

Biology, BS

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.

Before the third semester begins: MATH:1460 Calculus for the Biological Sciences or MATH:1850 Calculus I, CHEM:1110 Principles of Chemistry I, CHEM:1120 Principles of Chemistry II, and BIOL:1411 Foundations of Biology.

Before the fifth semester begins: BIOL:1412 Diversity of Form and Function, CHEM:2210 Organic Chemistry I, STAT:2010 Statistical Methods and Computing or STAT:3510 Biostatistics, and two other courses in the major.

Before the seventh semester begins: BIOL:2512 Fundamental Genetics; PHYS:1511 College Physics I and PHYS:1512 College Physics II, or equivalents; six or seven 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.

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.

Biology, BS

- Cell and Developmental Biology Track [p. 1]
- Genetics and Biotechnology Track [p. 2]
- Integrative Biology Track [p. 3]
- Neurobiology Track [p. 4]

Cell and Developmental Biology Track

Course	Title	Hours
Academic Career		
Any Semester		
GE CLAS Core: Sustainability ^a		
Hours		0
First Year		
Fall		
CHEM:1110	Principles of Chemistry I ^b	4
RHET:1030	Rhetoric	3 - 4
or ENGL:1200	or The Interpretation of Literature	
MATH:1460	Calculus for the Biological Sciences ^c	4
GE CLAS Core: Diversity and Inclusion ^d		3
CSI:1600	Success at Iowa	2
Hours		16-17

Spring

BIOL:1411	Foundations of Biology	4
CHEM:1120	Principles of Chemistry II	4
ENGL:1200	The Interpretation of Literature	3 - 4
or RHET:1030	or Rhetoric	
GE CLAS Core: Social Sciences ^d		3
Hours		14-15

Second Year

Any Semester

Research: students interested in research should begin the placement search process in the second year.

		Hours
		0
Fall		
BIOL:1412	Diversity of Form and Function	4
CHEM:2210	Organic Chemistry I	3
STAT:2010	Statistical Methods and Computing	3
or STAT:3510	or Biostatistics	
GE CLAS Core: World Languages First Level Proficiency or elective course ^e		4 - 5
Hours		14-15

Spring

BIOL:2512	Fundamental Genetics	4
BIOL:2723	Cell Biology	3
Major: foundation track course - BMB:3110 Biochemistry or BMB:3120 Biochemistry and Molecular Biology I ^f		3
GE CLAS Core: World Languages Second Level Proficiency or elective course ^e		4 - 5
Hours		14-15

Third Year

Fall

BIOL:3233	Introduction to Developmental Biology	3 - 4
or BIOL:3363	or Plant Developmental Biology	
or BIOL:3172	or Evolution	
PHYS:1511	College Physics I	4
Major: foundation track course ^g		3 - 5
GE CLAS Core: World Languages Third Level Proficiency or elective course ^e		4 - 5
Hours		14-18

Spring

BIOL:3172	Evolution	3 - 4
or BIOL:3233	or Introduction to Developmental Biology	
or BIOL:3363	or Plant Developmental Biology	
PHYS:1512	College Physics II	4
Major: cell and developmental biology elective I ^h		3
GE CLAS Core: World Languages Fourth Level Proficiency or elective course ^e		4 - 5
Hours		14-16

Fourth Year

Fall

BIOL:3626	Cell Biology Laboratory	4
or BIOL:3736	or Developmental Biology Lab	
Major: cell and developmental biology elective II ^h		3
GE CLAS Core: Historical Perspectives ^d		3
GE CLAS Core: International and Global Issues ^d		3

Elective course ⁱ	3
Hours	16
Spring	
Major: cell and developmental biology elective III ^h	3
Major: experiential requirement ^j	4
GE CLAS Core: Literary, Visual, and Performing Arts ^d	3
GE CLAS Core: Values and Culture ^d	3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) ^k	
Hours	13
Total Hours	115-125

- a 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 and Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Culture.
- b Enrollment in chemistry courses requires completion of a placement exam.
- c Enrollment in math courses requires completion of a placement exam.
- d 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.
- e 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.
- f Students who take BMB:3120 also must take BMB:3130 as one of their track courses.
- g See General Catalog for list of approved courses. Students who took BMB:3120 must take BMB:3130.
- h At least one elective in the major must be numbered 3000 or above.
- i 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.
- j See General Catalog for list of approved options; some may require more than one semester.
- k 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 or Graduation Services.

