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

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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 Laborator (Acceptable Substitute: (CHMX211 and CHMX211L) or CHMX211C or (PHYX054 and PHYX054L) or (PHYX049 and PHYX049L))	4

MAC 231						
MC 2312 Calculus II (Acceptable Substitute MACX312 or 3 AMCR 2402C MACX224 or STAXI23 or	MAC 2311			MCB 4203C	Pathogenic Microbiology	3
Mac			1)	MCB 4223C	Food Microbiology	3
MACX282 or MACX294 or STAX020 or STAX020 or STAX020 or STAX020 or STAX 2013 Statistical Methods			0.4	MCB 4404C	Microbial Physiology	
STAN,321 \	MAC 2312			MCB 4502C	Virology	3
Pach		STAX321) *, 3	OI .	PCB 3414C	Behavioral Ecology	3
Required Course in the Major (25) central register of controls	or STA 2023			PCB 3422C	Population Ecology	3
			(25	PCB 3673C	Evolutionary Biology	3
Maminimum grade of C is required in each course PCB 3725C Comparative Animal Physiology 3 3 8 8 8 9 9 9 9 9 9 9				PCB 3703C	Human Physiology	4
or BSC 944C Senior Project I: Internship BSC 4911 S 7-Project II: Presentation (capstone) 1 P68 4237C Advanced immunology 3 BSC 4911 S 7-Project II: Presentation (capstone) 1 P68 4237C Advanced immunology 3 PCB 9032C Cell Biology 4 PCB 4253C Developmental Biology 3 PCB 4030C Limnology 3 PCB 4030C Limnology 3 PCB 4253C Developmental Biology 3 PCB 4030C Limnology 3 PCB 403C Limnology 4 PCB 403C Limnology 4 PCB 403C Limno	A minimum grade			PCB 3723C	Comparative Animal Physiology	3
Box 6.994L Senior Project I: Internship PCB 423SC Immunology 3 3 2 2 2 2 2 2 2 2	BSC 4910C	Senior Project I: Research (capstone)	2	PCB 3731	Medical Cannabis	3
Dispage Disp	or BSC 4944C			PCB 4233C	Immunology	3
DRS 3000 Foundations of CivicEngagement 3 PCB 4758C Developmental Biology 3 PCB 4758C Elmology 3 PCB 4758C Elmology 3 PCB 4758C Biological Statistics 3 3 PCB 4758C PCB 4	BSC 4911	Sr Project II: Presentation (capstone)	1	PCB 4237C	Advanced Immunology	3
PCB 3032C Cell Biology	IDS 3300		3	PCB 4253C	Developmental Biology	3
PCB 3043C General Ecology 4 PCB 452C Molecular Genetics 3 PCB 3063C Generat Physics I 4 PCB 452CC Molecular Genetics 3 A 2048L and General Physics I Laboratory ^{4, 5} CCB 465CC Molecular Genetics 3 A 2049L and General Physics II Laboratory ^{4, 6} PCB 4674C Revolution in the Omics Age 3 Restricted Elective In Major (CCB 4870) Comparative Immunology 3 A minimum grader of C is required in each course CCCB 4870 Sensory Biology 3 Complete 10 credits from the following: 200 3464C Field Herpetology of SWFL 3 ANN 3 3440 Animal Nutrition 3 200 3473C Vertebrate Form and Function 3 ANH 3 5480C Human Evolution 3 200 3432 Vertebrate Form and Function 3 BCH 3023C Brobermistry 3 200 3432 Vertebrate Form and Function 3 BCH 3025C Flora for Southwestern Florida 3 200 4272C Omthology 3 BOT 315C Flact segment is Medici	PCB 3023C		4	PCB 4303C	Limnology	3
PHY 2048	PCB 3043C		3	PCB 4454C	Biological Statistics	3
8.7049Ls and General Physics I Laboratory ^{4, 5} PCB 4671C Evolution in the Omics Age 3 PHY 2049 General Physics II 4 PCB 4674C Reptite & Amphibian Evolution 3 Restricted Electives in the Major (10 credits) PCB 4870 Sensory Biology 3 A minimum grade of C is required in each course 200 3293C General Parasitology 3 Complete 10 credits from the following: 200 3293C General Parasitology 3 ANS 3440 Animal Nutrition 3 200 3733C Human Evolution 3 BCH 3023C Biochemistry 3 200 4233C Medical & Vet Parasitology 3 BCH 3025C Analytical Biochemistry 3 200 4223C Medical & Vet Parasitology 3 BCH 3025C Analytical Biochemistry 3 200 4223C Cornitrology 3 BOT 3133C Flora of Southwestern Florida 3 200 4423C Medical & Vet Parasitology 3 BSC 1930L Seminar in Medicine I 1 200 4452C Herpetology 3 BSC 4312 </td <td>PCB 3063C</td> <td>5.</td> <td></td> <td>PCB 4522C</td> <td>Molecular Genetics</td> <td>3</td>	PCB 3063C	5.		PCB 4522C	Molecular Genetics	3
