

# BIOLOGY, B.A.

## Learning Outcomes

Upon successful completion of the program of studies for biology, the student will receive a B.S. or B.A. in Biology and will have given evidence of the following outcomes and goals:

- Students will gain knowledge of the key ideas and theories within the field of biology.
- Students will learn to use basic biology laboratory field methods, tools and techniques.
- Students will effectively read and critically evaluate scientific literature as evidenced by rubric driven analysis of signature assignments in BI201 Biological Literature and BI443 Capstone in Biology: BA or BI444 Capstone in Biology: BS.
- Students will learn to communicate biological information effectively as evidence by a) rubric driven analysis of oral presentations in BI120 Biological Diversity & Phylogeny and BI443 Capstone in Biology: BA or BI444 Capstone in Biology: BS, and b) rubric driven analysis of formal written reports prepared in BI201 Biological Literature and upper-level biology elective courses.
- Students will integrate personal and ethical values within the study of biology as evidenced by students' responses on the departmentally generated values survey.

## Requirements

To earn this degree, students must successfully complete at least 120 credits, including General Education (<http://catalog.georgian.edu/undergraduate/academic-programs/bridge-general-education-program-requirements/>) requirements and the major requirements below.

## Major Sequence

### Course Requirements (except for Medical Laboratory Science Track)

A minimum of 30 biology credits, plus courses in related areas, including:

Code	Title	Credits
<b>Biology Courses</b>		
BI120	Biological Diversity & Phylogeny	4.0
BI121	Cellular Organiz., Energetics & Function	4.0
BI201	Biological Literature	1.0
BI204	Genetics & Evolution	4.0
Select one of the following:		3.0-4.0
BI305	Biological Interactions: Ecology (4 credits)	
BI310	Ecology & Health (3 credits)	
BI443	Capstone in Biology: BA	2.0
or BI444	Capstone in Biology: BS	
Biology electives		12.0-13.0
<b>Related Courses</b>		
Select one of the following: <sup>1</sup>		3.0-4.0
MA109	College Algebra	
MA110	Precalculus	
MA115	Calculus I	
MA116	Calculus II	
CH113	General Chemistry I	4.0

CH114	General Chemistry II	4.0
CH223	Organic Chemistry I	4.0
Select one of the following sequences: <sup>1</sup>		8.0
PH111 & PH112	Physics in Everyday Life I and Physics in Everyday Life II	
PH115 & PH116	College Physics I and College Physics II	
PH121 & PH122	University Physics I and University Physics II	
<b>Total Credits</b>		<b>53.0-56.0</b>

<sup>1</sup> Students electing for PH115 College Physics I must take MA110 Precalculus. Students electing for PH121 University Physics I must take MA115 Calculus I. Students preparing for professional careers or graduate school are strongly advised to take PH121 University Physics I and PH122 University Physics II.

### Requirements for Medical Laboratory Science Track

A minimum of 40 credits including:

Code	Title	Credits
BI121	Cellular Organiz., Energetics & Function	4.0
BI201	Biological Literature	1.0
BI204	Genetics & Evolution	4.0
BI213	Human Anatomy & Physiology I	4.0
BI214	Human Anatomy & Physiology II	4.0
BI219	Microbiology	4.0
BI401	Medical Technology Internship I	16.0
BI402	Medical Technical Internship II	16.0
Select one of the following:		3.0-4.0
BI427	Immunology (4 credits)	
BI428	Fundamentals of Immunology (3 credits)	
BI437	Biochemistry I	4.0
BI443	Capstone in Biology: BA	2.0
or BI444	Capstone in Biology: BS	

### Related Courses

Select one of the following: <sup>1</sup>		3.0-4.0
MA109	College Algebra	
MA110	Precalculus	
MA115	Calculus I	
MA116	Calculus II	
CH113	General Chemistry I	4.0
CH114	General Chemistry II	4.0
CH223	Organic Chemistry I	4.0
CH224	Organic Chemistry II	4.0
Select one of the following sequences: <sup>1</sup>		
PH111 & PH112	Physics in Everyday Life I and Physics in Everyday Life II	
PH115 & PH116	College Physics I and College Physics II	
PH121 & PH122	University Physics I and University Physics II	
<b>Total Credits</b>		<b>81.0-83.0</b>

<sup>1</sup> Students electing for PH115 College Physics I must take MA110 Precalculus. Students electing for PH121 University Physics I must take MA115 Calculus I. Students preparing for professional careers or graduate school are strongly advised to take PH121 University Physics I and PH122 University Physics II.

