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 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 Academic Career Hours

Any Semester
GE CLAS Core: Sustainability a

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: 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 or RHET:1030 The Interpretation of Literature or Rhetoric 3 - 4
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 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:2723 Cell Biology
3
Major: foundation track course - BMB:3110 Biochemistry or BMB:3120 Biochemistry and Molecular Biology I
3
GE CLAS Core: World Languages Second Level Proficiency or elective course e
4 - 5

Hours 14-15

Third Year

Fall
BIOL:3233 or BIOL:3363 or BIOL:3172 Introduction to Developmental Biology or Plant Developmental Biology or Evolution
3 - 4
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 or BIOL:3233 or BIOL:3363 Evolution or Introduction to Developmental Biology or Plant Developmental Biology
3 - 4
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 or BIOL:3736 Cell Biology Laboratory or Developmental Biology Lab
4
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
### Genetics and Biotechnology Track

<table>
<thead>
<tr>
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<th>Title</th>
<th>Hours</th>
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<tr>
<td><strong>Fall</strong></td>
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<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I</td>
<td>4</td>
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<tr>
<td>ENGL:1200 or RHET:1030</td>
<td>The Interpretation of Literature or Rhetoric</td>
<td>3 - 4</td>
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<td><strong>GE CLAS Core: Sustainability</strong></td>
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<td>0</td>
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<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
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<tr>
<td>Major: cell and developmental biology elective III</td>
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<td>Major: experiential requirement</td>
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<tr>
<td>GE CLAS Core: Literary, Visual, and Performing Arts</td>
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<tr>
<td>GE CLAS Core: Values and Culture</td>
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<tr>
<td>Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)</td>
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**Total Hours 115-125**

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- 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.
- Enrollment in chemistry courses requires completion of a placement exam.
- Enrollment in math courses requires completion of a placement exam.
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- Students who took BMB:3120 must take BMB:3130.
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---

**GE CLAS Core: Sustainability**

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<tr>
<td>CSI:1600</td>
<td>Success at Iowa</td>
<td>2</td>
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</table>

**Total Hours 16-17**

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

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**Second Year**

**Any Semester**

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

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<th>Course</th>
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<th>Hours</th>
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<tr>
<td>BIOL:1412</td>
<td>Diversity of Form and Function</td>
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<tr>
<td>CHEM:2210</td>
<td>Organic Chemistry I</td>
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<td>STAT:2010 or STAT:3510</td>
<td>Statistical Methods and Computing or Biostatistics</td>
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**Total Hours 14-15**

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**Spring**

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<td>BIOL:2512</td>
<td>Fundamental Genetics</td>
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<td>BIOL:2723</td>
<td>Cell Biology</td>
<td>3</td>
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<tr>
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<td>BMB:3110 or Biochemistry or BMB:3120 Biochemistry and Molecular Biology</td>
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<td>4 - 5</td>
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**Total Hours 14-15**

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**Third Year**

**Fall**

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<td>BIOL:3713</td>
<td>Molecular Genetics</td>
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<td>Major: foundation track course</td>
<td>BMB:3110 or Biochemistry or BMB:3120 Biochemistry and Molecular Biology</td>
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<tr>
<td>GE CLAS Core: World Languages Third Level Proficiency or elective course</td>
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**Total Hours 15-18**

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**Spring**

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<td>PHYS:1511</td>
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</tr>
<tr>
<td>GE CLAS Core: World Languages Fourth Level Proficiency or elective course</td>
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**Total Hours 14-15**

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**Fourth Year**

**Fall**

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<td>College Physics II</td>
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<tr>
<td>Major: genetics elective</td>
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<tr>
<td>Major: experiential elective</td>
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<tr>
<td>GE CLAS Core: International and Global Issues</td>
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</table>
GE CLAS Core: Literary, Visual, and Performing Arts 3

Spring
B I O L : 3 7 1 6 Genetics and Biotechnology Lab 4
Major: genetics elective II h 3
GE CLAS Core: Historical Perspectives d 3
Elective course i 3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)

Hours 17
Total Hours 117-125

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Integrative Biology Track

Course Title Hours
Academic Career
Any Semester
GE CLAS Core: Sustainability a
Research: Iowa Lakeside Laboratory summer field courses b

First Year Fall
CHEM:1110 Principles of Chemistry I c 4
ENGL:1200 or RHET:1030 The Interpretation of Literature or Rhetoric 3 - 4

Hours 0

MATH:1460 Calculus for the Biological Sciences d 4
GE CLAS Core: Social Sciences e 3
CSI:1600 Success at Iowa 2

Spring
B I O L : 1 4 1 1 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 16-17
Total Hours 117-125

Second Year
Any Semester
Research: students interested in research should begin the placement search process in the second year.

Fall
B I O L : 1 4 1 2 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
B I O L : 2 5 1 2 Fundamental Genetics 4
B I O L : 2 6 7 3 Ecology 3
P H Y S : 1 5 1 1 College Physics I 4
GE CLAS Core: World Languages Second Level Proficiency or elective course f 4 - 5

Hours 15-16

Third Year
Fall
B I O L : 2 7 2 3 Cell Biology 3
P H Y S : 1 5 1 2 College Physics II 4
Major: foundation track course - BMB:3110 Biochemistry or BMB:3120 Biochemistry and Molecular Biology I g

GE CLAS Core: World Languages Third Level Proficiency or elective course f 4 - 5

Hours 14-15

Spring
B I O L : 3 1 7 2 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

Hours 14-15

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Elective course

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<th>Hours</th>
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<tr>
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Spring

Major: genes and genomes course

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<tr>
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Major: experiential elective

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GE CLAS Core: Literary, Visual, and Performing Arts

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GE CLAS Core: Values and Culture

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Elective course

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

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<tr>
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Total Hours

| 119-125 |

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**Neurobiology Track**

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<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I</td>
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**Second Year**

**Fall**

BIOL:1412 | Diversity of Form and Function | 4 |

CHEM:2210 | Organic Chemistry I | 3 |

STAT:2010 | Statistical Methods and Computing | 3 |

GE CLAS Core: World Languages First Level Proficiency or elective course

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**Spring**

BIOL:2512 | Fundamental Genetics | 4 |

BIOL:2753 | Introduction to Neurobiology or Introduction to Behavioral Neuroscience | 3 |

GE CLAS Core: Historical Perspectives

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GE CLAS Core: World Languages Second Level Proficiency or elective course

<table>
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<th>Hours</th>
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**Third Year**

**Fall**

BIOL:2723 | Cell Biology | 3 |

BMB:3110 or BMB:3120 | Biochemistry or Biochemistry and Molecular Biology I | 3 |

PHYS:1511 | College Physics I | 4 |

GE CLAS Core: World Languages Third Level Proficiency or elective course

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<th>Hours</th>
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<td>4 - 5</td>
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**Spring**

BMB:3130 | Biochemistry and Molecular Biology II | 3 |

PHYS:1512 | College Physics II | 4 |

GE CLAS Core: World Languages Fourth Level Proficiency or elective course

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**Fourth Year**

**Fall**

BIOL:3253 | Neurobiology I | 4 |
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<td>or BIOL:3656</td>
<td>Neurobiology Laboratory</td>
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<tr>
<td>or BIOL:3655</td>
<td>Neurogenetics Laboratory</td>
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<tr>
<td>GE CLAS Core: International and Global Issues</td>
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**Hours** 14

### Spring

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<td>GE CLAS Core: Literary, Visual, and Performing Arts</td>
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<td>GE CLAS Core: Values and Culture</td>
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<td>(typically in February for spring, September for fall)</td>
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**Total Hours** 114-121

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