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8 2049L and General Physics II Laboratory ^{4, 6} credits PCB 4714 Comparative Immunology 3 Restricted Electives in the Major new file or credits PCB 4714 Comparative Immunology 3 A minimum grade of C is required in each course 200 3205C invertebrate Zoology 3 Complete 10 credits from the following: 200 3484C General Parasitology 3 ANS 3440 Animal Nutrition 3 200 3733C Vertebrate Form and Function 3 ANS 3400 Animal Nutrition 3 200 3733C Human Anatomy 4 BCH 3023C Biochemistry 3 200 4233C Medical & Ver Parasitology 3 BCH 3023C Analytical Biochemistry 3 200 4423C Ornithology 3 BCH 3025C Flora of Southwestern Florida 3 200 4472C Ornithology 3 BCH 315C Flora of Southwestern Florida 3 200 4472C Herptology 3 BCH 315C Plant Systematics & Evolution 3 200 4452C Herptology 3 BCH 325C Plant Syst	& 2048L			PCB 4671C	Evolution in the Omics Age	3
Restricted Electives in the Major (10 per dil) PCB 4870 Sensory Biology 3 A minimum grade of C is required in each course 200 3205C Invertebrate Zoology 3 Complete 10 credits from the following: ZOO 3234C General Parasitology 3 ANS 3440 Animal Nutrition 3 200 3464C Field Herpetology of SWFL 3 ANS 3440 Aliman Evolution 3 200 3436C Himan Anatomy 4 BCH 3023C Biochemistry 3 200 3433C Human Anatomy 4 BCH 3025C Analytical Biochemistry 3 200 44272C Ornithology 3 BCT 3015C The Lives of Plants and Algae 3 200 44272C Ornithology 3 BCT 3115C Flora of Southwestern Florida 3 200 4425C Herpetology 3 BCT 3712C Plant Systematics & Evolution 3 200 4455C Destrock Authology 3 BSC 2930L Seminar in Medicine I 1 200 4456C Reservation Biology 3 BSC 3874 H	PHY 2049		4	PCB 4674C	Reptile & Amphibian Evolution	3
A minimum grade of C is required in each course 200 3205C Invertebrate Zoology 3 3 3 3 3 3 3 3 3	& 2049L	and General Physics II Laboratory ^{4, 6}		PCB 4714	Comparative Immunology	3
A minimum grade of C is required in each course	Restricted Electiv			PCB 4870	Sensory Biology	3
Complete 10 credits from the following: Z00 3464C Field Herpetology of SWFL 3 ANS 3440 Animal Nutrition 3 200 3713C Vertebrate Form and Function 3 ANT 3586C Human Evolution 3 200 3733C Human Anatomy 4 BCH 3025C Analytical Biochemistry 3 200 4237C Ornithology 3 BCH 3025C Analytical Biochemistry 3 200 4427C Ornithology 3 BCH 3025C Analytical Biochemistry 3 200 4427C Ornithology 3 BCH 3025C Analytical Biochemistry 3 200 4427C Ornithology 3 BCT 3712C Plant Systematics & Evolution 3 200 4450C Herpetology 3 BCT 3130L Seminar in Medicine I 1 200 4450C Mammalogy 3 BSC 2930L Seminar in Medicine I 1 200 4743C Neuroscience 3 BSC 3874 Human Pharmacology 3 200 4753C Histology 3 BSC 4422C Methods in Biotechnology			redits)	Z00 3205C	Invertebrate Zoology	3
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BOT 3153C	BCH 3025C	Analytical Biochemistry	3	Z00 4272C	Ornithology	3
BOT 3712C	BOT 3015C	The Lives of Plants and Algae	3	Z00 4405	Sea Turtle Biology	3