For the B.A. degree, a minimum of 9 credits of biology coursework must be taken at the 300 or 400 level.

For students seeking teacher certification, in addition to the core of required courses for the biology degree, the department recommends the following courses: BI213 Human Anatomy & Physiology I and BI214 Human Anatomy & Physiology II. For Teacher of Biology (K-12) certification, at least 12 credits must be taken at the 300 or 400 level.

It is recommended that students who have completed General Biology I, II, at another institution, take BI320 Cell Biology in place of BI121 Cellular Organiz., Energetics & Function to satisfy their cell biology requirement.

All biology majors who have completed 16 credits of Georgian Court biology courses will have their status reviewed by the biology faculty members. Those with a Georgian Court biology GPA of less than 2.50 may be advised and required to change their major. A Georgian Court biology GPA of 2.50 is required for graduation.

All majors pursuing the B.S. or B.A. degree in Biology are required to take a department-administered Major Field Test before graduation.

## Degree Map(s)

Course	Title	Credits
<b>First Year</b>		
<b>Fall Semester</b>		
GEN101	Pathway to the Bridge <sup>1</sup>	2.0
EN111 or EN221	Academic Writing and Research I <sup>1</sup> or Honors Argument: Rhetoric & Research	3.0
Select one of the following: <sup>1</sup>		3.0-4.0
MA109	College Algebra	
MA110	Precalculus	
MA115	Calculus I	
MA116	Calculus II	
Mod. Lang. or V&P Arts <sup>1</sup>		3.0
BI120	Biological Diversity & Phylogeny <sup>2</sup>	4.0
<b>Credits</b>		<b>15.0-16.0</b>
<b>Spring Semester</b>		
GEN199	WI:Discovering Self in the Universe <sup>1</sup>	3.0
Literature <sup>1</sup>		3.0
Mod. Lang. or V&P Arts <sup>1</sup>		3.0
BI121	Cellular Organiz., Energetics & Function <sup>2</sup>	4.0
Elective		3.0
<b>Credits</b>		<b>16.0</b>
<b>Second Year</b>		
<b>Fall Semester</b>		
Social Science 1 or History <sup>1</sup>		3.0
BI204	Genetics & Evolution <sup>2</sup>	4.0
BI201	Biological Literature <sup>2</sup>	1.0

CH113	General Chemistry I <sup>2</sup>	4.0
Elective		3.0
<b>Credits</b>		<b>15.0</b>
<b>Spring Semester</b>		
PL245	Philosophical Inquiry (or Religious Studies) <sup>1</sup>	3.0
Social Science 1 or History <sup>1</sup>		3.0
BI305	Biological Interactions: Ecology <sup>2</sup>	4.0
CH114	General Chemistry II <sup>2</sup>	4.0
<b>Credits</b>		<b>14.0</b>
<b>Third Year</b>		
<b>Fall Semester</b>		
PL245	Philosophical Inquiry (or Religious Studies) <sup>1</sup>	3.0
Social Science 2 <sup>1</sup>		3.0
PH111	Physics in Everyday Life I <sup>2</sup>	4.0
CH223	Organic Chemistry I <sup>2</sup>	4.0
<b>Credits</b>		<b>14.0</b>
<b>Spring Semester</b>		
Select one of the following: <sup>1</sup>		3.0
Ethics		
WS311	Shaping Lives: Women & Gender	
GEN400	WI:Visioning a Future	
PH112	Physics in Everyday Life II <sup>2</sup>	4.0
Elective		3.0
Elective		3.0
<b>Credits</b>		<b>13.0</b>
<b>Fourth Year</b>		
<b>Fall Semester</b>		
Select one of the following: <sup>1</sup>		3.0
Ethics		
WS311	Shaping Lives: Women & Gender	
GEN400	WI:Visioning a Future	
Select one of the following: <sup>1</sup>		3.0
Ethics		
WS311	Shaping Lives: Women & Gender	
GEN400	WI:Visioning a Future	
BI Elective <sup>2</sup>		4.0
Elective		3.0
Elective		3.0
<b>Credits</b>		<b>16.0</b>
<b>Spring Semester</b>		
BI443 or BI444	Capstone in Biology: BA <sup>2</sup> or Capstone in Biology: BS	2.0
BI Elective <sup>2</sup>		4.0
300/400 BI Elective <sup>2</sup>		3.0
Elective		3.0
Elective		3.0
Elective (if needed)		1.0-2.0
<b>Credits</b>		<b>16.0-17.0</b>
<b>Total Credits</b>		<b>119.0-121.0</b>

<sup>1</sup> General Education

<sup>2</sup> Major