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

Department of Biological Sciences

BACHELOR OF ARTS PROGRAM OF STUDY

(BIOL:BA)

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.

LOWER DIVISION PROGRAM

- ☐ 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).
- ☐ GLOBAL LEARNING REQUIREMENT at Foundation Level and In-field/Discipline Specific Level (consider using upper division courses here)
- ☐ Students entering the University with fewer than 60 hours must complete 9 hours of coursework during the summer semester
- ☐ Foreign Language requirement**s** (see page 2)
- ☐ **General Science Requirements** (also called Common Prerequisites)

General Science Courses	FIU *( ) = credit hours*	BC or MDC equivalent	UM Equivalent
☐ General Biology I and II	BSC 2010(3)+Lab(1) BSC 2011(3)+Lab(1)	BSC 2010+Lab or BOT 1010+Lab BSC 2011+Lab ZOO 1010+Lab	BIL 150 +151Lab BIL 160 + 161Lab
☐ General Chemistry I and II	CHM 1045(3)+Lab(1) CHM 1046(3)+Lab(1)	CHM 1045+Lab or CHM 1040+Lab CHM 1046+Lab CHM 1041+Lab	CHM 111 + 113Lab CHM 112 + 114Lab
☐ General Physics I	PHY 2053(4) using algebra and trigonometry or PHY 2048(4) using Calculus 1	PHY 2053 PHY 2048	PHY 101
☐ Mathematics - Students must complete sub-requirements (A) and (B)			
(A) Pre-Calculus Algebra and Trigonometry ***Students should take MAC 1147. Only students who have started the MAC1114/MAC1140 sequence at their previous institution, may request permission from the Math Department to get into the next course in the sequence.***	MAC 1147 (4) or MAC 2311	MAC 1147 or MAC 2311	MTH 105 or MTH 108 MTH 111 or MTH 131
(B) Statistics I	STA 3111(3) or STA 2122(3)	 STA 2023	

UPPER DIVISION PROGRAM (≈ 28 credits)

☐ Required Courses	Prerequisites	Credits	
☐ BSC 3848 Scientific Literacy	BSC 2010 & BSC 2011	1	Being offered Summer and Fall 2023
☐ BCH 3034 Cellular Chemistry	BSC 2010, CHM 1045 & CHM 1045L	3	Being offered Summer and Fall 2023
☐ PCB 3043 Ecology (L*)	BSC 2010 + 2011	3	
☐ PCB 3063 Genetics (L*)	BSC 2010	3	
☐ PCB 4674 Evolution	PCB 3043 + PCB 3063	3	
☐ BSC 4931 Senior Seminar	PCB 3043, PCB 3063, and PCB 4674, and PCB 4023 or BSC 3848, or OCP 3002) (permission to enroll may be required)	1	
		14	

☐ **Upper Division Biology Electives** – 12 credits

Students must complete 4 lecture courses from the acceptable Upper Division Biology Electives maintained by the Biology Department. The 4 lecture courses may be chosen at the student's discretion from courses in any of the distribution areas.

The following courses are not allowed as Biology Electives: Student Research Labs (BSC 3915, 4914, and 6916); Workshop Biology Labs (BSC 5928, PCB 5238, BSC 6926, etc.); Cooperative Education credits (BSC 3949); Biology of Women (BSC 3027); Research Methods in Biological Sciences (BSC 3910); and courses for non-science majors (BOT 1010, PCB 2061, PCB 2099, MCB 2000, BSC 2023, EVR 3013, OCB 2000, and OCE 3014).

☐ **Laboratory Requirement** - 2 Upper Division Labs (2cr labs=1 lab) — 2 or more

Please take labs that support upper division courses needed for your career goals

☐ **Track Specific Courses-** (18) credits. Please see page **4** for track lists

Students MUST meet with Advisor to declare Track.

Six courses in the specified track must be completed.

