# FLORIDA ATLANTIC UNIVERSITY - INTELLECTUAL FOUNDATION PROGRAM 2023 - 2024

All courses are three (3) credits unless otherwise indicated. Course selections should be made in consultation with an academic advisor.

# **BIOLOGY MAJOR (2023 - 2024)**

Charles E. Schmidt College of Science Bachelor of Arts (BA) or Bachelor of Science (BS)

(6 credit hours required – Writi Grade of "C" or higher is ENC 1101College Writing I ENC 1102College Writing I	I +  MAY BE SUBSTITUTED FOR ENC 1102:  sillege Writing  ng-Across-the-Curriculum (WAC)	FOUNDATIONS OF MATHEMATICS & QUANTITATIVE REASONING  (6 credit hours required – Grade of "C" or higher is required)  Student must take 2 of the following courses, 1 must be from group A.  The second course may be from group A or group B.  Group A  MAC 1105College Algebra  MAC 2311Calculus with Analytic Geometry 1 (4 credits)  or any mathematics course for which one of the above courses is the direct prerequisite  Group B  COP 1031CComputer Programming & Data Literacy for Everyone (For Non-College Engineering & Computer Science majors)  MAC 1147Precalculus Algebra & Trigonometry (4 credits)  MAC 2210Intro Calculus w/Applications (4 credits) (Permit Only MAC 2233Methods of Calculus (REQUIRED or higher math)  MAC 2312Calculus with Analytic Geometry 2 (4 credits) ***
		PHI 2102Logic
		*** Medical Biology majors must select one of these math courses.
		<u> </u>
(6 credit hours required - <b>One</b> Student must take 2 of the following The second course may be	of the courses must have a lab) ng courses, 1 must be from group A. e from group A or group B.	FOUNDATIONS OF SOCIETY & HUMAN BEHAVIOR  (6 credit hours required)  Student must take 2 of the following courses, 1 must be from group A.  The second course may be from group A or group B.
Group A	Group B	Group A
BSC 1010 & L (Required) Biological Principles	BSC 1011 & L <b>(Required)</b> Biodiversity (4 cr. incl Lab)	ANT 2000 & DUnited States History Since 1877 •
(4 cr. Incl. Lab)		ANT 2000 & DIntroduction to Anthropology (WAC)  ECO 2013Macroeconomic Principles §
CHM 2045 & L (Required) General Chemistry 1		POS 2041Government of the United States •
(4 cr. Incl. Lab) ‡		PSY 1012Introduction to Psychology (see note below)
(Required: select one below) PHY 2048 & L General Physics 1		SYG 1000Sociological Perspectives
(5 credits incl. Lab) *PHY 2053 College Physics 1		(Recommended for pre-health-related majors)
(5 credits incl. Lab) **		Group B
		AMH 2010 & DUnited States History to 1877
		CCJ 2002Law, Crime & the Criminal Justice System ±
		DIG 2202Digital Culture
		ECO 2023Microeconomic Principles §
		ECP 2002Contemporary Economic Issues
(D) = Discus	sion, (L) = Lab	EEX 2091Disability and Society
Courses indicating a (D) or (L) are lin discussion. If you select one of these		EME 2620Digital Literacy in a Globally Connected World
lecture, lab, and/or discussion. You		EVR 1110Climate Change: The Human Dimensions
discussion.		EVR 2017Environment and Society
		LIN 2001Introduction to Language (online course)
	y Requirement ies/civic-literacy-requirement/	PAD 2081Risk Resilience and Rising Seas ±
		PAD 2258Changing Environment of Soc., Bus., & Gov't
Beginning in Summer 2021, Florida Lonow requires students to complete <b>b</b>		SYG 2010Social Problems

or POS 2041) and an assessment exam.

\_\_\_ URP 2051.....Designing the City

Note: A required course to take PSY 3234 per the University catalog.

