BIOLOGY MAJOR (2023 - 2024)

**FOUNDATIONS OF WRITTEN COMMUNICATION**
(6 credit hours required – Writing Across the Curriculum - WAC)
Grade of “C” or higher is required in each course.

- ENC 1101......College Writing I (REQUIRED)
- ENC 1102 ......College Writing II +

THE FOLLOWING COURSES BELOW MAY BE SUBSTITUTED FOR ENC 1102:
- ENC 1939 + ....Special Topic: College Writing
- HIS 2050 + .....Writing History

**Note:** Students must take four Writing-Across-the-Curriculum (WAC) courses, two of which must be taken from Foundations of Written Communication.

**FOUNDATIONS OF SCIENCE & THE NATURAL WORLD**
(6 credit hours required - One of the courses must have a lab)
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.

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>____ BSC 1010 &amp; L (Required) Biological Principles (4 cr. Incl. Lab)</td>
<td>____ BSC 1011 &amp; L (Required) Biodiversity (4 cr. incl Lab)</td>
</tr>
<tr>
<td>____ CHM 2045 &amp; L (Required) General Chemistry 1 (4 cr. Incl. Lab) $</td>
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</tbody>
</table>

(Required: select one below)
- PHY 2048 & L General Physics 1 (5 credits incl. Lab) *
- PHY 2053 College Physics 1 (5 credits incl. Lab) **

(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 must attend the lecture, lab, and/or discussion.

◊ Civic Literacy Requirement
https://www.fau.edu/ugstudies/civic-literacy-requirement/

Beginning in Summer 2021, Florida Legislature amended the statute and now requires students to complete both a civic literacy course (AMH 2020 or POS 2041) and an assessment exam.
### 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
- 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
- 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
- WST 2351 ............. Gender and Climate Change

**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)*
- 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.
- ** 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
- Ø 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 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.

### Go to MyFAU to:

https://myfau.fau.edu

- 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 http://biology.fau.edu/academics/undergraduate/research.php for more information. **Denoted with (H).**
MAJOR COURSES, COLLEGE REQUIREMENTS and ELECTIVES

B.A. DEGREE

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

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

<table>
<thead>
<tr>
<th>PCB 3063 Genetics 4 cr</th>
<th>PCB 4043 Principles of Ecology 3 cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB 3023 Cell Biology 3 cr</td>
<td>PCB 3674 Evolution 3 cr</td>
</tr>
<tr>
<td>One course in Physiology *** 4-5 cr</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>BOT 4503, 4503 L Principles of Plant Physiology and Lab 4 cr</th>
<th>ZOO 4690, 4690L Vertebrate Structure Dev. &amp; Evolution w/Lab 5 cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB 4723, 4723L Comparative Animal Physiology and Lab 3 cr</td>
<td>PCB 3703, 3703L Human Morphology and Function 1 and Lab 4 cr</td>
</tr>
<tr>
<td>PCB 3704, 3704L Human Morphology and Function 2 and Lab 4 cr</td>
<td></td>
</tr>
</tbody>
</table>

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

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

31 – 35 credits Intellectual Foundations Program and Foreign Language
45 – 47 credits Biology Core
12 credits Biology Electives
28 – 30 credits Free Electives – (15 – 16 credits must be upper-division)
120 CREDITS TOTAL (45 credits at upper division minimum)
Required Courses (Biology Core): 47 - 51 credits

**B.S. DEGREE**

### Biological Principles and Lab & Disc
- **BSC 1011**: Introduction to Biology at FAU (0 cr)
- **BSC 1011 & L**: Biological Principles and Lab & Disc (4 cr - as indicated on first page.