Alternatively, students can complete a minor offered by a different department. If additional credits are needed to complete a minor, students can use as General Elective credits towards 120 total.

College of Arts, Sciences, and Education Requirements

☐ Credit hours of courses outside the major required within the last 60 hours of enrollment — 9
Note: Take these 9 credit hours from upper division courses to help you reach the 45 hours needed for graduation Ex. 28 + 9 = 37 upper division credit hours

☐ Upper Division hours required — 45

Total credit hours required for graduation (University Requirement)

☐ 120

**Refer to course catalog for list of courses not applicable to the upper division Major electives.

ELECTIVES COURSES - DISTRIBUTION REQUIREMENT – Summer and Fall 2023

(L*)-Indicates that lab is being offered this term along with the lecture

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 non-major courses of BSC2085+L and BSC2086+L are also **NOT** applicable to Biology BA majors.

PCB 4023 - Cell Biology Prerequisites: PCB3063 and CHM1046 Course applicable to Upper Division Biology Electives for Biology BA. Lecture and lab available **Spring 2023**.

- **BSC 4450L - Computational Biology Lab of Emerging Infectious Disease (not available for students that already took BSC 4996L - Computational Biology Lab of Emerging Infectious Disease) (**Prerequisites: PCB 3063 or BCH 3033): Being offered **Summer and Fall 2023**.
- **BSC 3466L - Make Your Mutant** (Corequisite: PCB 3063 or BCH 3033): Being offered **Fall 2023.**

A. ECOLOGY

		Summer 2023	**Prerequisites (Grades of C or higher in)**
BSC	4363	Biodiversity in the Caribbean Basin	BSC2010, BSC2011
PCB	4467C	Marine Protected Areas ***GL***	BSC2010 and BSC2011
		Fall 2023	**Prerequisites (Grades of C or higher in)**
BOT	4601	General Plant Ecology ***GL***	PCB3043
BSC	4303	Biogeography	PCB 3043 and PCB 4674
BSC	4363	Biodiversity in the Caribbean Basin	BSC2010, BSC2011
OCB	3043	Marine Biology Oceanography (*L)	BSC2010, BSC2011
OCB	3075C	Mariculture for Conservation and Restoration	

OCB	4104C	Field Methods in Marine Ecology	OCB3043 or PCB3043
OCB	4633	Marine Community Ecology	PCB3043
PCB	3374	Tropical Ecology	PCB3043
PCB	4301	Freshwater Ecology	PCB3043
PCB	4401	Global Change Ecology: How humans changed the face of Earth	PCB3043
PCB	4932	Topics in Ecology: Species Distribution Modeling: Understanding the past and future of biodiversity with machine learning	BSC2010, BSC2010L and BSC2011, BSC2011L

B. ORGANISMAL DIVERSITY

		Summer 2023	**Prerequisites (Grades of C or higher in)**
MCB	3020	General Microbiology (*L)	CHM2210, BSC2010, and BSC2011
ZOO	4234	General Parasitology (*L)	BSC 2010, Corequisite: ZOO4234L
		Fall 2023	**Prerequisites (Grades of C or higher in)**
BOT	3663	Tropical Botany	BSC2011
BOT	4404	Phycology (*L)	BSC2010, BSC2011
BSC	4434	Bioinformatics for Biologists	BSC2010, BSC2011, PCB3063
MCB	3020	General Microbiology (*L)	CHM2210, BSC2010, and BSC2011
OCB	4303	Biology of Marine Mammals	PCB3043 or OCB3043
ZOO	3205C	Invertebrate Zoology	BSC1011
ZOO	4234	General Parasitology (*L)	BSC 2010, Corequisite: ZOO4234L