# FOUNDATIONS IN GLOBAL CITIZENSHIP (6 credit hours required) Student must choose two (2) courses from among the following: ANT 2410 ......Culture and Society EDF 2854..... Educated Citizen in Global Context GEA 2000 ...... World Geography INR 2002 .....Introduction to World Politics JST 2452 ......Global Jewish Communities Ω LAS 2000 ......Intro to Caribbean & Latin American Studies LIN 2607 ...... Global Perspectives on Language MAR 2142 ......Culture, Consumers and the Global Marketplace 💢 MUH 2121..... Music in Global Society Ω POT 2000 ......Global Political Theory SYP 2450 ......Global Society SOW 1005 ......Global Perspectives of Social Services SOW 1130 ......Race and Cultural Inclusion in Social Work WOH 2012 & D..... History of Civilization 1 (WAC) ++ WOH 2022 ..... History of Civilization 2

# STUDENTS ASSUME RESPONSIBILITY FOR MEETING ALL GRADUATION REQUIREMENTS

Course selections should be made in consultation with an academic advisor.

#### **FOUNDATIONS OF HUMANITIES**

(6 credit hours required)

Student must take 2 of the following courses, 1 must be from group A.

The second course may be from group A or group B.

#### Group A

· · · · · · · · · · · · · · · · · · ·				
ARH 2000 Art Appreciation				
MUL 2010 Music Appreciation				
PHI 2010 & D Introduction to Philosophy (WAC) ++				
THE 2000 Theatre Appreciation				
Group B				
ARC 2208 Culture & Architecture				
DAN 2100 Appreciation of Dance				
FIL 2000 & D Film Appreciation				
HUM 2471 Racism and Anti-Racism				
LIT 2010 Interpretation of Fiction (WAC) ++				
LIT 2030 Interpretation of Poetry (WAC) ++				
LIT 2040 Interpretation of Drama (WAC) ++				
LIT 2070 Interpretation of Creative Nonfiction (WAC) ++				
LIT 2100 Introduction to World Literature				
LIT 2931 Special Topics in Literature (WAC) ++ $\Omega$				
SPC 2608 Public Speaking ±				

### Legend

- ENC 1101 is a prerequisite.
- ++ Two Foundations of Written Communications classes are required before taking this course.
- § Sophomore standing (30 credits earned) is a requirement to take this course.
- \* MAC 2311 is a prerequisite for this course.

WST 2351.....Gender and Climate Change

- \*\* MAC 2233 is a prerequisite for this course. If a lab is needed, then take General Physics 1 Lab (PHY 2048 Lab).
- + Co-requisite of College Algebra (MAC 1105) or a prerequisite of Introductory Chemistry (CHM 1025).
- ± Starting Spring 2022
- Ω Starting Spring 2023
- Starting Fall 2023
- See information box regarding Civic Literacy Requirement
- WAC (WAC) Writing across the curriculum course.

### § Writing Across the Curriculum (WAC)/Gordon Rule

Students must attain grades of "C" or higher. 12 credits of writing (WAC) and 6 credits of mathematics are required.

### Please note:

**Students must take four (4) WAC courses.** Two (2) courses are to be taken from Foundations of Written Communication. We strongly recommend the two additional WAC courses come from these courses: ANT 2000, PHI 2010, WOH 2012, LIT 2010, LIT 2030, LIT 2040, LIT 2070 or LIT 2931. See advisor for additional details.

### (D) = Discussion, (L) = Lab

Courses indicating a (D) or (L) are linked with a lecture, a lab, and/or a discussion. If you select one of these courses, you must register for the lecture, lab, and/or discussion. You <u>must</u> attend the lecture, lab, and/or discussion.