Genetics and Biotechnology Track

Course	Title	Hours
Academic Career		
Any Semester		
GE CLAS Core: Sustainability ^a		0
Hours		
First Year		
Fall		
CHEM:1110	Principles of Chemistry I ^b	4
ENGL:1200	The Interpretation of Literature	3 - 4
or RHET:1030	or Rhetoric	

MATH:1460	Calculus for the Biological Sciences ^c	4
GE CLAS Core: Diversity and Inclusion ^d		3
CSI:1600	Success at Iowa	2
Hours		16-17

Spring		
BIOL:1411	Foundations of Biology	4
CHEM:1120	Principles of Chemistry II	4
ENGL:1200	The Interpretation of Literature	3 - 4
or RHET:1030	or Rhetoric	
GE CLAS Core: Values and Culture ^d		3
Hours		14-15

Second Year Any Semester

Research: students interested in research should begin the placement search process in the second year.

Hours		0
Fall		
BIOL:1412	Diversity of Form and Function	4
CHEM:2210	Organic Chemistry I	3
STAT:2010	Statistical Methods and Computing	3
or STAT:3510	or Biostatistics	
GE CLAS Core: World Languages First Level Proficiency or elective course ^e		4 - 5
Hours		14-15

Spring		
BIOL:2512	Fundamental Genetics	4
BIOL:2723	Cell Biology	3
Major: foundation track course - BMB:3110 Biochemistry or BMB:3120 Biochemistry and Molecular Biology I ^f		3
GE CLAS Core: World Languages Second Level Proficiency or elective course ^e		4 - 5
Hours		14-15

Third Year

Fall		
BIOL:3172	Evolution	4
BIOL:3713	Molecular Genetics	4
Major: foundation track course ^g		3 - 5
GE CLAS Core: World Languages Third Level Proficiency or elective course ^e		4 - 5
Hours		15-18

Spring		
BIOL:3314	Genomics	3
PHYS:1511	College Physics I	4
GE CLAS Core: Social Sciences ^d		3
GE CLAS Core: World Languages Fourth Level Proficiency or elective course ^e		4 - 5
Hours		14-15

Fourth Year

Fall		
PHYS:1512	College Physics II	4
Major: genetics elective I ^h		3
Major: experiential elective ⁱ		4
GE CLAS Core: International and Global Issues ^d		3

GE CLAS Core: Literary, Visual, and Performing Arts 3

Hours	17
Spring	
BIOL:3716 Genetics and Biotechnology Lab	4
Major: genetics elective II ^h	3
GE CLAS Core: Historical Perspectives ^d	3
Elective course ^j	3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)	
Hours	13
Total Hours	117-125

- a 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 and Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Culture.
- b Enrollment in chemistry courses requires completion of a placement exam.
- c Enrollment in math courses requires completion of a placement exam.
- d 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.
- e 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.
- f Students who take BMB:3120 also must take BMB:3130 as one of their track courses.
- g See General Catalog for list of approved courses. Students who took BMB:3120 must take BMB:3130.
- h At least one elective must be numbered 3000 or above.
- i See General Catalog for list of approved options; some may require more than one semester.
- j 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.
- k 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 or Graduation Services.

Integrative Biology Track

Course	Title	Hours
Academic Career		
Any Semester		
GE CLAS Core: Sustainability ^a		
Research: Iowa Lakeside Laboratory summer field courses ^b		
Hours		0
First Year		
Fall		
CHEM:1110	Principles of Chemistry I ^c	4
ENGL:1200 or RHET:1030	The Interpretation of Literature or Rhetoric	3 - 4

MATH:1460 Calculus for the Biological Sciences 4

GE CLAS Core: Social Sciences ^e		3
CSI:1600	Success at Iowa	2
Hours		16-17
Spring		
BIOL:1411	Foundations of Biology	4
CHEM:1120	Principles of Chemistry II	4
RHET:1030 or ENGL:1200	Rhetoric or The Interpretation of Literature	3 - 4
GE CLAS Core: Diversity and Inclusion ^e		3
Hours		14-15

Second Year

Any Semester

Research: students interested in research should begin the placement search process in the second year.

Hours	0	
Fall		
BIOL:1412	Diversity of Form and Function	4
CHEM:2210	Organic Chemistry I	3
STAT:3510 or STAT:2010	Biostatistics or Statistical Methods and Computing	3
GE CLAS Core: World Languages First Level Proficiency or elective course ^f		4 - 5
Hours	14-15	
Spring		
BIOL:2512	Fundamental Genetics	4
BIOL:2673	Ecology	3
PHYS:1511	College Physics I	4
GE CLAS Core: World Languages Second Level Proficiency or elective course ^f		4 - 5
Hours	15-16	

Third Year

Fall

BIOL:2723	Cell Biology	3
PHYS:1512	College Physics II	4
Major: foundation track course - BMB:3110 Biochemistry or BMB:3120 Biochemistry and Molecular Biology I ^g		3
GE CLAS Core: World Languages Third Level Proficiency or elective course ^f		4 - 5
Hours		14-15

