

# BIOLOGY COMPREHENSIVE MAJOR: GENERAL BIOLOGY EMPHASIS

## Program Requirements

The General Biology Emphasis requires a minimum of 51 credits including the 26-credit Biology Nucleus, 14 additional credits in Biology, and 11 credits of supporting courses:

All Biology majors require the 26-credit Biology Nucleus.

Code	Title	Credits
<b>Biology Nucleus</b>		
BIOL 150	Biological Principles (with laboratory) (GT-SC1)	4
BIOL 151	Diversity and Patterns of Life (with laboratory)	4
BIOL 301	General Ecology	3
BIOL 310	Cell Biology	3
BIOL 312	Genetics (with recitation)	4
CHEM 111	General Chemistry I (GT-SC2)	3
CHEM 112	General Chemistry Laboratory I (GT-SC1)	1
CHEM 113	General Chemistry II	3
CHEM 114	General Chemistry Laboratory II	1
<b>Total Credits</b>		<b>26</b>

Code	Title	Credits
<b>Required Biology courses</b>		
One of the following:		2
BIOL 302	Ecology Laboratory and Recitation	
BIOL 313	Cell and Genetics Laboratory	
Ten credits of the following:		10
300- and 400-level Biology courses		
CHEM 471	Biochemistry I	
SCI 499	Internship in Science	
At least two credits of Capstone Experience Courses:		2-5
BIOL 495	Senior Seminar	
BIOL 496	Senior Thesis	
<b>Total Credits</b>		<b>14-17</b>

Code	Title	Credits
<b>11 credits of supporting courses</b>		
CHEM 231	Introduction to Organic Chemistry and Biochemistry	3
CHEM 234	Introductory Organic and Biochemistry Laboratory	1
PHYS 140	Introductory Physics (with laboratory) (GT-SC1)	4
One of the following:		3-4
MATH 151	Calculus I (GT-MA1)	
MATH 213	Probability and Statistics (GT-MA1)	
<b>Total Credits</b>		<b>11-12</b>

## Capstone Course Requirement

The following courses in the Biology Major fulfill the capstone course requirement: BIOL 495 SENIOR SEMINAR, BIOL 496 Senior Thesis, or EDUC 409 SECONDARY STUDENT TEACHING.

## Graduation Requirements

Undergraduate programs require a minimum of 120 semester credits for graduation. Of those 120 credits, 40 credits must be in upper-division courses (those marked 300 and above). Fifteen of these 40 upper-division credits must be earned in courses that are part of the standard or comprehensive major program being pursued.

Students are expected to review all graduation requirements, which can be found in the Western Undergraduate Catalog: Graduation Requirements (<https://catalog.western.edu/undergraduate/graduation-requirements/>).

Course	Title	Credits
<b>Year One</b>		
<b>Fall</b>		
HWTR 100	First Year Seminar	1
ENG 102	Writing and Rhetoric I (GT-CO1)	3
MATH 140	College Algebra (GT-MA1)	3
BIOL 151	Diversity and Patterns of Life (with laboratory)	4
CHEM 111 & CHEM 112	General Chemistry I (GT-SC2) and General Chemistry Laboratory I (GT-SC1)	4
<b>Credits</b>		<b>15</b>
<b>Spring</b>		
CHEM 113 & CHEM 114	General Chemistry II and General Chemistry Laboratory II	4
BIOL 150	Biological Principles (with laboratory) (GT-SC1)	4
MATH 141	Precalculus (GT-MA1)	4
ENG 103	Writing and Rhetoric II (GT-CO2)	3
<b>Credits</b>		<b>15</b>
<b>Year Two</b>		
<b>Fall</b>		
BIOL 301	General Ecology	3
BIOL 310	Cell Biology	3
CHEM 231 or CHEM 331	Introduction to Organic Chemistry and Biochemistry or Organic Chemistry I	3
CHEM 234 or CHEM 334	Introductory Organic and Biochemistry Laboratory or Organic Chemistry Laboratory I	1
MATH 151 or MATH 213	Calculus I (GT-MA1) or Probability and Statistics (GT-MA1)	4
<b>Credits</b>		<b>14</b>
<b>Spring</b>		
BIOL 302 or BIOL 313	Ecology Laboratory and Recitation or Cell and Genetics Laboratory	2
BIOL 312	Genetics (with recitation)	4
Arts & Humanities GE		3
Social Science GE		3
Social Science GE		3
<b>Credits</b>		<b>15</b>
<b>Year Three</b>		
<b>Fall</b>		
PHYS 140	Introductory Physics (with laboratory) (GT-SC1)	4
Arts & Humanities GE		6
Social Science GE		3
Gen Ed	General Education	3
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
Biology Elective		4

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Biology Elective		4
Gen Ed	General Education	9
<b>Credits</b>		<b>17</b>
<b>Year Four</b>		
<b>Fall</b>		
BIOL 495 or BIOL 496	Senior Seminar or Senior Thesis	1
Biology Elective		3
Gen Ed	General Education	9
<b>Credits</b>		<b>13</b>
<b>Spring</b>		
Biology Elective		3
Gen Ed	General Education	12
<b>Credits</b>		<b>15</b>
<b>Total Credits</b>		<b>120</b>