### https://myfau.fau.edu

### Go to MyFAU to:

Check e-mail

See FAU Announcements

# FAU Self-Service:

Course schedules

Registration (drop/add classes) and withdrawals

Student records and financial aid

**Tuition payments** 

The University Course Catalog

#### **Elective Credits**

The number of elective credits allowed varies by major. Please consult with an academic advisor to determine the number of elective credits required for your major. **Certain majors do not allow any electives.** 

### FOREIGN LANGUAGE (4 - 8 credits, 1 or more courses in the same language) - REQUIRED FOR MAJOR

Students with more than one year of a foreign language in high school should enroll in the second half of the beginners' foreign language class (ARA/CHI/FRE/GER/HBR/ITA/JPN/LAT/SPN 1121) or a higher-level course. Proficiency for a first-level course can be earned by successfully completing a second-level course. For questions related to this requirement, consult an academic advisor. CLEP exam credits meet this requirement: see the catalog.

**NOTE:** Native Speakers of a foreign language must consult the Languages, Linguistics, and Comparative Literature Department regarding this requirement.

**NOTE**: Honors Seminars SHALL BE ACCEPTED AS MEETING THE WAC/GRW REQUIREMENT. See the University Advising Services Office for details.

**NOTE:** See catalog for specific requirements, course descriptions, and additional information. The requirements for some Intellectual Foundations Program (IFP) courses & other courses may be satisfied by passing the appropriate AP or CLEP exam. Check with your advisor and college.

### The Charles E. Schmidt College of Science Biology department has the following requirements (per the University catalog):

- (1) A student must earn a "C-" or better in all biology AND cognate courses taken as part of the requirements for an undergraduate degree in Biological Sciences. However, students must earn a "C" in chemistry courses.
- (2) Any course work in the major field transferred from another institution must be approved by the major dept.
- (3) The maximum amount of credit which may be earned through co-op is 10 credits; some departments allow some of these credits to substitute for major courses, check with department for specifics.
- (4) The Department of Biological Sciences offers an Honors Thesis Program that recognizes research accomplishments of talented undergraduates. Eligible students must have a minimum of 20 credits in biology and an overall GPA of 3.2. Students usually begin the program in their sophomore or junior year and conduct independent supervised research during their junior and senior years. A written paper and a seminar describing the results of their research are required in the senior year. Students who meet the eligibility criteria must apply and be accepted to the program. To enroll in the below Honors Program courses which can be used as biology elective courses. Interested students should contact the faculty member whose research interests are closest to those the student wishes to pursue and see <a href="http://biology.fau.edu/academics/undergraduate/research.php">http://biology.fau.edu/academics/undergraduate/research.php</a> for more information. **Denoted with (H).**

# MAJOR COURSES, COLLEGE REQUIREMENTS and ELECTIVES B.A. DEGREE

### Required Courses (Biology Core): 40 - 43 credits:

OR { OR {	BSC 1019 SLS 1411 SLS 1501 BSC 1011 & L BSC 1010 & L	Introduction to Biology at FAU First-Year Interest Group Experience Honors Introduction to Academic Life Biodiversity and Lab Biological Principles and Lab	0 cr 1 cr 2 cr 4 cr – as indicated on first page. 4 cr
	CHM 2045 & L CHM 2046 & L CHM 2210 & D CHM 2211	General Chemistry I and Lab General Chemistry II and Lab Organic Chemistry I Organic Chemistry II	4 cr – as indicated on first page. 4 cr 3 cr 3 cr
OR {	PSC 2121 PHY 2053 MAC 2233	Physical Science College Physics Methods of Calculus	3 cr 4 cr 3 cr
OR {	STA 3173 PSY 3234	Introduction to Biostatistics Exp. Design & Stat. Inference	3 cr (prerequisite: MAC 1105) 3 cr (prerequisite: PSY 1012)

### Select four of the courses below (Additional courses selected from this category beyond the four courses may be applied toward the elective requirement.)

PCB 3063 Genetics	4 cr.	PCB 4043 Principles of Ecology	3 cr.
PCB 3023 Cell Biology	3 cr.	PCB 3674 Evolution	3 cr.
One course in Physiology ***	4-5 cr.		

