FIU Arts, Sciences & Education
School of Environment, Arts and Society

Department of Biological Sciences

BACHELOR OF SCIENCE
PROGRAM OF STUDY

Forensic Biomolecular Biology Track
(BIOL:BS/FORBIOMOL)

Revised for Fall 2024. Please meet with your advisor each semester for the latest advising sheet, as program requirements, distribution designations and/or prerequisites may change.

PLEASE READ COURSE DESCRIPTIONS in the UNDERGRADUATE COURSE CATALOG (catalog.fiu.edu). Most elective courses have prerequisites that must be taken **BEFORE** you take the elective course. To see your own progress, you can view your Panther Degree Audit from your My FIU. If you need assistance or have any questions, you are encouraged to see an advisor prior to each registration period by making an appointment via the Panther Success Network. All Biology faculty members serve as biology career advisors and have designated advising times. All Science and Math courses must be completed with a grade of "C" or better to satisfy the requirements. ***The Biological Sciences BS has enrollment and completion success markers that will be used to monitor your progress in the major. In cases where students are not making good progress, a change of major may be required.***

The main goals of the Forensic Biomolecular Biology track will be to introduce students to historical and modern DNA typing, human and non-human Forensics, best laboratory practices, applicability of DNA to criminalistics and will also focus on critical thinking with respect to methodology selection as well as the future of forensic science.

LOWER DIVISION PROGRAM

Course		Credits Hours
BSC 2010 & 2010L	General Biology I and Lab	3 + 1
BSC 2011 & 2011L	General Biology II and Lab	3 + 1
CHM 1045 & 1045L	General Chemistry I and Lab	3 + 1
CHM 1046 & 1046L	General Chemistry II and Lab	3 + 1
CHM 2210 & 2210L	Organic Chemistry I and L	4 + 1
CHM 2211 & 2211L	Organic Chemistry II and L	3 + 1
General Physics I	**Choose 1 course:** PHY2053 – Physics without Calculus I (*Uses Algebra and Trigonometry)* PHY2048 – Physics with Calculus II (*Uses Calculus I and II)*	4
PHY2048L	Physics I Lab	1
General Physics II	**Choose 1 course:** PHY2054 – Physics without Calculus I (Uses Algebra and Trigonometry) PHY2049 – Physics with Calculus II (Uses Calculus I and II) CAP 2752(3) - Fundamentals of Data Science*	4 or 3
PHY2049L	Physics II Lab*	1
MAC2311	Calculus I *Students should take MAC 1147 as a prerequisite for MAC 2311. Only students who have started the MAC 1114/MAC 1140 sequence at their previous institution may request permission from the Math Department to get into the next course in the sequence.*	4
MAC2312 or Statistics I and II	**Choose 1 option** Calculus II or STA 2023 - Statistical Methods STA 3123 - Statistics for Behavioral and Social Sciences II *Consult with academic advisor to discuss the possibility of substituting this course with other approved Statistics courses.	4 or 3 3

***Fundamentals of Data Science -CAP 2752** (3) can be used to substitute Physics II. Please check with your advisor to confirm this course falls in the appropriate category on the degree audit; also confirm whether this course is appropriate for career goals.

Note: Calculus I and Statistics I together do not satisfy the requirement
STUDENTS WHO TAKE STATISTICS I AND II MUST ALSO COMPLETE CALCULUS I

Upper Division Program Requirements for Forensic Biomolecular Biology Track (35-39 credits)

Core Courses	Pre-Requisites	Credits
BSC 3848 Science and Career Literacy* *Course designed for biology majors in their junior year, this course prepares students for research, advanced coursework, and post-graduation pathways.*	BSC 2010 + BSC 2011	1
PCB 3043 Ecology	BSC 2010 + BSC 2011	3
PCB 3063 Genetics	BSC 2010	3
PCB 4023 Cell Biology	PCB 3063 + CHM 1046	3
PCB 4674 Evolution	PCB 3043 + PCB 3063	3

*** For students falling in catalog years prior to Fall 2024, BSC 4931- Senior Seminar (prerequisites PCB 3043+3063+4023+4674) can substitute BSC 3848. Discuss with your Academic Advisor.**

Distribution Requirement- One lecture from each of the following areas. Areas B-D have required courses you must select.	Required Course	Pre-Requisites	Credits
A. Ecology Distribution	PCB 4553 Population Genetics (strongly recommended) ***GL***	PCB 3063	3
B. Organismal Diversity Distribution	BSC3400 Wildlife Conservation, Forensic and Crime Science (**required**)	BSC2010 and BSC2011	3
C. Physiology/Biochemistry Distribution	BCH3033 General Biochemistry (**required**)	CHM2211 and BSC2010	3
D. Structure/Development Distribution	BSC4401 Principles of Forensic Biology (**required**)	BSC2010	3