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BSC 4052 Conservation Biology 3 BSC 4312 Marine Biology 3 BSC 4422C Methods in Biotechnology 3 BSC 442C Methods in Biotechnology 3 BSC 4430C Molecular Methods in Biology 3 BSC 4430C Molecular Methods in Biology 3 BSC 4430C Bioinformatics 3 BSC 4434C Bioinformatics 3 BSC 4514 Endocrine Disruptors 1 BSC 4900 Dir Ind Study/Research in Bio 7 BSC 4930 Special Topics in Biology 2-4 BSC 4933 Current Topics in Biology 8 BSC 4940 Internship in Biology (must be approved by dept. chair) 7 BSC 4940 Current Topics Entomology 3 ENY 4701C Forensic Entomology 3 EVR 4920 Current Topics Environ Studies 8 IDS 4263C Aspects in Nanotechnology 3 INC 3120C Scientific Process 3 Microbiology Concentration MAC 2312 Calculus II 9 MCB 3020C General Microbiology 4 MCB 3020C General Microbiology 3 Marine Biology General Entomology 3 Courses used to fullfill requirements in the Restricted Electives acannot also be used to fullfill requirements in the Restricted Electives acannot also be used to fullfill requirements in the Restricted Electives acannot also be used to fullfill requirements in the Restricted Electives acannot also be used to fullfill requirements in the Concentrations. Coursed to fullfill requirements in the Restricted Electives acannot also be used to fullfill requirements in the Concentrations. Concentration A minimum grade of C is required in each course Complete the following: Marine Biology Concentration Complete the following: MCB 3020C General Microbiology 4 MCB 3020C General Microbiology 4	BSC 3874	Human Pharmacology	3	Z00 4753C	Histology	3
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MCB 3020C General Microbiology 4 MCB 3020C General Microbiology 4	ISC 3120C		3			
37	MAC 2312		4	-		
MCB 3652C Environmental Microbiology 3 Complete 15 credits from the following:	MCB 3020C		4			4
	MCB 3652C	Environmental Microbiology	3	Complete 15 cre	dits 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					
Z00 4233C	Medical & Vet Parasitology	3					
Organismal Biolo	Organismal Biology and Ecology Concentration						
Complete the foll	owing:						
PCB 3673C	Evolutionary Biology	3					
Complete one co	urse 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					
Z00 3205C	Invertebrate Zoology	3					
Z00 3234C	General Parasitology	3					
Z00 3464C	Field Herpetology of SWFL	3					
Z00 3713C	Vertebrate Form and Function	3					
Z00 4272C	Ornithology	3					
Z00 4422C	Herpetology	3					
Z00 4454C	Ichthyology	3					
Z00 4480C	Mammalogy	3					
Z00 4513C	Animal Behavior	3					
Z00 4823C	General Entomology	3					
Complete 9 additional credits from the list of Restricted Electives in the Major above.							
Pre-Professional	Biology Concentration						
Complete the foll	owing:						
BCH 3023C	Biochemistry	3					
MCB 3020C	General Microbiology	4					
Complete 11 additional credits from the list of Restricted Electives in							
the Major above.							
Sustainability Co	urse Graduation Requirement	(3					
credits)							
	credits in sustainability coursework (SCGR Attribute)						
Additional Electiv	res						

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

As needed to reach total credits required for the degree

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

- 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.
- or PHY 2053 College Physics I (3) and PHY 2053L College Physics I Laboratory (1)
- or PHY 2054 College Physics II (3) and PHY 2054L College Physics II Laboratory (1)
- A maximum number of 4 credits combined from these courses can be used to fulfill the elective requirement
- 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
- ¹⁰Only 3 credits from either Immunology or Advanced Immunology will count towards the 15 credits required for the concentration.

Total Credits Required: 120