### \*\*\*Students who select the "One course in Physiology" option above may fulfill this option by choosing one of the below course/lab combinations:

BOT 4503, 4503 L Principles of Plant Physiology and Lab 4 cr.	ZOO 4690, 4690L Vertebrate Structure Dev. & Evolution w/Lab 5	cr.
PCB 4723, 4723L Comparative Animal Physiology and Lab 3 cr.	PCB 3703, 3703L Human Morphology and Function 1 and Lab 4	cr.
PCB 3704, 3704L Human Morphology and Function 2 and Lab 4 cr.		

# Biology electives (select 12 credits Upper Division): Please note you must have course prerequisite(s) completed - (H) - Honors Research Program Courses

Vascular Plant Anatomy & Lab (BOT 3223 & 3223L) 4 credits	Medical Bacteriology (MCB 4203) 3 credits
Marine Botany & Lab (BOT 4404 & 4404L) 4 credits	Virology (MCB 4503) 3 credits
Principles of Plant Physiology & Lab (BOT 4503 4503L) 4 credits	Microbial Ecology (MCB 4603) 3 credits
Plant Biotechnology (BOT 4734C) 3 credits	Marine Biodiversity & Lab (OCB 4032 & 4032L) 4 credits
Life of a Biologist (BSC 2844) 1 credit	Marine Biology & Lab (OCB 4043 & 4043L) 4 credits
Conservation Biology (BSC 3052) 3 credits	Marine Microbiology and Molecular Biology & Lab (OCB 4525 & 4525L) 4 credits
Introduction to Biological Research (BSC 3453) 1 credit (H)	Marine Ecology & Lab (OCB 4633 & 4633L) 4 credits
Biological Research (BSC 3481) 2 credits (H)	Marine Science (OCE 4006) 3 credits
Molecular Genetics of Aging (BSC 4022) 3 credits	Issues in Human Ecology (PCB3352) 3 credits
Climate Change Biology (BSC 4307) 3 credits	Genetics Lab (PCB 4067L) 3 credits
Laboratory Methods in Biotechnology (BSC 4403L) 3 credits	Immunology (PCB 4233) 3 credits
Concepts in Bioinformatics (BSC 4434C) 3 credits	Freshwater Ecology & Lab (PCB 4301 & 4301L) 4 credits
Biology of Cancer (BSC 4806) 3 credits	Molecular Genetics (PCB 4522) 3 credits
Directed Independent Study (BSC 4905) 1-3 credits	Genes and Development (PCB 4594) 3 credits
Directed Independent Research (BSC 4910) 0-3 credits	Cellular Neuroscience and Disease (PCB 4842) 3 credits
Honors Research (BSC 4917) 3 credits (H)	Practical Cell Neuroscience (PCB 4843C) 3 credits
Honors Thesis (BSC 4918) 3 credits (H)	Invertebrate Zoology & Lab (ZOO 3205 & 3205L) 5 credits
Special Topics (BSC 4930) 1-3 credits	Introduction to Animal Locomotion (ZOO 4373) 3 credits
Comparative Animal Behavior (CBH 4024) 3 credits	Functional Biology of Marine Animals & Lab (ZOO 4402 & 4402L) 4 credits
Critical Thinking in Environmental Science (EVS 4021) 3 credits	Ornithology & Lab (ZOO 4472 & 4472L) 2 credits
Artificial Intelligence Applications in Biology (IDS 4139) 3 credits	Principles of Human Neuroanatomy (ZOO 4742) 3 credits
General Microbiology & Lab (MCB 3020 & 3020L) 4 credits	

45 – 47	credits	Biology Core
12	credits	Biology Electives
<u>28 – 30</u>	credits	Free Electives – (15 – 16 credits must be upper-division)
120 CRE	DITS	TOTAL (45 credits at upper division minimum)

