



# Florida International University

## Department of Biological Sciences

### BACHELOR OF SCIENCE PROGRAM OF STUDY

\*Students are encouraged plan their own course selections; **PLEASE READ COURSE DESCRIPTIONS** in the **UNDERGRADUATE COURSE CATALOG**. Most elective courses have prerequisites that must be taken BEFORE you take the elective course. To see your own progress, you can see and print out your own Degree Audit from you My FIU. If you need assistance or have any questions you are encouraged to see an advisor prior to each registration period. Make Advisor appointment through your Dashboard. 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 requirements (see page 4)
- General Science Requirements** (also called Common Prerequisites)

<u>General Science Courses</u>	<u>FIU</u> ( ) = <i>credit hours</i>	<u>BC or MDC equivalent</u>	<u>UM Equivalent</u>
<input type="checkbox"/> 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
<input type="checkbox"/> 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
<input type="checkbox"/> Organic Chemistry I and II	CHM 2210(4)+Lab(1) CHM 2211(3)+Lab(1)	CHM 2210+Lab CHM 2211+Lab	CHM 201 + 205Lab CHM 202 + 206Lab
<input type="checkbox"/> General Physics I and II	PHY 2053(4)+2048L(1) PHY 2054(4)+2049L(1) using algebra and trigonometry or PHY 2048(4)+Lab(1) PHY 2049(4)+Lab(1) using Calculus 1 and 2.	PHY 2053+Lab PHY 2054+Lab  PHY 2048+Lab PHY 2049+Lab	PHY 101 + 106Lab PHY 102 + 108Lab
<input type="checkbox"/> Mathematics - Students must complete sub-requirements (A) <u>and</u> (B)			
(A) Calculus I	MAC 2311(4)	MAC 2311	MTH 111 or MTH 131
(B) Calculus II or Statistics I and II	MAC 2312(4)  STA 3111(3) & 3112(3) Stats designed for Biology students. or STA 2122(3) & 3123(3) Stats designed for Psychology students	MAC 2312	MTH 112 or MTH 132

**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

<input type="checkbox"/> <b>Required Courses</b>	<b>Prerequisites</b>	<b>Credits</b>	
<input type="checkbox"/> PCB 3043 Ecology	BSC 2010 + 2011	3	
<input type="checkbox"/> PCB 3063 Genetics	BSC 2010	3	
<input type="checkbox"/> PCB 4023 Cell Biology	PCB 3063 + CHM 1046	3	
<input type="checkbox"/> PCB 4674 Evolution	PCB 3043 + PCB 3063	3	
<input type="checkbox"/> BSC 4931 Senior Seminar	PCB 3043+3063+4023+4674	<u>1</u>	
		13	
<input type="checkbox"/> <b>6 Upper Division Elective Courses</b> - Distribution Requirement - One Elective lecture course in each of the following Areas**			
	<input type="checkbox"/> A. Ecology Area	3	
	<input type="checkbox"/> B. Organismal Diversity Area	3	
	<input type="checkbox"/> C. Physiology/biochemistry Area	3	
	<input type="checkbox"/> D. Structure/development Area	3	
	+ 2 upper division electives in any of these Areas	<u>6</u>	
		18	
<input type="checkbox"/> <b>Laboratory Requirement</b> - 4 Upper Division Labs (2cr labs=1 lab)	4 or more		Please take labs that support upper division courses needed for your career goals
<b>College of Arts, Sciences, and Education Requirements</b>			
<input type="checkbox"/> Credit hours of courses outside the major required within the last 60 hours of enrollment			
<b>Note:</b> Take these 9 credit hours from upper division courses to help you reach the 45 hours needed for graduation Ex. 35 + 9 = 44 upper division credit hours		9	
<input type="checkbox"/> Upper Division hours required		45	
<input type="checkbox"/> Total credit hours required for graduation (University Requirement)		120	

\*\* See below for a list of ELECTIVE courses to choose from: TAKE ELECTIVES IN FALL and SPRING, **DO NOT COUNT on ELECTIVES being offered in the SUMMER**

\*\*The following courses are not allowed as Biology Electives: Student Research Labs (BSC 3915, 4914, and 6913) Internships credits (BSC3941); and courses for non-science majors (BOT 1010, PCB 2061, PCB 2099, MCB 2000, MCB3007, BSC 2023, EVR 3013, OCB 2003, OCE 3014).

Students interested in Teacher Certification should contact Sonssire Tapanes at [stapanes@fiu.edu](mailto:stapanes@fiu.edu) for the more information about **Biology Secondary Education** track.