Additional Upper Division Electives	Credits
Two additional Biology Upper Division Electives in any Distribution Area. ***Strongly Recommended****:* • ***ENY 4060 Entomology*** *(pre-requisites BSC 2010 + BSC 2011)* • ***PCB 4524 Molecular Biology*** *[pre-requisites PCB 3063 + (BCH 3033 OR CHM 4304)]*	6

**** See next page for a list of elective courses to choose from***

***** Please note that there may be limited course availability in summer.***

******Refer to course catalog for list of courses not applicable to the upper division Major electives: http://catalog.fiu.edu/***

Internship Requirement	Credits
BSC 4944	0-4

Lab Requirement- Recommended to take concurrently with lecture	Credits
PCB 3063L Genetics Lab	1
BCH 3033L General Biochemistry Lab	1
BSC 4401L Principles of Forensic Biology Lab	1
Additional Upper Division Lab: Choose any lab. *Strongly Recommended: ENY 4060L*	1

ELECTIVES COURSES - DISTRIBUTION REQUIREMENT

Courses listed may be subject to change. Please confirm course availability by searching for courses on your MyFIU.

BSC 4473C - Introduction to Scientific Diving Prerequisites: (OCB3043+lab or PCB3043+lab or CHS4600 or OCE3014), open water diving certification, permission of the instructor, FIU Diving Medical clearance, pass standardized swim test, at least 18 years old. Lab fee of $1,158 applied.

BSC 3941 - Biological Sciences Research Internship: Supervised, practical experience in a professional, laboratory or field setting in which biologists may work. Instructor permission is required. This does **NOT** fulfill any lab or elective lecture requirement for Biology Majors or Minors.

The following **Biology BA courses are NOT applicable to Biology BS** students: BCH3034 and BSC2077. The non-major courses of BSC2085+L and BSC2086+L are also NOT applicable to Biology BS majors.

BSC 4481 & BSC 4482: May count as upper division Biology electives for the FBB Track only. These courses do not count in any other Biology BS, Marine Biology, Biology BA program/track or for the Biology/Marine Bio Minors.

The following are **Upper Division Biology labs** with no lecture component:

- BSC 3441L - Phage Genomics Lab (not available for students that previously took BSC 3994L- Phage Genomics Lab) (Prerequisites: BSC 2010 and BSC 2010L)
- BSC 3456L - Python for Biologists Lab (not available for students that previously took BSC 3993L - Python Lab) (Prerequisites: BSC 2010, BSC 2011)
- BSC 3466L - Make Your Mutant (Corequisite: PCB 3063 or BCH 3033)
- BSC 4450L - Computational Biology Lab of Emerging Infectious Disease (not available for students that previously took BSC 4996L - Computational Biology Lab of Emerging Infectious Disease) (Prerequisites: PCB 3063 or BCH 3033)
- BSC 4990L - SEA GENES (Prerequisites: Instructor Consent Required)

A. Ecology Distribution	
Select at least one of the following lecture options:	**Prerequisites**
BOT4601 – General Plant Ecology (3)	PCB3043
BOT4601L - General Plant Ecology Lab (1)	BOT4601
BSC4303 – Biogeography (3)	PCB3043, PCB4674
BSC4304 - Environments of the Past (3)	
BSC4363 - Biodiversity in the Caribbean Basin (3)	BSC2010, BSC2011
MCB4603 - Microbial Ecology (3)	MCB 3020
MCB4603L - Microbial Ecology Lab (1)	MCB 3020+L, MCB4603
OCB3043 - Marine Biology & Oceanography (3)	BSC2010, BSC2011
OCB3043L - Marine Biology & Oceanography Lab (1)	OCB3043
OCB3075C - Mariculture for Conservation and Restoration (4)	BSC2011
OCB3264 - Coral Reef Biology (3)	OCB3043
OCB4004 - Biological Oceanography at Sea I (3)	
OCB4005C - Biological Oceanography at Sea II (4)	OCB4004
OCB4070 - Coastal Marine Conservation (3)	OCB3043 or PCB3043
OCB4104C - Field Methods in Marine Ecology (4)	OCB3043 or PCB3043
OCB4633 - Marine Community Ecology (3)	PCB3043
OCB4711 - Fisheries Science (3)	BSC2010, BSC2011
PCB3374 - Tropical Ecology (3)	PCB3043
PCB4301 - Freshwater Ecology (3)	PCB3043

