

BIOLOGY (B.S.)

Students majoring in Biology (B.S.) may not pursue the Biology (B.A.) or Biotechnology (B.S.) as Dual Major / Dual Degree, Second Baccalaureate degree.

The Bachelor of Science (B.S.) in Biology provides a strong foundation in the biological sciences and includes a solid background in chemistry, math, and physics. Graduates are prepared for both post-graduate employment and continuing education in professional and graduate programs. The B.S. degree includes four concentrations: Marine Biology, Microbiology, Organismal Biology and Ecology, and Pre-Professional Biology. The concentrations share a common core of required biology courses that are foundational and also include concentration specific requirements. Each concentration offers students a diverse palette of electives and requires an individualized research and presentation experience that emphasizes communication and critical thinking skills. Graduates are prepared for immediate entry into the job market or continuing education in graduate or professional schools.

Concentrations

- Marine Biology Concentration
- Microbiology Concentration
- Organismal Biology and Ecology Concentration
- Pre-Professional Biology Concentration

Program Progression and Additional Graduation Requirements

For timely degree completion, students must complete all program milestones. The following actions occur when milestones are missed: first occurrence—advising hold and counseling regarding progression requirements; second occurrence—counseling and change to a major outside of the Department of Biology or Department of Chemistry and Physics that is more appropriate to student goals and academic performance. Appeals are handled through the relevant department. The decision of the appeal committee is final. Program milestones include the following:

- BSC 1010C General Biology with Lab I or BSC 1011 General Biology II/BSC 1011L General Biology II Laboratory minimum grade of C completed one calendar year from admission as first time in college (FTIC) or 30 credits earned, whichever is earlier.
- BSC 1010C General Biology with Lab I and BSC 1011 General Biology II/BSC 1011L General Biology II Laboratory minimum grade of C completed by end of fourth semester (including summers) from admission as FTIC or 45 credits earned, whichever is earlier.
- PCB 3023C Cell Biology, PCB 3043C General Ecology or PCB 3063C Genetics minimum grade of C completed by end of sixth semester (including summers) from admission as FTIC or 60 credits earned, whichever is earlier.

Transfer students may declare the major after they have completed BSC 1010C General Biology with Lab I, BSC 1011 General Biology II, and BSC 1011L General Biology II Laboratory with grades of C or better in each course. Transfer students must complete PCB 3023C Cell Biology, PCB 3043C General Ecology or PCB 3063C Genetics with a grade of C or better within three semesters (including summer) of declaring the major.

In addition to the program requirements, students must:

- Complete a minimum of 120 credits.
- Complete a minimum of 48 of the 120 credits at the upper division (3000 - 4999 level).
- Earn a cumulative GPA of 2.0 for all coursework attempted at FGCU.
- Satisfy the College-Level Skills and foreign language entrance requirements.
- Satisfy the Service-Learning requirement.
- Satisfy the Civic Literacy requirement.
- Satisfy the residency requirement: 30 of the last 60 credits must be completed at FGCU.
- Complete the summer course enrollment requirement.
- Submit an Application for Graduation by the deadline listed in the FGCU Academic Calendar.

Program Requirements

Code	Title	Credits
FGCU General Education Program (https://www.fgcu.edu/academics/undergraduatestudies/generaleducation/)		
To prevent or minimize excess hours, select general education courses that satisfy common prerequisite requirements for your intended major.		
Common Prerequisites		
For this major, common prerequisite courses with an asterisk (*) require prior knowledge and skills demonstrated through degree acceleration programs (e.g., the College Board's Advanced Placement Program [AP], International Baccalaureate Program [IB], College-Level Examination Program [CLEP], Advanced International Certificate of Education Program [AICE]); dual enrollment; placement exam; or college coursework.		
A minimum grade of C is required in each course		
BSC 1010C	General Biology with Lab I (Acceptable Substitute: (BSCX010 and BSCX010L) or BSCX010C or BSCX040C)	4
BSC 1011 & 1011L	General Biology II and General Biology II Laboratory (Acceptable Substitute: (BSCX010 and BSCX010L) or BSCX010C or BSCX040C)	4
CHM 1045 & 1045L	General Chemistry I and General Chemistry I Laboratory (Acceptable Substitute: (CHMX045 and CHMX045L) or CHM045C or (CHMX040 and CHMX041)) ^{*, 1}	4
CHM 1046 & 1046L	General Chemistry II and General Chemistry II Lab (Acceptable Substitute: (CHMX046 and CHMX046L) or CHMX046C)	4
CHM 2210 & 2210L	Organic Chemistry I and Organic Chemistry I Laboratory (Acceptable Substitute: (CHMX210 and CHMX210L) or CHMX210C or (PHYX053 and PHYX053L) or (PHYX048 and PHYX048L))	4
CHM 2211 & 2211L	Organic Chemistry II and Organic Chemistry II Laboratory (Acceptable Substitute: (CHMX211 and CHMX211L) or CHMX211C or (PHYX054 and PHYX054L) or (PHYX049 and PHYX049L))	4

