**BIOLOGY | INTEGRATIVE BIOLOGY**

The biology majors combine the faculty and resources of the College of Agricultural and Life Sciences and the College of Liberal Arts and Sciences to prepare undergraduates for careers in the biological sciences, advanced study in professional and graduate schools, productive citizenship and leadership, and lifelong learning. The program is comprehensive and flexible, emphasizing the diverse forms, processes, and systems of life. Students in the program complete required and elective courses that promote critical thinking through the investigation and understanding of principles and unifying themes that govern living systems. The biology major offers a broader approach to biology than is available through a major in botany, zoology, or other specialized biological sciences majors.

**About this Program**
- **College:** Liberal Arts and Sciences
- **Degrees:** Bachelor of Arts | B.S.: Integrative Biology | B.S.: Preprofessional Biology
- **Credits for Degree:** 120
- **Additional Information**
- **Related Biology Programs**

To graduate with this major, students must complete all university, college, and major requirements.

Critical Tracking records each student’s progress in courses that are required for entry to each major. Please note the critical-tracking requirements below on a per-semester basis.

For degree requirements outside of the major, refer to CLAS Degree Requirements: Structure of a CLAS Degree.

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites may be used for transfer students.

**Semester 1**
- Complete one of the following in BSC, CHM or MAC:
  - BSC 2010/BSC 2010L; CHM 1025 or CHM 2045/CHM 2045L;
  - MAC 1140, MAC 1114, MAC 1147 or MAC 2311
- 2.0 UF GPA required

**Semester 2**
- Complete CHM 2045/CHM 2045L; and BSC 2010/BSC 2010L or MAC 2311
- 2.0 UF GPA required

**Semester 3**
- Complete BSC 2010/BSC 2010L and MAC 2311 with a 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

**Semester 4**
- Complete CHM 2046/CHM 2046L and BSC 2011/BSC 2011L with a 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

**Semester 5**
- Complete CHM 2210 with a 2.5 GPA required for all critical-tracking courses
- 2.0 UF GPA required

Students are expected to complete the writing requirement while in the process of taking the courses below. Students are also expected to complete the general education international (GE-N) and diversity (GE-D) requirements concurrently with another general education requirement (typically, GE-C, H or S).

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

*This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student’s academic record and scheduling availability of courses. Prerequisites still apply.*

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHM 2045 &amp; 2045L</td>
<td>General Chemistry 1 and General Chemistry 1 Laboratory (Critical Tracking; State Core Gen Ed Physical Sciences)</td>
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<td>IUF 1000</td>
<td>What is the Good Life (Gen Ed Humanities)</td>
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<tr>
<td>MAC 2311</td>
<td>Analytic Geometry and Calculus 1 (Critical Tracking; State Core Gen Ed Mathematics)</td>
<td>4</td>
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<tr>
<td>BSC 1920</td>
<td>First Year Introduction: Biology at UF (recommended elective)</td>
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<tr>
<td>State Core Gen Ed Social and Behavioral Sciences</td>
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**Semester Two**
- CHM 2046 & 2046L; and General Chemistry 2 Laboratory (Critical Tracking)
- Select one:
  - MAC 2312: Analytic Geometry and Calculus 2 (Gen Ed Mathematics) | 3-4 |
  - STA 2023: Introduction to Statistics 1 (Gen Ed Mathematics) |
  - State Core Gen Ed Composition; Writing Requirement | 3 |
  - Gen Ed Social and Behavioral Sciences | 3 |
  - Elective | 3 |

**Semester Three**
- BSC 2010 & 2010L: Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1 (Critical Tracking; Gen Ed Biological Sciences) | 4 |
- Select one:
  - CHM 2210: Organic Chemistry 1 (Critical Tracking) | 3-4 |
  - CHM 3217: Organic Chemistry/Biochemistry 1 (Critical Tracking) |
- State Core Gen Ed Humanities | 3 |
the simplest to the most complex life forms, across all environments on
life. These studies range across all levels of the biological hierarchy, from
Biology is the study of the many diverse forms, processes and systems of
Foreign language
PCB 4674
BSC 4936
Select one:
Semester Eight
Elective (3000 level or above, not in major)
Foreign language
Taxonomic diversity course 2
Select one:
Semester Seven
Elective (3000 level or above, not in major)
Semester Six
Select one:
PCB 3063
AGR 3303
PCB 4522
PHY 2049
or PHY 2054
PHY 2049L
or PHY 2054L
Taxonomic diversity course 1
Electives (3000 level or above, not in major, if needed)
Credits
Select one:
Semester Five
PCB 4043C
PHY 2048
PHY 2048L
or PHY 2053
or PHY 2053L
Electives (3000 level or above, not in major, if needed)
Credits
Semester Four
BSC 2011
& 2011L
CHM 2211
or CHM 3218
CHM 2211L
Gen Ed Composition
Gen Ed Humanities
Credits
Credits
I = Introduced; R = Reinforced; A = Assessed
Courses
SLO 1
SLO 2
SLO 3
SLO 4
AGR 3303 or
PCB 3063 or
PCB 4522
ANS 3319C or
BSC 1920
BSC 2010

1 Select CHM 2211 if CHM 2210 was taken previously.

Biology is the study of the many diverse forms, processes and systems of
life. These studies range across all levels of the biological hierarchy, from
the simplest to the most complex life forms, across all environments on
the earth and across recent and evolutionary time that interconnects
ancestors to their descendants.

To understand this vast diversity, the field of biology correspondingly
relies on integrative and comparative approaches for the resolution of
the general processes, principles and unifying themes that govern living
systems. Biology is therefore very interdisciplinary and biologists rely on
knowledge from the physical sciences and mathematics, as well as from
across the disciplines and subdisciplines of biology for advances and
breakthroughs.

The biology major is administered jointly by the College of Agricultural
and Life Sciences and the College of Liberal Arts and Sciences.

Before Graduating Students Must

• Achieve a passing score for all content subsections of the Major
Field Test for Biology. Content subscore areas are molecular biology
and genetics, organismal biology, evolution, ecology and population
biology.

• Achieve a passing score on the analytical skills assessment indicator
of the Major Field Test for Biology.

• Achieve a passing score on the bioethics module quiz in BSC 4936.
The content of the module and quiz are reviewed and approved by a
faculty committee.

• Achieve a passing score on the scientific literacy paper assignment
given in BSC 4936. This paper is graded using a faculty-developed
rubric.

• Complete requirements for the baccalaureate degree, as determined
by faculty.

Students in the Major Will Learn to
Student Learning Outcomes (SLOs)

Content

1. Identify, describe and explain the basic terminology, concepts,
methodologies and theories used within the biological sciences.

Critical Thinking

2. Analyze biological information and develop reasoned solutions to
problems using the processes and applications of scientific inquiry.

3. Discriminate ethical behavior from unethical behavior in scientific
research.

Communication

4. Communicate knowledge, ideas and reasoning clearly and effectively
in written or oral forms appropriate to the biological sciences.

Curriculum Map

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I = Introduced; R = Reinforced; A = Assessed
BSC 2011  I  I  I
BSC 4936  A  A  A  A
MCB 3020  R  R  R
and
MCB 3020L,
or PCB 3134
or PCB 4674

Assessment Types
• Major field test for biology
• Bioethics module
• Scientific literacy paper