C. PHYSIOLOGY/BIOCHEMISTRY

		Summer 2023	**Prerequisites (Grades of C or higher in)**
BCH	3033	General Biochemistry (*L)	CHM2211, BSC2010
CHM	4304	Biological Chemistry I (*L)	CHM2211, CHM2211L
MCB	4503	Virology	CHM2210, PCB3063
PCB	4233	Immunology	PCB3063
PCB	4232	Biology of Cancer	PCB3063, PCB3043
		Fall 2023	**Prerequisites (Grades of C or higher in)**
BCH	3033	General Biochemistry (*L)	CHM2211, BSC2010
BOT	4503	Plant Physiology (*L)	BSC2010, BSC2010L, BSC2011, CHM2210
CHM	4304	Biological Chemistry I (*L)	CHM2211, CHM2211L
PCB	3702	Intermediate Human Physiology (L*)	BSC2010 or BSC2011
PCB	4232	Biology of AIDS	BSC2010, BSC2011, CHM1045, CHM1046
PCB	4233	Immunology	PCB3063
PCB	4717	Topics in Physiology/Biochemistry: Biochemical Ecology	BSC2010, BSC2010L and BSC2011, BSC2011L
PCB	4810	Biology of Stress	BSC2010 and BSC2011
ZOO	4744	Neurobiology	BSC2010 and BSC2011

D.STRUCTURE/DEVELOPMENT

		Summer 2023	**Prerequisites (Grades of C or higher in)**
BSC	4401	Principles of Forensic Biology (*L)	BSC2010
BSC	4422	Biotechnology: Applications in Industry, Agriculture and Medicine (*L)	
PCB	4253	Developmental Biology	PCB3063 or BCH3033
PCB	4663	General Human Genetics	PCB3063
ZOO	3731	Human Anatomy (*L)	BSC 2010 or BSC 2023 or PCB 2099 or MCB 2000 or HSC 3549 Corequisite: ZOO3731L
ZOO	4733	Survey of Regional Anatomy	BSC2011, BSC2011L, CHM1046, CHM1046L, PHY2054
		Fall 2023	**Prerequisites (Grades of C or higher in)**
BSC	4422	Biotechnology: Applications in Industry, Agriculture and Medicine (*L)	

PCB	4253	Developmental Biology	PCB3063 or BCH3033
PCB	4663	General Human Genetics	PCB3063
ZOO	3713C	Comparative Vertebrate Anatomy	BSC2010, BSC2011
ZOO	3731	Human Anatomy (*L)	BSC 2010 or BSC 2023 or PCB 2099 or MCB 2000 or HSC 3549 Corequisite: ZOO3731L
ZOO	4733	Survey of Regional Anatomy	BSC2011, BSC2011L, CHM1046, CHM1046L, PHY2054
BSC	4401	Principles of Forensic Biology (*L)	BSC2010

Transfer Students

Transfer students with >60 credits, must take half of their upper division credits at FIU. A **maximum** of 60 lower division semester hours taken at a two-year or a four-year institution may be counted toward the degree. A maximum of 30 upper division semester hours taken at a senior institution may be counted toward the degree. Lower division courses in excess of 60 semester hours may serve to meet specific course requirements for the degree, but credit hours represented by these courses **will not** reduce the number of credit hours to be completed at the University.

Foreign Language requirement

FIU Flent/Flex requirement – 2 years of high school foreign language satisfy Flent/Flex. All students graduating from Florida International University must meet the state-mandated foreign language requirement. The FLENT/FLEX requirement can be met if students have completed two years of the same foreign language in high school prior to their admission to FIU.

