

# BIOLOGY, B.A.

The Bachelor of Arts degree in Biology provides students with a comprehensive understanding of general biology and prepares them for successful entry to employment, graduate school, or selected professional schools. The Bachelor of Arts in Biology prepares students for careers in academic and industrial research; teaching, through the alternate pathway to certification; and for various careers in the publishing, pharmaceutical, biomedical and biotechnology industries.

Code	Title	Credits
<b>Required Biology Courses:</b>		<b>21</b>
BIOL 130	Principles Biology I	4
BIOL 131	Principles Biology II	4
BIOL 230	Cell Biology	4
BIOL 304	Genetics	4
BIOL 402	Ecology	4
or		
BIOL 332	Field Ecology	4
BIOL 440	Biology Seminar	1
<b>Elective Biology Courses:</b>		<b>15</b>
Select 15 credits from Biology courses numbered higher than BIOL 230.		
<b>Required Chemistry Courses:</b>		<b>10</b>
CHEM 105	General Chemistry I Lecture	3
CHEM 1105	General Chemistry I Recitation/Laboratory	2
CHEM 106	General Chemistry II Lecture	3
CHEM 1106	General Chemistry II Recitation/Laboratory	2
<b>Required Physics Course:</b>		<b>3</b>
PHYS 101	Basic Concepts of Physics	3
<b>Required Math and Computer Science Courses:</b>		<b>7</b>
MATH 175	Enhanced Precalculus	4
INTD 180	Computers Tools for Science and Math	3
	or MATH 140 Statistics I	
	or PSYC 230 Statistics for Social Sciences	
<b>Total Credits:</b>		<b>56</b>

1. Students must successfully complete a minimum of 5 Biology major courses at NJCU.
2. Credits earned for Biology courses more than 10 years ago may not satisfy department requirements.
3. A minimum grade of "C" is required in each Biology, Chemistry, Physics and Mathematics course in order to receive the BA in Biology.
4. Students must achieve an average of "C" (2.0) or better in Principles of Biology I & II before enrolling in higher-level Biology courses.
5. Students must successfully complete each required course within three attempts to remain in the BA in Biology program.
6. Students must successfully complete both Anatomy & Physiology I and II to earn Biology elective credits.
7. Students may apply up to 6 credits of Biology Research or Coop Education toward the BA in Biology requirements.
8. Biology electives should be selected from courses numbered higher than BIOL 230.

<b>Freshman</b>		<b>Credits</b>
<b>Semester 1</b>		
ENGL 101 or ESL 101	English Composition I or English Composition I for English as a Second Language Students	4-6
MATH 175	Enhanced Precalculus	4
BIOL 130	Principles Biology I	4
INTD 101	Orientation to College <sup>*First time Freshmen Only</sup>	1
General Education Tier I Course <sup>1</sup>		3
<b>Credits</b>		<b>16-18</b>
<b>Semester 2</b>		
ENGL 102 or ESL 102	English Composition II or	4-6
BIOL 131	Principles Biology II	4
INTD 180 or PSYC 230	Computers Tools for Science and Math ( or MATH 140 Statistics I ) or Statistics for Social Sciences	3
General Education Tier II Course		3
<b>Credits</b>		<b>14-16</b>
<b>Sophomore</b>		
<b>Semester 1</b>		
BIOL 230	Cell Biology	4
CHEM 105	General Chemistry I Lecture	3
CHEM 1105	General Chemistry I Recitation/Laboratory	2
General Education Tier II Course		3
General Education Tier II Course		3
<b>Credits</b>		<b>15</b>
<b>Semester 2</b>		
BIOL 304	Genetics	4
CHEM 106	General Chemistry II Lecture	3
CHEM 1106	General Chemistry II Recitation/Laboratory	2
General Education Tier II Course		3
General Education Tier II Course		3
<b>Credits</b>		<b>15</b>
<b>Junior</b>		
<b>Semester 1</b>		
Biology Elective 2xx (above BIOL 230)		4
PHYS 101	Basic Concepts of Physics	3
General Education Tier II Course		3
Minor or Elective Course		3
Minor or Elective Course		3
<b>Credits</b>		<b>16</b>
<b>Semester 2</b>		
Biology Elective 2xx (above BIOL 230)		4
General Education Tier III Course		3
Minor or Elective Course		3
Minor or Elective Course		3
Minor or Elective Course		3
<b>Credits</b>		<b>16</b>
<b>Senior</b>		
<b>Semester 1</b>		
BIOL 402	Ecology	4
or		

BIOL 332	Field Ecology	4
Biology Elective 2xx (above BIOL 230)		3
Minor or Elective Course		3
Minor/Elective		3
Minor or Elective Course		3
<b>Credits</b>		<b>20</b>
<b>Semester 2</b>		
BIOL 440	Biology Seminar	1
Biology Elective 2XX (above BIOL 230)		4
Minor or Elective Course		3
Minor or Elective Course		3
Minor or Elective Course		3
<b>Credits</b>		<b>14</b>
<b>Total Credits</b>		<b>126-130</b>

All Biology core courses must have a C or higher

1 <https://nextcatalog.njcu.edu/undergraduate/undergraduate-degree-requirements/general-education/tier-i-courses/> (<https://catalog.njcu.edu/undergraduate/undergraduate-degree-requirements/general-education/tier-i-courses/>)

#### ***Student Learning Outcomes***

Upon completion of the Biology BA program, students will be able to:

1. Demonstrate knowledge of the factual and theoretical basis of biology including mechanisms on the molecular, cellular, organismal, and systems levels.
2. Demonstrate understanding of scientific inquiry and explain how scientific knowledge is discovered and validated.
3. Apply quantitative knowledge and reasoning to describe or explain phenomena in the natural world.
4. Demonstrate knowledge of basic principles of chemistry and their application to understanding living systems.
5. Communicate scientific information in written and/or oral formats.