BIOLOGY (BS)

The Biology major at Gordon State College provides a strong foundation in the physical sciences and a broad understanding of the biological sciences. The program equips students with the knowledge, analytical abilities, and intellectual skills necessary to pursue a wide range of careers and advanced study.

The major offers four concentrations:

General Biology

This concentration prepares students for employment across diverse areas of the biological sciences. With careful selection of electives in consultation with an academic advisor, graduates may pursue advanced study in biology or professional programs in medicine, pharmacy, veterinary medicine, and related fields. This pathway also provides the prerequisite coursework for entry into allied health graduate programs, including physical therapy and physician assistant studies.

Biology Education

In response to the ongoing shortage of qualified high school biology teachers in Georgia, this concentration prepares students for careers in secondary science education. The curriculum combines biological content knowledge with pedagogical training to ensure graduates meet certification requirements and are well-prepared to teach biology at the high school level.

Biotechnology

The Biotechnology concentration emphasizes critical thinking, problem-solving, teamwork, and communication skills essential for today's scientific workforce. Graduates are prepared for careers in pharmaceuticals, healthcare, agriculture, and environmental science, contributing to applications such as gene editing, bioremediation, sustainable biofuels, and advances biocatalysis.

Environmental Biology

This concentration focuses on the study of organisms and their interactions with the environment, preparing students to address pressing ecological and environmental challenges. Students develop skills in field work, data analysis, and environmental assessment while gaining a strong foundation in ecology, conservations, and sustainability. Graduates are prepared for careers in environmental consulting, natural resource management, conservation organizations, and government agencies, as well as for graduate study in environmental and ecological sciences.

All concentrations require 42 to 46 semester hours in Core IMPACTS, and 18 credit hours in Field of Study of the Core IMPACTS Curriculum.

When possible, student should complete CHEM 1211K Principles of Chemistry I and CHEM 1212K Principles of Chemistry II in STEM thus providing an additional 8 semester hours of electives in his or her program.

Code	Title	Hours
Concentration: General Biology		
Required Courses		
BIOL 3200K	Genetics	
BIOL 3300K	Cellular & Molecular Biol	
BIOL 3500K	Ecology	
BIOL 4200	Evolution	
BIOL 4000	Senior Seminar	
Choose seven additional semester hours in biology courses numbered 3000 and above		7
Additional Requirements H1		
CHEM 2401K	Organic Chemistry I	
PHYS 1111K	Intro Physics I	
or PHYS 2211K	Prin Physics I	
Electives H2		
Choose fifteen hours from courses numbered 3000 and above from biology and other disciplines		15
Electives H3		
Choose thirteen hours from courses numbered 1000 and above from biology and other disciplines. The following courses are strongly encouraged: [1]		13
CHEM 2402K	Organic Chemistry II	
PHYS 1112K	Intro Physics II	
MATH 1501	Calculus I	
MATH 1502	Calculus II	
TOTAL		132
Concentration: Biology Education		
Required Courses		**24**
BIOL 3200K	Genetics	4
BIOL 3300K	Cellular & Molecular Biol	4
BIOL 3500K	Ecology	4
BIOL 4200	Evolution	3
BIOL 4000	Senior Seminar	2
Seven additional semester hours in biology courses numbered 3000 and above		
Additional Requirements H1		**8**
CHEM 2401K	Organic Chemistry I	
PHYS 1111K/2211K	Intro Physics I	
Required Education Courses H2		**35**
EDUC 2110	Investigating Issues in Educ	
EDUC 2120	Exploring Socio-Cultural Persp	
EDUC 2130	Exploring Learning & Teaching	
EDUC 2140	Foundations of Reading	
EDUC 3005	Mid & Sec Curric/Instr/Assess	
LART 3006	Teach Read in Content Areas	
SPED 3105	Except Lrnr in Middle & Sec	
EDUC 3504	Sem in Secondary School Pract	
EDUC 3505	Secondary Practicum	
EDUC 4504	Seminar in Secondary Stu Teach	
EDUC 4505	Secondary Student Teaching	
EDUC 4800	Curriculum & Instruction in Ed	
TOTAL		**132**
Concentration: Biotechnology		
Required Courses		
BIOL 3200K	Genetics	4
BIOL 3300K	Cellular & Molecular Biol	4
BIOL 3500K	Ecology	4
BIOL 4200	Evolution	3

BIOL 4000	Senior Seminar	2
BIOL 3340K	Microbiology	4
BIOL 4100	Philosophy & Ethics of Biol	3
Additional Requirements H1		
CHEM 2401K	Organic Chemistry I	4
PHYS 1111K/2211K	Intro Physics I	4
Electives H2		
Choose from courses numbered 3000 and above from biology and other disciplines.,		
Electives H3		13
Choose from courses numbered 1000 and above from biology and other disciplines. The following courses are strongly encouraged: [1]		
CHEM 2402K	Organic Chemistry II	
PHYS 1112K	Intro Physics II	
MATH 1501	Calculus I	
MATH 1502	Calculus II	
TOTAL		**120-124**
Concentration: Environmental Biology		**24**
BIOL 3200K	Genetics	4
BIOL 3300K	Cellular & Molecular Biol	4
BIOL 3500K	Ecology	4
BIOL 4200	Evolution	3
BIOL 4000	Senior Seminar	2
BIOL 4905	Undergrad Research Biology	2-4
Five additional semester hours in biology courses numbered 3000 and above		
Additional Requirements H1		**8**
CHEM 2401K	Organic Chemistry I	4
PHYS 1111K	Intro Physics I	4
Electives H2		**15**
Choose from courses numbered 3000 and above from biology and other disciplines		15
Electives H3		**17**
Select three of the following:		
ENVS 2202	Environmental Science	3
SUST 2204	Introduction to Sustainability	3
CHEM 2300K	Quantitative Chemical Analysis	4
Choose from courses numbered 1000 and above from biology and other disciplines. The following courses are strongly encouraged: [1]		13
CHEM 2402K	Organic Chemistry II	
PHYS 1112K	Intro Physics II	
MATH 1501	Calculus I	
MATH 1502	Calculus II	
Program Electives		12
Students select at 12 credit hours. Courses may be counted in area in the curriculum in which they are eligible for credit. Students could reasonably fit these into the core (statistics), general biology requirements (any courses numbered 3000 or above) or into the Electives H3, mentioned above (any of these courses).		
BIOL 3510K	Conservation Biology	
BIOL 3560K	Oceanography	
BIOL 3570K	Limnology	
ENVS 2200	Environmental Policy, Governan	
ENVS 3000K		
GEOL 2121K	Natural Hazards	
GEOL 3603	Environmental Geology	
MATH 1401	Elementary Statistics	

[1] Additional hours may be required if CHEM 2401K Organic Chemistry I and PHYS 1111K Intro Physics I are used in the Field of Study.