Spring

BIOL:3172	Evolution	4
Major: biological systems course I		3
Major: foundation track course ^h		3
GE CLAS Core: World Languages Fourth Level Proficiency or elective course ^f		4 - 5
Hours		14-15

Fourth Year

Fall

Major: biological systems course II		3
Major: investigative lab		4
GE CLAS Core: Historical Perspectives ^e		3
GE CLAS Core: International and Global Issues ^e		3

Elective course ⁱ	3
Hours	16
Spring	
Major: genes and genomes course	3
Major: experiential elective ^j	4
GE CLAS Core: Literary, Visual, and Performing Arts ^e	3
GE CLAS Core: Values and Culture ^e	3
Elective course ⁱ	3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)	
Hours	16
Total Hours	119-125

- a 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 and Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Culture.
- b After completing BIOL:1412 Diversity of Form & Function, students are eligible to enroll in Lakeside Laboratory summer field courses. Registration for these courses is in winter of each year.
- c Enrollment in chemistry courses requires completion of a placement exam.
- d Enrollment in math courses requires completion of a placement exam.
- e 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.
- f 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.
- g Students who take BMB:3120 also must take BMB:3130 as one of their track courses.
- h See General Catalog for list of approved courses. Students who took BMB:3120 must take BMB:3130.
- i 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.
- j See General Catalog for list of approved options; some may require more than one semester.
- k 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 or Graduation Services.

Neurobiology Track

Course	Title	Hours
Academic Career		
Any Semester		
GE CLAS Core: Sustainability ^a		0
Hours		
0		
First Year		
Fall		
CHEM:1110	Principles of Chemistry I ^b	4

RHET:1030 or ENGL:1200	Rhetoric or The Interpretation of Literature	3 - 4
MATH:1460	Calculus for the Biological Sciences ^c	4
GE CLAS Core: Social Sciences ^d		3
CSI:1600	Success at Iowa	2
Hours		16-17
Spring		
BIOL:1411	Foundations of Biology	4
CHEM:1120	Principles of Chemistry II	4
ENGL:1200 or RHET:1030	The Interpretation of Literature or Rhetoric	3 - 4
GE CLAS Core: Diversity and Inclusion ^d		3
Hours		14-15

Second Year

Any Semester

Research: Students interested in research should begin the placement search process in the second or third year.

Hours		0
Fall		
BIOL:1412	Diversity of Form and Function	4
CHEM:2210	Organic Chemistry I	3
STAT:2010 or STAT:3510	Statistical Methods and Computing or Biostatistics	3
GE CLAS Core: World Languages First Level Proficiency or elective course ^e		4 - 5
Hours		14-15
Spring		
BIOL:2512	Fundamental Genetics	4
BIOL:2753 or PSY:2701	Introduction to Neurobiology or Introduction to Behavioral Neuroscience	3
GE CLAS Core: Historical Perspectives ^d		3
GE CLAS Core: World Languages Second Level Proficiency or elective course ^e		4 - 5
Hours		14-15

Third Year

Fall

BIOL:2723	Cell Biology	3
BMB:3110 or BMB:3120	Biochemistry ^f or Biochemistry and Molecular Biology I	3
PHYS:1511	College Physics I	4
GE CLAS Core: World Languages Third Level Proficiency or elective course ^e		4 - 5
Hours		14-15

Spring

BMB:3130	Biochemistry and Molecular Biology II ^g	3
PHYS:1512	College Physics II	4
Major: neurobiology elective I ^h		3 - 4
GE CLAS Core: World Languages Fourth Level Proficiency or elective course ^e		4 - 5
Hours		14-16

Fourth Year

Fall

BIOL:3253	Neurobiology I	4
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BIOL:3245	Animal Behavior Laboratory	4
or BIOL:3656	or Neurobiology Laboratory	
or BIOL:3655	or Neurogenetics Laboratory	
Major: neurobiology elective II ^h		3
GE CLAS Core: International and Global Issues ^d		3
Hours		14
Spring		
BIOL:3254	Neurobiology II	4
Major: experiential elective ⁱ		4
GE CLAS Core: Literary, Visual, and Performing Arts ^d		3
GE CLAS Core: Values and Culture ^d		3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) ^j		
Hours		14
Total Hours		114-121

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- b Enrollment in chemistry courses requires completion of a placement exam.
- c Enrollment in math courses requires completion of a placement exam.
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- e 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.
- f Students who take BMB:3120 also must take BMB:3130.
- g See General Catalog for list of approved courses. Students who took BMB:3120 must take BMB:3130.
- h See General Catalog for list of approved courses.
- i See General Catalog for list of approved options; some may require more than one semester.
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