### General Chemistry I and Lab
- **CHM 2045 & L**: General Chemistry I and Lab (4 cr - as indicated on first page - (Chemistry courses require a “C” or better)

### General Chemistry II and Lab
- **CHM 2046 & L**: General Chemistry II and Lab (4 cr - (Requires a “C” or better)

### Organic Chemistry I
- **CHM 2210 & D**: Organic Chemistry I (3 cr - (Requires a “C” or better)

### Organic Chemistry II
- **CHM 2211**: Organic Chemistry II (3 cr - (Requires a “C” or better)

### Methods of Calculus
- **MAC 2323**: Methods of Calculus (3 cr)

### Calculus w/Analytic Geometry
- **MAC 2311**: Calculus w/Analytic Geometry (4 cr)

### College Physics I
- **PHY 2053**: College Physics I (4 cr - Prerequisite of a “C” in one of these courses: MAC 1114/1147/2233/2311

### College Physics I Lab
- **PHY 2048**: College Physics I Lab (1 cr)

### College Physics II
- **PHY 2054**: College Physics II (4 cr)

### General Physics II Lab
- **PHY 2049**: General Physics II Lab (1 cr)

### Principles of Plant Physiology and Lab
- **BOT 4503**: Principles of Plant Physiology and Lab (4 cr)

### Comparative Animal Physiology and Lab
- **ZOO 4742**: Comparative Animal Physiology and Lab (3 cr)

### Introductions to Biostatistics
- **STA 3173**: Introductions to Biostatistics (3 cr - prerequisite: MAC 1105 per university catalog

### Evolution
- **PSY 3234**: Evolution (3 cr - prerequisite: PSY 1012 per university catalog

### Honors Research (BSC 4917)
- **PCB 4043**: Principles of Ecology (3 cr)

### Honors Thesis (BSC 4918)
- **PCB 3674**: Evolution (3 cr)

### Comparative Animal Behavior (CBH 4024)
- **PSY 3234**: Evolution (3 cr)

### Organic Chemistry II Lab (CHM 2211L)
- **PCB 3023**: Cell Biology (3 cr)

### Critical Thinking in Environmental Science (EVS 4021)
- **PCB 3704, 3704L**: Human Morphology and Function 2 and Lab (4 cr)

### Biology electives (select 18 credits Upper Division): Please note you must have course prerequisite(s) completed - (H) – Honors Research Program Courses

- **Biochemistry I (BCH 3033) 3 credits**
- **Biochemistry II (BCH 3034) 3 credits**
- **Biochemistry Lab (BCH 3103L) 3 credits**
- **Vascular Plant Anatomy & Lab (BOT 3223 & 3223L) 4 credits**
- **Marine Botany & Lab (BOT 4404 & 4404L) 4 credits**
- **Principles of Plant Physiology & Lab (BOT 4503 & 4503L) 4 credits**
- **Plant Biotechnology (BOT 4734C) 3 credits**
- **Life of a Biologist (BSC 2844) 1 credit**
- **Conservation Biology (BSC 3052) 3 credits**
- **Introduction to Biological Research (BSC 3453) 1 credit (H)**
- **Biological Research (BSC 3481) 2 credits (H)**
- **Molecular Genetics of Aging (BSC 3482) 3 credits**
- **Climate Change Biology (BSC 4307) 3 credits**
- **Laboratory Methods in Biotechnology (BSC 4403L) 3 credits**
- **Concepts in Bioinformatics (BSC 4434C) 3 credits**
- **Biology of Cancer (BSC 4806) 3 credits**
- **Directed Independent Study (BSC 4905) 1-3 credits**
- **Directed Independent Research (BSC 4910) 0-3 credits**
- **Honors Research (BSC 4917) 3 credits (H)**
- **Honors Thesis (BSC 4918) 3 credits (H)**
- **Special Topics (BSC 4930) 1-3 credits**
- **Comparative Animal Behavior (CBH 4024) 3 credits**
- **Organic Chemistry II Lab (CHM 2211L) 2 credits**
- **Critical Thinking in Environmental Science (EVS 4021) 3 credits**