PCB4401 - Global Change Ecology: How humans changed the face of Earth (3)	PCB3043
PCB4403C - Urban Vector Biology (4)	BSC 2010+L, BSC2011+L
PCB4414 - Behavioral Ecology (3)	PCB3043
PCB4452 - Introduction to Wetland Ecology and Management (3)	PCB3043
PCB4462C - Introduction to Landscape Ecology with GIS (4)	BSC2010, BSC2011, PCB3043
PCB4467C - Marine Protected Areas (4)	BSC2010 and BSC2011
PCB4553 - General Population Genetics (3)	PCB3063
PCB4673 - Evolutionary Ecology (3)	PCB3043, PCB3063
PCB4932 - Topics in Ecology (3)	BSC2010+L, BSC2011+L
ZOO4513 - Animal Behavior (3)	BSC2010, BSC2011
ZOO4513L - Animal Behavior Laboratory (2)	ZOO4513

B. Organismal Diversity Distribution	
Select at least one of the following lecture options:	**Prerequisites**
BOT3154 - Local Flora (3)	BOT1010 or BSC2011, BOT3154L
BOT3154L - Local Flora Lab (1)	BOT1010 or BSC2011, BOT3154
BOT3663 - Tropical Botany (3)	BSC2011
BOT3810 - Economic Botany (3)	BSC2011 or BOT1010
BOT4402 - Marine Botany (3)	BSC2011
BOT4404C – Phycology (4)	BSC2010, BSC2011
BOT4404L - Phycology Lab (1)	BSC2010, BSC2011, BOT4404
BOT4684 - Taxonomy of Tropical Plants (3)	BOT3154 or BOT3663
BOT4684L - Taxonomy of Tropical Plants Lab (1)	BOT4684
BSC3400 - Wildlife Conservation, Forensic and Crime Science (3)	BSC2010, BSC2011
BSC4205 - Topics in Organismal Diversity (3)	BSC2010+L, BSC2011+L
BSC4434 - Bioinformatics for Biologists (3)	BSC2010, BSC2011, PCB3063
BSC4480 - Introduction to Veterinary Medicolegal and Live Animal Forensic Investigations (3)	
ENY4060 – Entomology (3)	BSC2010, BSC2011
ENY4060L - Entomology Lab (1)	ENY4060
MCB3020 - General Microbiology (3)	CHM2210, BSC2010, BSC2011
MCB3020L - General Microbiology Lab (1)	MCB3020
MCB4022 - Diversity of Microbes (3)	MCB3020
OCB4303 - Biology of Marine Mammals (3)	PCB3043 or OCB3043
PCB4676 - Human Evolution (3)	BSC2011 and PCB3063
ZOO3205C - Invertebrate Zoology (4)	BSC1011
ZOO3303 - Vertebrate Zoology (3)	BSC2010+L, BSC2011+L
ZOO3303L - Vertebrate Zoology Lab (1)	ZOO3303
ZOO4234 - General Parasitology (3)	BSC2010, ZOO4234L
ZOO4234L - General Parasitology Lab (1)	BSC2010, ZOO4234
ZOO4454 - Fish Biology (3)	BSC2010, BSC2011, PCB3043
ZOO4462C – Herpetology (4)	BSC2010, BSC2011, PCB3043
ZOO4484 - Primate Biology (3)	BSC2010, BSC2011
ZOO4484L - Primate Biology Lab (1)	ZOO4484

C. Physiology/Biochemistry Distribution	
Select at least one of the following lecture options:	**Prerequisites**
BCH3033 - General Biochemistry (3)	CHM2211, BSC2010
BCH3033L - Gen. Biochemistry Lab (1)	CHM2211, BSC2010, BCH3033

BOT4503 - Plant Physiology (3)	BSC2010, BSC2011, CHM1045, CHM1046
BOT4503L - Plant Physiology Lab (1)	BOT4503
BSC4443 - Functional Genomics and Proteomics (3)	PCB3063
MCB4503 – Virology (3)	CHM2210, PCB3063
PCB3702 - Intermediate Human Physiology (3)	BSC2010 or BSC2011
PCB3702L - Intermediate Human Physiology Lab (1)	BSC2010 or BSC2011, PCB3702
PCB3703 - Human Physiology I (3)	BSC2010
PCB3703L - Human Physiology Lab I (1)	PCB3703
PCB3704 - Human Physiology II (3)	BSC2010
PCB3704L - Human Physiology Lab II (1)	PCB3704
PCB4232 – The Biology of Acquired Immune Deficiency Syndrome (AIDS) (3)	BSC2010, BSC2011, CHM1045, CHM1046
PCB4233 – Immunology (3)	PCB3063
PCB4234 - Biology of Cancer (3)	PCB3063, PCB3043
PCB4524 - Molecular Biology (3)	PCB3063, (BCH3033 or CHM4304)
PCB4524L - Molecular Biology Lab (1)	PCB4524
PCB4717 - Topics in Physiology/Biochemistry (3)	BSC2010+L, BSC2011+L
PCB4723 - Animal Physiology (3)	BSC2010, BSC2011
PCB4724 - Comparative Physiology (3)	BSC2010, BSC2011, CHM2210
PCB4776 - Physiological and Behavioral Ecology of Marine Animals (3)	BSC2010, BSC2011, PCB3043
PCB4805 – Endocrinology (3)	BSC2011, one physiology course
PCB4810 - Biology of Stress (3)	BSC2010, BSC2011
ZOO4744 – Neurobiology (3)	BSC2010, BSC2011
ZOO4781 - Sensory Systems in Neurobiology (3)	BSC2010, BSC2011