~-		ogy Core): 47 -		B.S. D			
UR	BSC 1 SLS 14 SLS 14	1019	Introduction to Biology at FAU	0 cr			
OR	SIS 1	411 501	First-Year Interest Group Experience Honors Introduction to Academic Life	1 cr 2 cr			
	BSC 1	1011 & L	Biodiversity and Lab & Disc		s indicated on first page.		
	BSC 1		Biological Principles and Lab & Disc	4 cr			
	CHM	2045 & L	General Chemistry I and Lab		s indicated on first page - (Chemistry courses req	uire a "C" or better)	
	CHM	2046 & L	General Chemistry II and Lab	4 cr -	Requires a "C" or better)		
	CHM		Organic Chemistry I Organic Chemistry II	3 cr -	3 cr - (Requires a "C" or better) Requires a "C" or better)		
•			,		,		
OR {	MAC MAC	2233 2311	Methods of Calculus Calculus w/Analytic Geometry	3 cr 4 cr			
	- DUV 1	2052	College Physics I	1 cr	revenuisite of a "C" in one of these courses. BAAC	1114/1147/2222/2211	
ſ	PHY 2	2053 2048L	College Physics I General Physics I Lab	4 cr - 1 cr	rerequisite of a "C" in one of these courses: MAC	1114/114//2233/2311	
	DHV 2	2048	General Physics I	1 cr -	rerequisite of a "C" in MAC 2311 per university ca	talog	
l	PHY 2	2048L	General Physics I Lab	1 cr	rerequisite of a community ca	talog	
	•						
	PHY 2	2054	College Physics II General Physics II Lab	4 cr 1 cr			
	PHY 2 PHY 2 PHY 2 PHY 2 PHY 2	2049L	•				
" l	PHY 2	2049 2049	General Physics II General Physics II Lab	4 cr 1 cr			
7	· //// 2	2043L	·				
OR <	STA 3	3173 3234	Introduction to Biostatistics Exp. Design & Stat. Inference		rerequisite: MAC 1105 per university catalog rerequisite: PSY 1012 per university catalog		
elect fo	ur of the cours	ses below (Add	. •		the four courses may be applied toward the elect	tive requirement.)	
	PCB 3063 Ge	enetics	4 cr.		PCB 4043 Principles of Ecology 3 c	r.	
	PCB 3023 Ce	ll Biology	3 cr		PCB 3674 Evolution 3 c	r.	
	One course in	Priysiology	4-5 cr				
***Stude	ents who select t	he "One course	in Physiology" option above may fulfill this o	ption by	noosing one of the below course/lab combinations:		
	BOT 4503, 450	3 L Principles	of Plant Physiology and Lab 4 cr.		ZOO 4690, 4690L Vertebrate Structure Dev. & Evo	lution w/Lab	5
	PCB 4723, 472	3L Comparat	ive Animal Physiology and Lab 3 cr.		PCB 3703, 3703L Human Morphology and Functio	n 1 and Lab	4
	PCB 3704, 370	4L Human M	orphology and Function 2 and Lab 4 cr.				
Biology e	electives (select		per Division): Please note you must have	course n	erequisite(s) completed - (H) – Honors Research Pr	ogram Courses	
	electives (selectives Biochemistry I	t 18 credits Up	•	course p	erequisite(s) completed - <b>(H) – Honors Research Pr</b> Artificial Intelligence Applications in Biology (ID		
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# Required Courses (Biology Core): 75 - 76 credits

