



# 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 REQUIREMENT at Foundation Level and In-field 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 ( ) = credit hours</u>	<u>BC or MDC equivalent</u>	<u>UM Equivalent</u>
<input type="checkbox"/> General Biology I and II	BSC 1010(3)+Lab(1) BSC 1011(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 1046+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(4) 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"/> Required Courses	<b>Prerequisites</b>	Credits
<input type="checkbox"/> PCB 3043 Ecology	BSC 1010 + 1011	3
<input type="checkbox"/> PCB 3063 Genetics	BSC 1010	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 and Sciences Requirements</b>		
<input type="checkbox"/> Credit hours of courses outside the major required within the last 60 hours of enrollment		
Note: Take these 9 credit hours from upper division courses to help you reach the 48 hours needed for graduation Ex. 35 + 9 = 44 upper division credit hours		9
<input type="checkbox"/> Upper Division hours required		48
<input type="checkbox"/> CAS Foreign Language Requirement (see page 4)		
<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 in the SUMMER**

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

Students interested in Teacher Certification should contact Mr. Pitzer (OE 273B, 304-348—1224) for the **Biology Education Degree**

## ELECTIVES COURSES - DISTRIBUTION REQUIREMENT – for Spring + Summer 2014

### A. ECOLOGY

	<b>Spring 2014</b>	<b>Prerequisites (Grades of C or higher in)</b>
BOT 4401	Plant Conservation Biology	PCB 3043
BSC 4363	Biodiversity of the Caribbean Basin	BSC 1010 + 1011
MCB 4603	Microbial Ecology	MCB 3020 + 3020L
OCB 3043	Marine Biology and Oceanography	BSC 1010 + 1011
OCB 3264	Coral Reef Biology	BSC1011 or Zoology
PCB 4301	Freshwater Ecology	PCB 3043
PCB 4414	Behavioral Ecology	PCB 3043
PCB 4673	Evolutionary Ecology	PCB 3043 + 3063
ZOO 4513	Animal Behavior	BSC 1010 + 1011
	<b>Summer 2014</b>	
PCB 4232	Biology of AIDS	BSC1010+1011, CHM1045+1046

## B. ORGANISMAL DIVERSITY

		Spring 2014	Prerequisites (Grades of C or higher in)
BOT	3014	Plant Life History	BSC 1011
BOT	3663	Tropical Botany	BSC 1011
BOT	3810	Economic Botany	BSC 1011 or BOT 1010
BSC	4434	Bioinformatics for Biologists	BSC 1010+1011 + PCB 3063
MCB	3020	General Microbiology	BSC 1010+1011 + CHM 2210+2211
OCB	4303	Biology of Marine Mammals	BSC1010 + BSC1011 + PCB3043 or OCB3043
ZOO	3205C	Invertebrate Zoology	BSC 1011
ZOO	3303	Vertebrate Zoology	BSC 1010 + 1011 (with labs)
ZOO	4234	General Parasitology	BSC 1010
ZOO	4454	Fish Biology	BSC 1010+ 1011 + PCB 3043
ZOO	4484	Primate Zoology	BSC 1010 + 1011
		<b>Summer 2014</b>	
		No offerings	

## C. PHYSIOLOGY/BIOCHEMISTRY

		Spring, 2014	Prerequisites (Grades of C or higher in)
BCH	3033	General Biochemistry	CHM 2211 + BSC 1010
BSC	4401	Principles of Forensic Biology	BSC 1010
BSC	4443	Functional Genomics and Proteomics	PCB 3063
BSC	4934	Sensory Neurobiology (U10)	<b>*Must register for 3 credits*</b> (see Note Below)
MCB	4502	Virology	CHM 2210
PCB	3702	Intermediate Human Physiology	BSC 1010 or 1011
PCB	3704	Human Physiology 2	BSC 1010 (Continuation of PCB 3703)
PCB	4233	Immunology	PCB3063
PCB	4524	Molecular Biology	PCB 3063 + BCH 3033 or CHM 4304
PCB	4723	Animal Physiology	BSC1010, BSC1011, CHM2211
		<b>Summer, 2014</b>	
PCB	3702	Intermediate Human Physiology	BSC 1010 or 1011
PCB	4805	Endocrinology	BSC 1011 + CHM 2211 + one physiology course

## D. STRUCTURE/DEVELOPMENT

		Spring, 2014	Prerequisites (Grades of C or higher in)
BOT	3353	Plant Morphology	BSC 1010 or 1011
BSC	4934	Animal Design and Movement (U01)	BSC 1010 + 1011+ PHY 2053 + 2054 <b>*Must register for 3 credits*</b> (see Note Below)
PCB	4253	Developmental Biology	PCB 3063 or BCH 3033
PCB	4663	General Human Genetics	PCB 3063
ZOO	3603	Embryology	BSC 1010 + 1011 with labs
ZOO	3731	Human Anatomy	BSC 1010 or BSC 20223 or PCB 2099 or HSC 3549
ZOO	3753	Histology	BSC 1010 + CHM 2010 + 2011
ZOO	4733	Survey of Regional Anatomy	BSC 1011 + 1011L +CHM 1046 + 1046L + PHY 2054
ZOO	4743C	Neuroscience	BSC 1010 + 1011 + CHM 2211.
		<b>Summer, 2014</b>	
ZOO	3731	Human Anatomy	BSC 1010 or BSC 20223 or PCB 2099 or HSC 3549
ZOO	3753	Histology	BSC 1010 + CHM 2010 + 2011
ZOO	4733	Survey of Regional Anatomy	BSC 1011 + 1011L +CHM 1046 + 1046L + PHY 2054

Note: BSC 4934-Topics in Biology may fulfill different Elective Groups depending on the topic of course. Student must register for 3 credits themselves.

## Students Interested in Teaching: Fall, 2013 SCE 3813 Biology Education (1 credit)

### 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 requirements** - You must satisfy the following two requirements:

- 1) FIU Flent/Flex requirement – 2 years of high school foreign language satisfy Flent/Flex
- 2) College of Arts & Sciences (CAS) requirement – With a grade of C or better, the student may meet the requirement by completing
  - a) the second semester of a two semester sequence of a basic language course (Ex. Japanese II)
  - b) any second or third year foreign language course.....or:

The CAS foreign language requirement may also be met by acceptable scores in

- a) the AP exam (minimum score of 4)
- b) the CLEP exam (minimum score: Spanish, 63; French, 59; German, 60) - **Testing Office GL120**
- c) the SAT II exam (minimum score of 699)
- d) any other approved tests

### Minor in Biology

BSC 1010 and BSC 1011 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.

<u>Course</u>	<u>Distribution Area (Applies to Minors Only)</u>
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 331; 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.