Biology, BA

Requirements

The Bachelor of Arts with a major in biology requires a minimum of 120 s.h., including at least 65–70 s.h. of work for the major. Students must maintain a grade-point average of at least 2.00 in all courses for the major and in all UI courses for the major. They must also complete the College of Liberal Arts and Sciences GE CLAS Core.

Students who wish to apply transfer credit toward the biology major should consult their biology advisor. Students who earn a degree in biology may not earn a degree in biomedical sciences or neuroscience.

In planning coursework, students should be guided by the College of Liberal Arts and Sciences maximum hours rule: students earning a BA may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the coursework is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average, but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

The major for the Bachelor of Arts prepares students for graduate study in the biological sciences and is especially appropriate for those interested in careers in biological science education at all levels. It also provides suitable preparation for professional positions in industry, laboratory, field research, or for professional study in medicine and other health-related fields.

The BA program is broadly based. It introduces students to key concepts in important areas of biology and, compared to the BS program, provides more flexibility in choosing elective courses. Students working toward a Bachelor of Arts degree must complete the chemistry/math foundation; the biology core; three courses from the breadth menus; one course with a laboratory; and five or six elective courses.

The BA with a major in biology requires the following coursework.

Requirements	Hours
Chemistry/Mathematics Foundation Courses	15
Biology Core Courses	19
Breadth Menus	9-11
Course With a Laboratory	4-6
Electives	18-19

Chemistry/Mathematics Foundation

Course #	Title	Hours
This sequence:		
CHEM:1110 & CHEM:1120	Principles of Chemistry I and Principles of Chemistry II	8
One of these:		
MATH:1460	Calculus for the Biological Sciences	4
MATH:1850	Calculus I	4
One of these:		
STAT:2010	Statistical Methods and Computing	3
STAT:3510	Biostatistics	3

Biology Core

Course #	Title	Hours
All of these:		
BIOL:1411 & BIOL:1412	Foundations of Biology and Diversity of Form and Function	8
BIOL:2512	Fundamental Genetics	4
BIOL:2723	Cell Biology	3
BIOL:3172	Evolution	4

Breadth Menus

Genes and Genomes

Course #	Title	Hours
One of these:		
BIOL:3212	Bioinformatics for Beginners	3
BIOL:3314	Genomics	3
BIOL:3373	Human Population Genetics and Variation	3
BIOL:3713	Molecular Genetics	4
BIOL:4333	Genes and Development (if not taken for a biological systems course)	3
BIOL:4373	Molecular Evolution: Genes, Genomes, and Organisms	3
BIOL:4386	Introduction to Scientific Computing for Biologists	3

Biological Systems

Course #	Title	Hours
Two of these:		
BIOL:2254	Endocrinology	3
BIOL:2673	Ecology	3
BIOL:2753	Introduction to Neurobiology	3
BIOL:3233	Introduction to Developmental Biology	3
BIOL:3244	Animal Behavior	3
BIOL:3253	Neurobiology I	4
BIOL:3343	Animal Physiology	3
BIOL:3363	Plant Developmental Biology	3
BIOL:4333	Genes and Development (if not taken as a genes and genomes course)	3
May include one of these:		
BIOL:2663	Plant Response to the Environment	3
BIOL:3663	Plant Response to the Environment	3

Course With a Laboratory

Course #	Title	Hours
One of these (must not have been used as a breadth menu course):		

BIOL:2246	Entomology Lab	4
BIOL:3245	Animal Behavior Laboratory	4
BIOL:3626	Cell Biology Laboratory	4
BIOL:3655	Neurogenetics Laboratory	4
BIOL:3656	Neurobiology Laboratory	4
BIOL:3676	Evolution Lab	4
BIOL:3716	Genetics and Biotechnology Lab	4
BIOL:3736	Developmental Biology Lab	4
BIOL:4999	Honors Research in Biology	6
MICR:2157 & MICR:2158	General Microbiology and General Microbiology Laboratory	5
Iowa Lakeside Laboratory courses (consult advisor)		4-5

Electives

Students complete at least one biology elective course (prefix BIOL) for 3–4 s.h. plus 15 s.h. of coursework outside the Department of Biology from the list below.

Biology courses may include courses chosen from the "Breadth Menus" list or the "Course With a Laboratory" list that have not been used to satisfy those requirements; other 3–4 s.h. courses numbered 2000 or above offered by the Department of Biology except for BIOL:2120 Good Genes Gone Bad: Genetic Disorders of Notable Celebrities, and advanced biology courses taught at Iowa Lakeside Laboratory with approval from the advisor.

Course #	Title	Hours
Four to five courses from these (15 s.h.):		
ANTH:2320	Origins of Human Infectious Disease	3
ANTH:3307	Modern Human Origins	3
ANTH:3328	Molecular Genetics of Human Disease	3
BMB:3110	Biochemistry	3
BMB:3120	Biochemistry and Molecular Biology I	3
BMB:3130	Biochemistry and Molecular Biology II	3
CBE:2040	Environment, Energy, and Climate Change	3
CHEM:2210	Organic Chemistry I	3
CHEM:2220	Organic Chemistry II	3
CPH:2230	Finding Patient Zero: The Exploration of Infectious Disease Transmission and Pandemic Threats	3
CPH:3400	Health, Work, and the Environment	3
CPH:4200	Agriculture, Food Systems, and Sustainability	3
CS:1110	Introduction to Computer Science	3
CS:2110	Programming for Informatics	4
GHS:2415	Bioethics	3
GHS:3110	Colonialism and Indigenous Health Equity	3
GHS:3325	Global Epidemics	3
GHS:3500	Global Public Health	3
HIST:2133	Science, Technology, and Society in the Modern World	3
HHP:2100	Human Anatomy	3
HHP:2110	Human Anatomy Laboratory	1
HHP:3115	Anatomy for Human Physiology With Lab	5
MATH:4750	Introduction to Mathematical Biology	3
MICR:2157	General Microbiology	3
MICR:2158	General Microbiology Laboratory	2
MICR:3147	Immunology and Human Disease	3
MICR:3168	Viruses and Human Disease	3
PHIL:3604	Introduction to Philosophy of Science	3
SEES:2374	Biogeography	3
SEES:2950	Environmental Conservation	4
SEES:3070	Marine Ecosystems and Conservation	3
SEES:3095	Field Ecology	4
SEES:3096	Winter Ecology	2
SEES:3097	Introduction to Bird Study	2
SEES:3110	Geography of Health	3
SEES:3210	Principles of Paleontology	3
SEES:3220	Evolution of the Vertebrates	3
SEES:3350	Urban Ecology	3
SEES:4470	Ecological Climatology	3
SEES:4600	Biogeography, Ecology, and Conservation of Mammals	4
From the physics courses, students may choose from the following (maximum of two courses); if they select PHYS:1511, they could take PHYS:1512; if they select PHYS:1611, they could take PHYS:1612:		
PHYS:1400	Basic Physics	3-4
or		
PHYS:1511	College Physics I	4
or PHYS:1611	Introductory Physics I	
PHYS:1512	College Physics II	4
or PHYS:1612	Introductory Physics II	

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 Apply 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.