	BSC 1011 & L BSC 1010 & L	Biodiversity and Lab & Disc Biological Principles and Lab & Disc	4 cr – <b>as i</b> 4 cr	ndicated on first page.
	CHM 2045 & L CHM 2046 & L CHM 2210 & D CHM 2211 CHM 2211L	General Chemistry I and Lab General Chemistry II and Lab Organic Chemistry I Organic Chemistry II Organic Chemistry Lab	4 cr - (Red 3 cr - (Red 3 cr - (Red	ndicated on first page - (Chemistry courses require a "C" or better) quires a "C" or better)
OR <b>{</b>	MAC 2241 MAC 2311	Life Science Calculus Calculus w/Analytic Geometry	4 cr 4 cr	
OR	PHY 2053 PHY 2048L	College Physics I General Physics I Lab	4 cr - <b>Pre</b> r 1 cr	requisite of a "C" in one of these courses: MAC 1114/1147/2233/2311
OR	PHY 2048L PHY 2048 PHY 2048L	General Physics I General Physics I Lab	4 cr - <b>Prer</b> 1 cr	requisite of a "C" in MAC 2311 per university catalog
ſ	PHY 2054 PHY 2049L PHY 2049	College Physics II General Physics II Lab	4 cr 1 cr	
OR ]	PHY 2049 PHY 2049L	General Physics II General Physics II Lab	4 cr 1 cr	
OR {	STA 3173 PSY 3234	Introduction to Biostatistics Exp. Design & Stat. Inference	•	requisite: MAC 1105 per university catalog requisite: PSY 1012 per university catalog
	BCH 3033 MCB 3020 & L PCB 3063 PCB 3023	Biochemistry 1 General Microbiology and Lab Genetics Cell Biology	3 cr 4 cr 4 cr. 3 cr	
OR $\Big\{$	PCB 3703, 3703L ZOO 4690, 4690L	Human Morphology and Function 1 an Vertebrate Structure Dev. & Evolution	nd Lab w/Lab	4 cr. 5 cr.
$orig\{$	PCB 3704, 3704L PCB 4723, 4723L	Human Morphology and Function 2 an Comparative Animal Physiology and La	nd Lab ab	4 cr. 4 cr.

# MEDICAL BIOLOGY ELECTIVES (SELECT 12 CREDITS)

Select a minimum of 12 UPPER DIVISION credits from the list below	
Biochemistry 2 or Biochemistry Lab (BCH 3034 or BCH 3103L) 3 credits	Virology (MCB 4503) 3 credits
Molecular Genetics of Aging (BSC 4022) 3 credits	Evolution (PCB 3674) 3 credits
Laboratory Methods in Biotechnology (BSC 4403L) 3 credits	Principles of Ecology (PCB 4043) 3 credits
Biology of Cancer (BSC 4806) 3 credits	Genetics Lab (PCB 4067L) 3 credits
Directed Independent Research in Biological Sciences ***(BSC 4910) 0-3 credits	Immunology (PCB 4233) 3 credits
Special Topics (BSC 4930) 1 – 3 credits	Molecular Genetics (PCB 4522) 3 credits
Comparative Animal Behavior (CBH 4024) 3 credits	Genes and Development (PCB 4594) 3 credits
Introduction to Drug Design (CHM 4273) 3 credits	Cellular Neuroscience and Disease (PCB 4842) 3 credits
Structural Biochemistry (CHM 4350) 3 credits	Practical Cell Neuroscience (PCB 4843C) 0 - 3 credits
Directed Independent Study*** (CHM 4905) 1-4 credits	Directed Independent Study*** (PCB 4905) 1-3 credits
Senior Seminar (CHM 4930) 1 credit	Directed Independent Research*** (PCB 4915) 1-3 credits
Artificial Intelligence Applications in Biology (IDS 4139) 3 credits	Directed Independent Research*** (PCB 4916) 0-3 credits
Medical Bacteriology (MCB 4203) 3 credits	Special Topics (PCB 4930) 1-8 credits

<sup>\*\*\*</sup> Maximum of 3 credits in DIS/DIR/RES within a given semester. No more than a total of 5 non-graded (S/U) credits may be used to fulfill biology degree program requirements.

31 – 35	credits	Intellectual Foundations Program and Foreign Language			
63 – 64	credits	Medical Biology Core			
12	credits	Medical Biology Electives			
9 – 14	credits	Free Electives – (7-8 credits must be upper-division)			
120 CREDITS TOTAL (45 credits at upper division minimum)					