MAC 2311	Calculus I (Acceptable Substitute: MACX311 or MACX233 or MACX253 or MACX281 or MACX241) *, 2	4	MCB 4203C	Pathogenic Microbiology	3
MAC 2312	Calculus II (Acceptable Substitute: MACX312 or MACX282 or MACX234 or STAX023 or STAX024 or STAX321) *, 3	3-4	MCB 4223C	Food Microbiology	3
or STA 2023	Statistical Methods		MCB 4404C	Microbial Physiology	3
Required Courses in the Major		(25 credits)	MCB 4502C	Virology	3
A minimum grade of C is required in each course			PCB 3414C	Behavioral Ecology	3
BSC 4910C	Senior Project I: Research (capstone)	2	PCB 3422C	Population Ecology	3
or BSC 4944C	Senior Project I: Internship		PCB 3673C	Evolutionary Biology	3
BSC 4911	Sr Project II: Presentation (capstone)	1	PCB 3703C	Human Physiology	4
IDS 3300	Foundations of CivicEngagement	3	PCB 3723C	Comparative Animal Physiology	3
PCB 3023C	Cell Biology	4	PCB 3731	Medical Cannabis	3
PCB 3043C	General Ecology	3	PCB 4233C	Immunology	3
PCB 3063C	Genetics	4	PCB 4237C	Advanced Immunology	3
PHY 2048 & 2048L	General Physics I and General Physics I Laboratory 4, 5	4	PCB 4253C	Developmental Biology	3
PHY 2049 & 2049L	General Physics II and General Physics II Laboratory 4, 6	4	PCB 4303C	Limnology	3
Restricted Electives in the Major		(10 credits)	PCB 4454C	Biological Statistics	3
A minimum grade of C is required in each course			PCB 4522C	Molecular Genetics	3
Complete 10 credits from the following:			PCB 4656C	Molec Tech in Behavioral Biol	3
ANS 3440	Animal Nutrition	3	PCB 4671C	Evolution in the Omics Age	3
ANT 3586C	Human Evolution	3	PCB 4674C	Reptile & Amphibian Evolution	3
BCH 3023C	Biochemistry	3	PCB 4714	Comparative Immunology	3
BCH 3025C	Analytical Biochemistry	3	PCB 4870	Sensory Biology	3
BOT 3015C	The Lives of Plants and Algae	3	ZOO 3205C	Invertebrate Zoology	3
BOT 3153C	Flora of Southwestern Florida	3	ZOO 3234C	General Parasitology	3
BOT 3712C	Plant Systematics & Evolution	3	ZOO 3464C	Field Herpetology of SWFL	3
BOT 4503C	Plant Physiology	3	ZOO 3713C	Vertebrate Form and Function	3
BSC 1930L	Seminar in Medicine I	1	ZOO 3733C	Human Anatomy	4
BSC 2930L	Seminar in Medicine II	1	ZOO 4233C	Medical & Vet Parasitology	3
BSC 3874	Human Pharmacology	3	ZOO 4272C	Ornithology	3
BSC 4052	Conservation Biology	3	ZOO 4405	Sea Turtle Biology	3
BSC 4312	Marine Biology	3	ZOO 4422C	Herpetology	3
BSC 4422C	Methods in Biotechnology	3	ZOO 4454C	Ichthyology	3
BSC 4430C	Molecular Methods in Biology	3	ZOO 4480C	Mammalogy	3
BSC 4434C	Bioinformatics	3	ZOO 4513C	Animal Behavior	3
BSC 4514	Endocrine Disruptors	1	ZOO 4743C	Neuroscience	3
BSC 4900	Dir Ind Study/Research in Bio 7	1-3	ZOO 4753C	Histology	3
BSC 4930	Special Topics in Biology	2-4	ZOO 4823C	General Entomology	3
BSC 4933	Current Topics in Biology 8	1	Courses used to fulfill requirements in the Restricted Electives cannot also be used to fulfill requirements in the Concentrations.		
BSC 4940	Internship in Biology (must be approved by dept. chair) 7	1	Concentration		(18-19 credits)
ENY 4701C	Forensic Entomology	3	A minimum grade of C is required in each course		
EVR 4920	Current Topics Environ Studies 8	1	Complete one of the following concentrations:		
IDS 4263C	Aspects in Nanotechnology	3	Marine Biology Concentration		
ISC 3120C	Scientific Process	3	Complete the following:		
MAC 2312	Calculus II 9	4	BSC 4312	Marine Biology	3
MCB 3020C	General Microbiology	4	ZOO 3205C	Invertebrate Zoology	3
MCB 3652C	Environmental Microbiology	3	PCB 3723C	Comparative Animal Physiology	3
			Complete 9 additional credits from the list of Restricted Electives in the Major above.		
			Microbiology Concentration		
			Complete the following:		
			MCB 3020C	General Microbiology	4
			Complete 15 credits from the following:		

