Biology, B.S.

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 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, B.S.

• 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
ENGL:1200 or RHET:1030 The Interpretation of Literature or Rhetoric 3 - 4
MATH:1460 Calculus for the Biological Sciences 4
GE CLAS Core: Diversity and Inclusion d 3

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: Social Sciences d 3

Hours 16-17

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

Hours 14-18

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

Hours 14-16

Fourth Year
Fall
BIOL:3626 or BIOL:3736 Cell Biology Laboratory or Developmental Biology Laboratory 4

Hours 16-17

a

b

c

d

e

f

g

h
Major: cell and developmental biology elective II  3
GE CLAS Core: Historical Perspectives  3
GE CLAS Core: International and Global Issues  3
Elective course  3

Hours  16

Spring
Major: cell and developmental biology elective III  3
Major: experiential requirement  4
GE CLAS Core: Literary, Visual, and Performing Arts  3
GE CLAS Core: Values and Culture  3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)

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  0

First Year
Fall
CHEM:1110  Principles of Chemistry I  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: Diversity and Inclusion  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: Values and Culture  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 or STAT:3510  Statistical Methods and Computing or Biostatistics  3
GE CLAS Core: World Languages First Level Proficiency or elective course  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 II  3
GE CLAS Core: World Languages Second Level Proficiency or elective course  4 - 5

Hours  14-15

Third Year
Fall
BIOL:3172  Evolution  4
BIOL:3713  Molecular Genetics  4
Major: foundation track course  3 - 5
GE CLAS Core: World Languages Third Level Proficiency or elective course  4 - 5

Hours  15-18

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

Hours  14-15

Fourth Year
Fall
PHYS:1512  College Physics II  4
Biology, B.S.

<table>
<thead>
<tr>
<th>Major: genetics elective</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major: experiential elective</td>
<td>4</td>
</tr>
<tr>
<td>GE CLAS Core: International and Global Issues</td>
<td>3</td>
</tr>
<tr>
<td>GE CLAS Core: Literary, Visual, and Performing Arts</td>
<td>3</td>
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</tbody>
</table>

**Hours** 17

**Spring**

| BIOL:3716 Genetics and Biotechnology Lab | 4 |
| Major: genetics elective II | 3 |
| GE CLAS Core: Historical Perspectives | 3 |
| Elective course | 3 |

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

| Hours | 13 |
| Total Hours | 117-125 |

Integrative Biology Track

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Career</td>
<td></td>
<td></td>
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<tr>
<td>Any Semester</td>
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<td></td>
</tr>
<tr>
<td>GE CLAS Core: Sustainability</td>
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<tr>
<td>Research: Iowa Lakeside Laboratory summer field courses</td>
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</tbody>
</table>

First Year

| Fall | CHEM:1110 Principles of Chemistry I | 4 |
| RHET:1030 or ENGL:1200 Rhetoric or The Interpretation of Literature | 3 - 4 |
| MATH:1460 Calculus for the Biological Sciences | 4 |
| GE CLAS Core: Social Sciences | 3 |
| CSI:1600 Success at Iowa | 2 |

| Hours | 16-17 |
| Total 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 | 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 | 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 | 3 |
| GE CLAS Core: World Languages Second Level Proficiency or elective course | 4 - 5 |

| Hours | 14-15 |

Spring

| BIOL:3172 Evolution | 4 |
| Major: biological systems course | 3 |
| Major: foundation track course | 3 |
| GE CLAS Core: World Languages Fourth Level Proficiency or elective course | 4 - 5 |

| Hours | 14-15 |

Integrative Biology Track

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Career</td>
<td></td>
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<tr>
<td>Any Semester</td>
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<td></td>
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<tr>
<td>GE CLAS Core: Sustainability</td>
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<tr>
<td>Research: Iowa Lakeside Laboratory summer field courses</td>
<td></td>
<td></td>
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</tbody>
</table>
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 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

Neurobiology Track

Course | Title | Hours
--- | --- | ---
Academic Career
Any Semester
GE CLAS Core: Sustainability a | | 0

First Year

Fall

CHEM:1110 Principles of Chemistry I b 4
RUET: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 RIHT: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 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 Introduction to Neurobiology 3
PHYS:1511 College Physics I 4
GE CLAS Core: World Languages Second Level Proficiency or elective course e 4 - 5

Hours 15-16

Third Year

Fall

BIOL:3244 Animal Behavior 5
BMB:3120 or BMB:3110 Biochemistry and Molecular Biology or Biochemistry 3
GE CLAS Core: Historical Perspectives d 3
GE CLAS Core: World Languages Second Level Proficiency or elective course e 4 - 5

Hours 15-16

Spring

BIOL:2723 Cell Biology 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMB:3130</td>
<td>Biochemistry and Molecular Biology II g</td>
<td>3</td>
</tr>
<tr>
<td>PHYS:1512</td>
<td>College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>GE CLAS Core: World Languages Fourth Level Proficiency or elective course e</td>
<td>4 - 5</td>
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</table>

**Fourth Year**

### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL:3253</td>
<td>Neurobiology I</td>
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</tr>
<tr>
<td>BIOL:3655</td>
<td>Neurogenetics Laboratory</td>
<td>4</td>
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<tr>
<td>or BIOL:3656</td>
<td>Neurobiology Laboratory</td>
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</tr>
<tr>
<td>Major: neurobiology elective</td>
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</tr>
<tr>
<td>GE CLAS Core: International and Global Issues d</td>
<td>3</td>
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</tbody>
</table>

**Hours**

14

### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL:3254</td>
<td>Neurobiology II</td>
<td>4</td>
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<tr>
<td>Major: experiential elective h</td>
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<tr>
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</table>

**Hours**

14

**Total Hours**

116-122

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6. Students who take BMB:3120 also must take BMB:3130.

7. See General Catalog for list of approved courses. Students who took BMB:3120 must take BMB:3130.

8. See General Catalog for list of approved options; some may require more than one semester.

9. 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.