Transfer students may also qualify for an exemption with ANY of the following:

- Appropriate accelerated credit mechanisms (e.g., AP, A-Level, IB, CLEP)
- Transfer credits from a post-secondary institution,
- Two consecutive semesters of one language (levels 1 & 2)
- One intermediate or advanced level language course
- A passing TOEFL score for admission to the University
- Foreign Credentials (e.g High School transcript from Non-English speaking country)
- A previously earned Bachelor's degree (regionally accredited)
- An AA degree earned at a FL public institution prior to 1989

Students that do not qualify for any of the above exemptions must complete the foreign language requirement here at FIU, using one of the following options:

- Two introductory level courses (levels 1 & 2)
- One intermediate or advanced level course
- CLEP (Spanish, French and German only)
- FLATS (visit https://info.flats.byu.edu/list-of-languages/ to view the complete list of FLATS exams)

Civic Literacy Requirement

The Civic Literacy Competency Requirement is a statewide mandate that applies to degree-seeking undergraduate students initially entering a Florida State University System (SUS) or Florida College System (FCS) institution in the 2018-19 academic year and thereafter. The requirement has been updated for degree-seeking undergraduate students initially entering the SUS or FCS in the 2021-2022 academic year (Summer B term) and thereafter.

There are now 3 Cohorts of students:

Students Included in Cohort	Civic Literacy Competency Requirement
• Cohort 1: Students first entering the SUS or FCS prior to fall 2018	None
• Cohort 2: Students first entering the SUS or FCS in fall 2018 summer A 2021	Complete a course or exam
• Cohort 3: Students first entering the SUS or FCS in summer B 2021 and thereafter	Complete both a course and exam

Notes:

1. As you can see from the above table, students in Cohort 3 (initially entering an SUS or FCS Summer B 2021 and thereafter) must now complete both a course and an exam
2. Students in Cohort 2 need only to complete the course or exam
3. Students in Cohort 1 do not need to complete the Civic Literacy Competency requirement

To view a table that provides details on which options meet which competency, please visit: https://transfer.fiu.edu/transfer-101/graduation-requirements/

Transfer Students

The Civic Literacy requirement applies to transfer students who are initially entering a Florida State University System (SUS) or Florida College System (FCS) institution starting in the 2018-19 academic year. Students who transfer from an institution outside the SUS or FCS starting in the 2018-19 academic year, and have not satisfied this requirement, must do so prior to graduation. Transfer courses outside those approved and offered by SUS or FCS institutions may not be used to satisfy this requirement. Students who earned an Associate in Arts (AA) degree from a Florida SUS or FCS institution prior to the 2018-19 academic year are not required to satisfy this requirement because they are not initially entering the Florida SUS or FCS in the 2018-19 academic year.

Minor in Biology

- BSC 2010/BSC 2010L and BSC 2011/BSC 2011L
- One upper-division course (3000-level or above) in three of the following areas: **A. Ecology, B. Organismal Diversity, C. Physiology/Biochemistry, or D. Structure/Development**
- One of these elective courses must be at the 4000 level or higher
- One course must include a lab
- Minimum 10 upper-division biology credits

*The following courses also satisfy the areas listed above: **A.** PCB 3043 Ecology, **B.** PCB 4674 Evolution, **C.** PCB 4023 Cell Biology, **D.** PCB 3063 Genetics

Pre-Medical, Dental, Optometry, Physician Assistant, Pharmacy, Podiatry and Veterinary Curricula
Students who have fulfilled the requirements for the BS in Biology will also have satisfied most of the course requirements for admission to the above mentioned professional schools. Interested students should consult a Pre-Medical Advisor (DM 337; 305-348-0515; preprofc@fiu.edu) for arranging a curriculum to enhance their potential to gain admission to these professional schools.

Enrollment Status – for continuous enrollment in a semester, dropping courses can change enrollment status. Contact the Registrar for more details. Contact Financial Aid for various regulations.
Full time = 12 to 18 credits. Normal load = 15 credits; registration for more than 18 credits requires Dean Designee Approval.
Half time = 6-11 credits; Less than Half time = 5 credits or less.