D. Structure/Development Distribution	
Select at least one of the following lecture options:	**Prerequisites**
BOT3353 - Morphology of Vascular Plants (3)	BSC2010
BOT3353L - Morphology of Vascular Plants Lab (1)	BOT3353
BSC4401 - Principles of Forensic Biology (3)	BSC2010
BSC4401L - Principles of Forensic Biology Lab (1)	PCB3063, BSC4401
BSC4422 - Biotechnology: Applications in Industry, Agriculture and Medicine (3)	
BSC 4422L - Biotechnology Laboratory (1)	BSC4422
PCB3660 - Sex, Gender, and Orientation: A Biological Perspective (3)	BSC2010, BSC2011
PCB4133 - Topics in Structure/Development (3)	BSC2010+L, BSC2011+L
PCB4253 - Developmental Biology (3)	PCB3063 or BCH3033
PCB4561 – Epigenetics (3)	BSC1011, PCB3063
PCB4663 - General Human Genetics (3)	PCB3063
ZOO3603 – Embryology (3)	BSC2010+L, BSC2011+L
ZOO3603L - Embryology Lab (1)	ZOO3603
ZOO3713C - Comparative Vertebrate Anatomy (4)	BSC2010, BSC2011
ZOO3731 - Human Anatomy (3)	(BSC2010, BSC2023, MCB2000, or HSC3549), & ZOO3731L
ZOO3731L - Human Anatomy Demonstration (1)	ZOO3731
ZOO3753 – Histology (3)	BSC2010, BSC 2011, ZOO 3753L
ZOO3753L - Histology Lab (1)	BSC2010, BSC 2011, ZOO3753
ZOO4733 - Survey of Regional Anatomy (3)	BSC2011+L, CHM1046+L, (PHY2048 or PHY 2053)
ZOO4743C – Neuroscience (4)	BSC2010, BSC2011, CHM2211

Other graduation requirements:

Updated 03/2026

University Requirements

- ☐ UCC –University Core Curriculum (Note: Transfer students with an AA degree from a Florida College System or other Florida State University are exempt from the UCC).
- ☐ FLENT/FLEX Foreign Language requirement
- ☐ Summer Enrollment: Students entering the University with fewer than 60 hours must complete 9 hours of coursework during the summer semester
- ☐ Civic Literacy Requirement
- ☐ Global Learning Requirement (consider using upper division courses here)

For more information on these requirements, please visit: https://transfer.fiu.edu/transfer-101/guides-resources/graduation-requirements/index.html

- ☐ 120 Total credit hours required

College of Arts, Sciences & Education Requirements

- ☐ 45 Upper Division hours required
- ☐ 9 Credit hours of courses outside the major required within the last 60 hours of enrollment

Success Markers are guideposts that help students remain on track for graduation. The Biological Sciences Department has identified important courses in the major that indicate you are on track for successful degree completion.

- 30 credits- Complete MAC 1105 (or higher) with a C
- 30 credits- Complete CHM 1045/CHM 1045L with a C
- 45 credits- Complete MAC 1147 (or higher) with a C
- 45 credits- Complete BSC 2010/2010L or BSC 2011/2011L with a C or better
- 45 credits- Enroll in CHM 1046/1046L
- 60 credits- Enroll in CHM 2210/L or PHY 2048 (or PHY 2053)/PHY 2048L
- 75 credits- Pass CHM 2210/L **and** PHY 2048 (or PHY 2053)/2048L with a C or better
- 75 credits- Enroll in CHM 2211/L **and** PHY 2049 (or PHY 2054)/PHY 2049L

In cases where students are not making good progress, a change of major may be required.

Minor in Biology: The requirements to complete a Minor in Biology can be found here: https://case.fiu.edu/advising/case-minor/biology-minor.pdf