## ELECTIVES COURSES - DISTRIBUTION REQUIREMENT – Fall 2017

### A. ECOLOGY

	<b>Fall 2017</b>	<b>Prerequisites (Grades of C or higher in)</b>
BOT 4601	General Plant Ecology	PCB 3043
BSC 4363	Biodiversity in the Caribbean Basin	BSC2010, BSC2011
OCB 3043	Marine Biology Oceanography	BSC2010, BSC2011
OCB 4104C	Field Methods in Marine Ecology	OCB3043 or PCB3043
PCB 3374	Tropical Ecology	PCB3043
PCB 4232	Biology of AIDS	BSC 2010+2011 and CHM 1045+1046
PCB 4414	Behavioral Ecology	PCB3043
PCB 4467C	Marine Protected Areas (also a GL course)	BSC2010 and BSC2011
PCB 4673	Evolutionary Ecology	PCB 3043, PCB3063
PCB 4932	Topics in Ecology- Integrative Biology: Cancer	BSC 2010 + 2011 (with labs)

## B. ORGANISMAL DIVERSITY

		Fall 2017	Prerequisites (Grades of C or higher in)
BOT	3014	Plant Life History	BSC 2011
BOT	3154	Local Flora	BSC 2011 or BOT 1010 (Corequisite: BOT3154L)
BOT	3663	Tropical Botany	BSC2011
BSC	4205	Topics Organism Diversity-Great Ape Conservation	BSC 2010 + 2011 (with labs)
BSC	4434	Bioinformatics for Biologists	BSC 2010+ BSC 2011, and PCB 3063
MCB	3020	General Microbiology	BSC 2010+2011 and CHM 2210+2211
OCB	4303	Biology of Marine Mammals	BSC 2010+2011 and OCB 3043 or PCB3043
ZOO	3205C	Invertebrate Zoology	BSC2011
ZOO	3303	Vertebrate Zoology	BSC 2010 + 2011 (with labs)
ZOO	4114	Principles of Paleobiology	BSC2011
ZOO	4234	General Parasitology	BSC 2010 (ZOO4234L-Corequisite)
ZOO	4462C	Herpetology	BSC2010, BSC2011, PCB3043
ZOO	4484	Primate Biology	BSC 2010+2011

## C. PHYSIOLOGY/BIOCHEMISTRY

		Fall 2017	Prerequisites (Grades of C or higher in)
BCH	3033	General Biochemistry	CHM 2211 + BSC 1010
MCB	4503	Virology	CHM2210 + PCB3063
PCB	3702	Intermediate Human Physiology	BSC2010 or BSC2011
PCB	4233	Immunology	PCB 3063
PCB	4524	Molecular Biology	PCB3063 and (BCH3033 or CHM4304)
PCB	4717	Topics in Phys/Biochem- Physiological and behavioral ecology of marine animals	BSC2010+BSC2011 (with labs)+PCB 3043
PCB	4717	Topics in Phys/Biochem- Sensory Neurobiology	BSC2010+BSC2011 (with labs)
PCB	4724	Comparative Physiology	BSC2010, BSC2011, CHM2210
ZOO	4744	Neurobiology	BSC2010 and BSC2011

## D. STRUCTURE/DEVELOPMENT

		Fall 2017	Prerequisites (Grades of C or higher in)
BOT	3353	Morphology Of Vascular Plants	BSC2011 or permission of the instructor
BSC	4422	Biotechnology	
PCB	4133	Topics in Structure/Development: Molecular Genetics	BSC2010+BSC2011 (with labs)+PCB 3063
PCB	4253	Developmental Biology	PCB3063 or BCH3033
ZOO	3603	Embryology	BSC 2010+2011 with labs.
ZOO	3731	Human Anatomy	BSC 2010 or BSC 2023 or PCB 2099 or MCB 2000 or HSC 3549 (Corequisite: ZOO 3731L)
ZOO	3753	Histology	BSC 2010 + CHM 2210+2211
ZOO	4733	Survey of Regional Anatomy	BSC 2011+2011L+CHM 1046+1046L+PHY 2054

**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.

### **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 requirement for Biology Majors.

## 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)

## Minor in Biology

BSC 2010 and BSC 2011 with labs and three upper division elective courses and an upper division lab (3000-level or above) with one each being in any three of the following four areas: A. Ecology, B. Organismal Diversity, C. Physiology/Biochemistry, or D. Structure/ Development.

Course	Distribution Area (Applies to Minors Only)
PCB 3043 Ecology	Ecology (A)
PCB 4674 Evolution	Organismal Diversity (B)
PCB 4023 Cell Biology	Physiology/Biochemistry (C)
PCB 3063 Genetics	Structure/Development (D)

One of the three elective courses must be at the 4000-level or higher and one must include a lab. Total upper division biology credits must number 10 or more. Grades of "C" or better are required for all courses and the labs.

## 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 331A; 305-348-0515) 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 Approval.

Half time = 6-11 credits; Less than Half time = 5 credits or less.