Track Specific Courses – Six courses in the specified track must be completed

Allied Health Profession Track		
ANT 3462	Medical Anthropology	3
ANT 4480	Anthropological Approaches to Global Health	3
APK 3110	Exercise Physiology	3
CAP 2752	Fundamentals of Data Science	3
CLP 4146	Psychopathology	3
DEP 2000	Human Growth and Development: Introductory Developmental Psychology	3
ECO 4504	Intro to Public Finance	3
HIS 4492	History of U.S. Health Policy	3
PAD 3034	Policy Development and Implementation	3
PCB 3703	Human Physiology I	3
PCB 3703L	Human Physiology I Lab	1
PCB 3702	Intermediate Human Physiology	3
PCB3702L	Intermediate Human Physiology Lab	1
POS 3424	The Legislative Process	3
HSC 3537	Medical Terminology	3
HSC 3549	Clinical Physiology for Health Professionals	3
HSC 4553	Fundamentals of Pathology	3
HUN 2201	Principles of Nutrition	3
PET 3310	Kinesiology	3
PSY 2012	Introductory Psychology	3
ZOO 3731	Human Anatomy	3
ZOO 3731L	Human Anatomy Demonstration	1

Health Policy, Environmental Policy and Pre-Law Track (HLTENVLAW)		
AMH 3630	Environmental History of the United States	3
CAP 2752	Fundamentals of Data Science	3
CJL 3512	The Courts	3
CJL 4064	Criminal Justice and the Constitution	3
COM 4462	Conflict Management	3
ECP 3302	Introduction to Environmental Economics	3
ENC 3311	Advanced Writing and Research	3
ENC 3354	Writing as Social Action	3
ENC 3371	Rhetorical Theory and Practice	3
ENC 4331	Writing, Rhetoric, and Community	3
ENC 4930	Special Topics in Composition	3
GEO 4354	Geography of the Global Food System - **GL**	3
INR 4350	International Environmental Politics	3
PAD 3034	Policy Development and Implementation	3
PHI 2100	Introduction to Logic	3
PHI 2103	Critical Thinking	3
PHI 4130	Symbolic Logic	3
POS 3283	The Judicial Process	3
POS 3603	Constitutional Law: Powers	3
POS 3604	Constitutional Law: Limitations	3
POS 4784	Analytic Writing in Political Science	3
REL 3492	Earth Ethics-**GL**	3
SPC 3230	Rhetorical Communication: A Theory of Civil Discourse	3
SPC 3540	Persuasion	3

Science Communication Track (SCICOM)		
CAP 2752	Fundamentals of Data Science	3
COM 3110	Business and Professional Communication	3
ENC 3213	Professional and Technical Writing	3
ENC 3311	Advanced Writing and Research	3
ENC 3363	Writing About the Environment	3
ENC 3416	Writing and New Media	3
ENC 4241	Scientific Writing	3
ENC 4260	Advanced Professional Writing	3
ENC 4357	How To Go Public	3
IDS 3309	How We Know What We Know – **GL**	3
MMC 3121	Writing Fundamentals for Communicators	3
MMC 3650	Media and Sustainability	3
MMC 4936	Special Topics	3
JOU 3314	Environmental Journalism: Communicating Environmental Issues in South Florida	3

Bioentrepreneur Track (BIOENTRP) Students in this track must declare the Business Minor		
ACG 3024	Accounting for Managers and Investors (AC) Prerequisite: Bioentrepreneur Track	3
FIN 3005	Introduction to Business Finance Prerequisite: Bioentrepreneur Track	3
ISM 3012	Introduction to Decision and Information Systems (IS) Prerequisite: Business Minors only.	3
MAN 3022	Introduction to Management Prerequisite: Business Minors	3
MAR 3024	Marketing Fundamentals (ME) Prerequisite: Business Minors or Bioentrepreneur Track Only	3
	Choose one of the following:	
CAP 2752	Fundamentals of Data Science	3
COM 3110	Business and Professional Communication	3
HAS 3111	Introduction to Health Services Systems	3

* Students must meet with advisor to declare their track. All Biology BA Majors should be declared in one of the four tracks. Alternatively, students can complete a minor offered by a different department via the General Biology BA. If additional credits are needed to complete a minor, students can use General Electives credits.