals: Students will gain an understanding of major themes in biology (organization of life, diversity and its causes, genetics, and cellular biology) along with deeper exposure to and advanced competency in biological topics of the student's interest in areas including anatomy, physiology, genetics, organismal development, ecology, evolution, and/or organismal biology. Students will be able to think critically and communicate effectively on these discipline-specific topics in ways that allow them to become excellent educators.

Outcomes:

- Students will show proficiency in advanced content from their areas of interest in the fields of anatomy, physiology, development, cellular biology, immunology, genetics, ecology, evolution, and/or evolutionary biology.
- Students will communicate effectively using appropriate teaching strategies for a classroom setting.
- Students will think critically about discipline-specific content as evidenced by an ability to interpret data, to effectively critique arguments, and/or to solve problems relating to living organisms.

Policies

Majors

1. Students should indicate their interest in majoring in biology by filling out a Declaration of Curriculum form any time after their admission to UNI.
2. A student's freshman year shall be devoted primarily to completing the required course work in general biology (BIOL 2051 General Biology: Organismal Diversity and BIOL 2052 General Biology: Cell Structure and Function) and chemistry (CHEM 1110 General Chemistry I and CHEM 1120 General Chemistry II, or CHEM 1130 General Chemistry I-II). UNIFI/General Education and/or math classes should be taken by students to complete their schedules.
3. For the BS Biology, the BS Environmental Science, the BA Biology, the BA Biology Biomedical Emphasis, the BA Biology-Teaching, and the BA Biology Ecology, Evolution and Organismal Biology emphasis, students must receive a grade of C- (1.67) or higher in courses that are applied to their major. Prior to enrollment in a course, all prerequisites must be completed with a C- (1.67) or higher.

4. ALEKS is a mathematics placement exam used at the University of Northern Iowa. Your academic advisor will use your score on the ALEKS assessment to determine your placement in UNI mathematics, chemistry, and physics courses.
5. A student enrolled in a biology class during fall or spring semester, or who drops a biology course after the first seven days of classes, should contact the department if they want to take the class again in an immediately subsequent semester. The student will only be allowed to register if space remains after all advanced registrations are completed.
6. To graduate from UNI with a BS Biology, a BA Biology, a BA Biology Biomedical Emphasis, or a BA Biology Ecology, Evolution and Organismal Biology emphasis, students must have both a cumulative and a major UNI GPA of 2.00 or higher, with a grade of C- (1.67) or higher in all courses that are applied to the major. To graduate from UNI with a BA Biology-Teaching, students must have both a cumulative and a major UNI GPA of 2.50 or higher, with a grade of C- (1.67) or higher in all courses that are applied to the major.
7. With the exception of the Biology 3+1 Joint program, to graduate from UNI with a biology major, students must take at least seven (7) hours of 4000-level biology coursework pertinent to their major, with four (4) of those hours being taken at UNI.
8. Transfer students entering UNI shall be subject to the acceptance requirements listed in #3.

Minors

To graduate from UNI with a biology minor, students must have both a cumulative and a minor UNI GPA of 2.00 or higher, with a grade of C- (1.67) or higher in all courses that are applied to the minor.

Notes:

1. A student can declare only one major within the Department of Biology with the exception of the BA Biology Teaching major, which can be paired with another degree in biology.
2. A student with a major within the Department of Biology cannot declare a Biology minor or a Biology-Teaching minor.
3. A student with a major in the interdisciplinary B.A. Environmental Resource Management: Ecosystems Track may not also declare a major or minor in biology.
4. A student with a major in the interdisciplinary B.S. Environmental Science: Environmental Life Science Track may not also declare a major or minor in biology.

Related Programs

- Chemistry - Teaching B.A.
- Mathematics - Teaching Minor