### Intellectual Foundations Program and Foreign Language
- **31 – 35 credits**

### Biology Core
- **52 – 53 credits**

### Biology Electives
- **18 credits**

### Free Electives – (9 – 11 credits must be upper-division)
- **120 CREDITS**

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University Advising Services
May 23, 2023
B.S. MEDICAL BIOLOGY DEGREE

Required Courses (Biology Core):

- BSC 1011 & L  Biodiversity and Lab & Disc  4 cr – as indicated on first page.
- BSC 1010 & L  Biological Principles and Lab & Disc  4 cr.
- CHM 2045 & L  General Chemistry I and Lab  4 cr – as indicated on first page - (Chemistry courses require a “C” or better)
- CHM 2046 & L  General Chemistry II and Lab  4 cr - (Requires a “C” or better)
- CHM 2210 & D  Organic Chemistry I  3 cr - (Requires a “C” or better)
- CHM 2211  Organic Chemistry II  3 cr - (Requires a “C” or better)
- MAC 2241  Life Science Calculus  4 cr
- MAC 2311  Calculus w/Analytic Geometry  4 cr
- PHY 2053  College Physics I   4 cr - Prerequisite of a “C” in one of these courses: MAC 1114/1147/2233/2311
- PHY 2048L  General Physics I Lab  1 cr
- PHY 2048  General Physics I   4 cr - Prerequisite of a “C” in MAC 2311 per university catalog
- PHY 2049L  General Physics II Lab  1 cr
- PHY 2049  General Physics II   4 cr
- PHY 2049L  General Physics II Lab  1 cr
- STA 3173  Introduction to Biostatistics  3 cr - prerequisite: MAC 1105 per university catalog
- PSY 3234  Exp. Design & Stat. Inference  3 cr - prerequisite: PSY 1012 per university catalog
- BCH 3033  Biochemistry 1   3 cr
- MCB 3020 & L  General Microbiology and Lab  4 cr
- PCB 3063  Genetics  4 cr.
- PCB 3023  Cell Biology  3 cr
- PCB 3703, 3703L  Human Morphology and Function 1 and Lab  4 cr.
- ZOO 4690, 4690L  Vertebrate Structure Dev. & Evolution w/Lab  5 cr.
- PCB 3704, 3704L  Human Morphology and Function 2 and Lab  4 cr.
- PCB 4723, 4723L  Comparative Animal Physiology and Lab  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
- Molecular Genetics of Aging (BSC 4022) 3 credits
- Laboratory Methods in Biotechnology (BSC 4403L) 3 credits
- Biology of Cancer (BSC 4806) 3 credits
- Directed Independent Research in Biological Sciences ***(BSC 4910) 0-3 credits
- Comparative Animal Behavior (CBH 4024) 3 credits
- Introduction to Drug Design (CHM 4273) 3 credits
- Structural Biochemistry (CHM 4350) 3 credits
- Directed Independent Study***(CHM 4905) 1-4 credits
- Senior Seminar (CHM 4930) 1 credit
- Artificial Intelligence Applications in Biology (IDS 4139) 3 credits
- Medical Bacteriology (MCB 4203) 3 credits

Virology (MCB 4503) 3 credits  Evolution (PCB 3674) 3 credits
Principles of Ecology (PCB 4043) 3 credits  Genetics Lab (PCB 4067L) 3 credits
Immunology (PCB 4323) 3 credits  Molecular Genetics (PCB 4522) 3 credits
Genes and Development (PCB 4594) 3 credits  Cellular Neuroscience and Disease (PCB 4842) 3 credits
Practical Cell Neuroscience (PCB 4843C) 0 - 3 credits  Directed Independent Study***(PCB 4915) 1-4 credits
Directed Independent Research**(PCB 4915) 0 - 3 credits  Directed Independent Research***(PCB 4916) 0-3 credits
Special Topics (PCB 4930) 1-4 credits  Special Topics (PCB 4930) 1-8 credits

*** 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 – 34 credits  Free Electives – (7-8 credits must be upper-division)
120 CREDITS  TOTAL (45 credits at upper division minimum)