



# Florida International University

## Department of Biological Sciences

### BACHELOR OF SCIENCE PROGRAM OF STUDY

\*Students are encouraged plan their own course selections; **PLEASE go to and READ COURSE DESCRIPTIONS** in the **UNDERGRADUATE 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 (SASS report) from the FIU website. If you need assistance or have any questions you are encouraged to see an advisor prior to each registration period. All Biology faculty members serve as 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 State System Community College or University are exempt from the UCC)
- Must pass the CLAST requirement (Only by CLAST exemption by grades in UCC courses)
- 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**

<u>General Science Courses</u>	<u>FIU ( ) = credit hours</u>	<u>BC or MDC 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
<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
<input type="checkbox"/> Organic Chemistry I and II	CHM 2210(4)+Lab(1) CHM 2211(3)+Lab(1)	CHM 2210+Lab CHM 2211+Lab
<input type="checkbox"/> General Physics I and II	PHY 2053(4)+2048L(1) PHY 2054(4)+2049L(1) without Calculus or PHY 2048(4)+Lab(1) PHY 2049(4)+Lab(1) with Calculus	PHY 2053+Lab PHY 2054+Lab  PHY 2048+Lab PHY 2049+Lab
<input type="checkbox"/> Mathematics - Students must complete sub-requirements (A) <u>and</u> (B)		
(A) Calculus I	MAC 2311(4)	MAC 2311
(B) Calculus II	MAC 2312(4)	MAC 2312
or		
Statistics I and II	STA 3111(3) & 3112(3)	Stats designed for Biology students.
	or	
	STA 2112(3) & 3123(4)	Stats designed for Psychology students

**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>	<b>Credits</b>	
<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	BSC 1010 + CHM 1046	3	
<input type="checkbox"/>	PCB 4674 Evolution	PCB 3043 + PCB 3063	3	
<input type="checkbox"/>	BSC 4931 Senior Seminar	Senior Standing (at least 90 credits)	<u>1</u>	
			<b>13</b>	
<input type="checkbox"/>	6 Upper Division Elective Courses - Distribution Requirement - One lecture course in each of the following Areas**			
	<input type="checkbox"/>	A. Ecology Area	3	Check Catalog for Prerequisites
	<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>	" " " " " " " "
			<b>18</b>	
<input type="checkbox"/>	Laboratory Requirement - 4 Upper Division Labs		4	<b>Labs With UD Required or Elective Courses</b>
	<b>Other Requirements</b>			
<input type="checkbox"/>	Credit hours of courses outside the major required within the last 60 hours of enrollment		9	
<input type="checkbox"/>	Upper Division hours required		48	
<input type="checkbox"/>	Total credit hours required for graduation		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 the College of Education at (305) 348-2768

## ELECTIVES COURSES - DISTRIBUTION REQUIREMENT – for 2009-2010 Academic Year

### A. ECOLOGY

	<b>Fall 2009</b>	<b>Prerequisites (Grades of C or higher in)</b>
BSC 4363	Biodiversity of the Caribbean Basin	BSC 1010 + 1011
OCB 4070	Coastal Marine Conservation	BSC 1010 + 1011
MCB 4603	Microbial Ecology	MCB 3020 + Lab
PCB 4232	Biology of AIDS	BSC1010 + 1011, CHM 1045 + 1046
	<b>Spring 2010</b>	
BSC 4304	Environments of the Past	Permission of the instructor.
OCB 3043	Marine Biology and Oceanography	BSC 1010 + 1011
OCB 4732	Marine Microbial Ecology	BSC 1010 + 1011, OCB 3043
PCB 3373	Tropical Ecology	PCB 3043
PCB 4232	Biology of AIDS	BSC1010 + 1011, CHM 1045 + 1046
PCB 4301	Freshwater Ecology	PCB 3043
PCB 4467	Marine Protected Areas	
PCB 5685	Population Genetics	PCB 3063
ZOO 4513	Animal Behavior	BSC 1010 + 1011

## B. ORGANISMAL DIVERSITY

<b>Fall 2009</b>			<b>Prerequisites (Grades of C or higher in)</b>
BOT	3014	Plant Life History	BSC 1011
BOT	3153C	Local Flora	BOT 1010 or BSC 1011
BOT	4402	Marine Botany	BSC 1011
MCB	3020	General Microbiology	CHM 2210 + 2211, BSC 1010 + 1011
ZOO	3021	Comparative Zoology	BSC 1010 + 1011, BSC 1010L+1011L
ZOO	3303	Vertebrate Zoology	BSC 1010+1011, BSC 1010L+1011L

<b>Spring 2010</b>			
BOT	3810	Economic Botany	BSC 1011 or BOT 1010
BSC	4434	Bioinformatics for Biologists	BSC 1010, BSC 1011, PCB 3063
MCB	3020	General Microbiology	CHM 2210 + 2211, BSC 1010 + 1011
MCB	499X	Microbial Diversity	MCB 3020 + MCB 3020L
OCB	4303	Biology of Marine Mammals	BSC 1010 + BSC 1011, PCB 3043 or OCB 3043
ZOO	4234	General Parasitology	BSC 1010
ZOO	4454	Fish Biology	BSC 1010, BSC 1011, PCB 3043

## C. PHYSIOLOGY/BIOCHEMISTRY

<b>Fall 2009</b>			<b>Prerequisites (Grades of C or higher in)</b>
BCH	3033	General Biochemistry	CHM 2211 + BSC 1010
BOT	4503	Plant Physiology	BSC 1010 + BSC 1010L, BSC 1011, CHM 2210
PCB	3702	Intermediate Human Physiology	BSC 1010 or BSC 1011
PCB	3703	Human Physiology 1	BSC 1010
PCB	4233	Immunology	BSC 1010
PCB	4724	Comparative Physiology	BSC 1010, BSC 1011, CHM 2210
PCB	4805	Endocrinology	BSC 1011 + CHM 2211





<b>Spring 2010</b>			
BSC	4443	Functional Genomics/Proteomics	PCB 3063
MCB	4203	Microbial Pathogenicity	MCB 3020
MCB	4503	Virology	CHM 2210
PCB	3704	Human Physiology 2	BSC 1010
PCB	4514	Advanced Genetics	PCB 3063
PCB	4524	Molecular Biology	PCB 3063 and BCH 3033 or CHM 4304
PCB	4723	Animal Physiology	PCB 3203 or BCH 3033

## D. STRUCTURE/DEVELOPMENT


<b>Fall 2009</b>			<b>Prerequisites (Grades of C or higher in)</b>
BOT	3353	Morphology of Vascular Plants	BSC 1011
BSC	5406	Forensic Biology	
PCB	4663	General Human Genetics	PCB 3063

<b>Spring 2010</b>			
ZOO	4743C	Neuroscience	BSC 1010, BSC 1011, CHM 2211

## GENERAL REMARKS

 Total number of credit hours needed for graduation	120
 Number of upper division credit hours needed	48
 Upper division credit hours with 10 biology courses, 4 labs and Senior Seminar (Note, transfer students with >60 credits, must take half of their upper division credits at FIU)	35
 Credit hours needed outside major in last 60 hours of enrollment	9

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

 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. Spanish 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 of 66 for Spanish, 62 for French) - **Testing Office PC 248**
- 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 three of the following areas: A. Ecology, B. Organismal Diversity, C. Physiology/Biochemistry, or D. Structure/ Development.

<u>Course</u>	<u>Distribution Area</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, Pharmacy 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 for arranging a curriculum to enhance their potential to gain admission.