BCH 3023C	Biochemistry	3
MCB 3652C	Environmental Microbiology	3
MCB 4203C	Pathogenic Microbiology	3
MCB 4223C	Food Microbiology	3
MCB 4404C	Microbial Physiology	3
MCB 4502C	Virology	3
PCB 4233C	Immunology	3
PCB 4237C	Advanced Immunology ¹⁰	3
ZOO 4233C	Medical & Vet Parasitology	3

Organismal Biology and Ecology Concentration

Complete the following:

PCB 3673C	Evolutionary Biology	3
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Complete one course from each of the following two groups:

Group 1 (Botany):

BOT 3015C	The Lives of Plants and Algae	3
BOT 3153C	Flora of Southwestern Florida	3
BOT 3712C	Plant Systematics & Evolution	3
BOT 4503C	Plant Physiology	3

Group 2 (Zoology):

PCB 3414C	Behavioral Ecology	3
PCB 3723C	Comparative Animal Physiology	3
PCB 4674C	Reptile & Amphibian Evolution	3
ZOO 3205C	Invertebrate Zoology	3
ZOO 3234C	General Parasitology	3
ZOO 3464C	Field Herpetology of SWFL	3
ZOO 3713C	Vertebrate Form and Function	3
ZOO 4272C	Ornithology	3
ZOO 4422C	Herpetology	3
ZOO 4454C	Ichthyology	3
ZOO 4480C	Mammalogy	3
ZOO 4513C	Animal Behavior	3
ZOO 4823C	General Entomology	3

Complete 9 additional credits from the list of Restricted Electives in the Major above.

Pre-Professional Biology Concentration

Complete the following:

BCH 3023C	Biochemistry	3
MCB 3020C	General Microbiology	4

Complete 11 additional credits from the list of Restricted Electives in the Major above.

Sustainability Course Graduation Requirement (3 credits)

Select at least 3 credits in sustainability coursework (SCGR Attribute)

Additional Electives

As needed to reach total credits required for the degree

³ For STA 2023 Statistical Methods Prerequisites of MAT 1033 Intermediate Algebra minimum grade of C; or relevant accelerated credit; or placement exam

⁴ If General Physics or College Physics sequences were completed as common prerequisites, Organic Chemistry sequences must be taken to fulfill the required courses in the major; conversely, if Organic Chemistry sequences were taken to fulfill common prerequisites, General Physics or College Physics must be completed.

⁵ or PHY 2053 College Physics I (3) and PHY 2053L College Physics I Laboratory (1)

⁶ or PHY 2054 College Physics II (3) and PHY 2054L College Physics II Laboratory (1)

⁷ A maximum number of 4 credits combined from these courses can be used to fulfill the elective requirement

⁸ A maximum number of 2 credits combined from these courses can be used to fulfill the elective requirement

⁹ Courses taken to satisfy common prerequisites cannot be counted as an elective

¹⁰ Only 3 credits from either Immunology or Advanced Immunology will count towards the 15 credits required for the concentration.

Total Credits Required: 120

¹ Prerequisites of MAT 1033 Intermediate Algebra minimum grade of C then MAC 1105 College Algebra minimum grade of C; or relevant accelerated credit; or placement exam

² Prerequisites of MAT 1033 Intermediate Algebra minimum grade of C then MAC 1105 College Algebra minimum grade of C then MAC 1147 Precalculus minimum grade of C; or relevant accelerated credit; or placement exam