**UCF Degree Programs**

**Biology (B.S.)**  
**College of Sciences**  
**Department of Biology, BL, Room: 301**  
**http://www.cos.ucf.edu/biology**  
**Email: biology@ucf.edu**  
**Phone: 407-823-2141**

**Admission Requirements**  
- None

**Degree Requirements**  
- Students who change degree programs and select this major must adopt the most current catalog.
- No credit by exam (TSD, Military credit) may be used for the major.
- Co-op or internship credit cannot be used in this major.
- Departmental Residency Requirement consists of at least 22 semester hours of regularly scheduled 3000-4000 level courses taken from the UCF Department of Biology.
- Students seeking a double major must satisfy the requirements for both majors and must take fewer than 40 semester hours of upper division restricted elective course work appropriate to the combined areas of specialization in the two majors.
- Courses designated in 2 (Common Program Prerequisites) and 3 (Core Requirements) are usually completed in the first 60 hours.
- Biology majors must earn a “C” (2.0) or better in all Core courses with a BSC or PCB prefix in order to satisfy the requirement.
- All prerequisites of courses taught within the College of Sciences will be enforced.
- No more than 4 hours of Independent Study, Directed Research, or the following similar types of credit, may be applied toward major requirements:
  - BSC 4422L Biology Laboratory Techniques 1 hr
  - BSC 4937 Instructional Experiences in Undergraduate Biology

Upon reaching junior standing, Biology majors are expected to have completed the following courses and associate chemistry laboratories. These classes are prerequisites for advanced science classes and students entering the major without these classes will be unable to register for most of the advanced courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BSC 2010C Biology I</td>
<td>4 hrs</td>
</tr>
<tr>
<td>BSC 2011C Biology II</td>
<td>4 hrs</td>
</tr>
<tr>
<td>CHM 2045C Chemistry Fundamentals I</td>
<td>4 hrs</td>
</tr>
<tr>
<td>CHM 2046 Chemistry Fundamentals II</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHM 2046L Chemistry Fundamentals Laboratory</td>
<td>1 hr</td>
</tr>
<tr>
<td>CHM 2210 Organic Chemistry I</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHM 2211 Organic Chemistry II</td>
<td>3 hrs</td>
</tr>
<tr>
<td>CHM 2211L Organic Laboratory Techniques</td>
<td>2 hrs</td>
</tr>
<tr>
<td>PHY 2053C College Physics I</td>
<td>4 hrs</td>
</tr>
<tr>
<td>PHY 2054C College Physics II</td>
<td>4 hrs</td>
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</tbody>
</table>

1. **UCF General Education Program (GEP) (38 hrs)**  
- Note: Certain courses must be selected in the GEP for this major, bringing the total GEP hours to more than 36.

<table>
<thead>
<tr>
<th>A: Communication Foundations (9 hrs)</th>
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</thead>
<tbody>
<tr>
<td>Required ENC 1101 Composition I</td>
</tr>
<tr>
<td>Required ENC 1102 Composition II</td>
</tr>
<tr>
<td>Prefer SPG 1603C Fundamentals of Technical Presentations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B: Cultural &amp; Historical Foundations (9 hrs)</th>
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</thead>
<tbody>
<tr>
<td>C: Mathematical Foundations (6 hrs)</td>
</tr>
<tr>
<td>Mathematics: 3 hrs</td>
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</tbody>
</table>

- Note: Prior to enrolling in Math, take Math Placement Test ~ http://utc.sdes.ucf.edu/math/
- Suggested MAC 2233 Concepts of Calculus or 3 hrs
- Suggested MAC 2233 Applied Calculus or 3 hrs
- Prefer MAC 2311C Calculus with Analytic Geometry I 4 hrs

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required STA 2023 Statistical Methods I</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

2. **Common Program Prerequisites (CPP) (16 hrs)**  
- See “Common Prerequisites” in the Transfer and Transitions Services section for more information.
- See Transfer Notes for possible substitutes for the following courses.

**Biology:**  
- BSC 2010C Biology I 4 hrs
- BSC 2011C Biology II 4 hrs

**Chemistry:**  
- CHM 2045C Chemistry Fundamentals I 4 hrs
- CHM 2044 Chemistry Fundamentals IA and 3 hrs
- CHM 2044 Chemistry Fundamentals IB 3 hrs
- CHM 2046 Chemistry Fundamentals II 3 hrs
- CHM 2046L Chemistry Fundamentals Laboratory 1 hr

**Math:**  
- Select one math course and this statistics course.
- MAC 2233 Concepts of Calculus or GEP
- MAC 2253 Applied Calculus or GEP
- MAC 2311C Calculus with Analytic Geometry I or GEP
- STA 2023 Statistical Methods I or GEP

**Physics:**  
- Complete one entire sequence 8 hrs
- PHY 2053C College Physics I 4 hrs
- PHY 2054C College Physics II 4 hrs

**- or**  
- PHY 2048C Physics for Engineers & Scientists I 4 hrs
- PHY 2049C Physics for Engineers and Scientists II 4 hrs

3. **Core Requirements: Basic Level (8 hrs)**  
- All courses specifically identified in the preceding Common Program Prerequisites section of this catalog are also required in the Basic Core;

- **Basic Core: Required, satisfies the CPP**
  - Biology:  
    - Note: a minimum grade of “C” (2.0) is required in these Biology courses to satisfy the requirement, and to allow their use as a course prerequisite.
    - BSC 2010C Biology I and GEP/CPP
      - BSC 2011C Biology II GEP/CPP
  - Chemistry:  
    - CHM 2045C Chemistry Fundamentals I GEP/CPP
      - CHM 2044 Chemistry Fundamentals IA and GEP/CPP
      - CHM 2044 Chemistry Fundamentals IB GEP/CPP
      - CHM 2046 Chemistry Fundamentals II GEP/CPP
      - CHM 2046L Chemistry Fundamentals Laboratory GEP/CPP
  - Math:  
    - Select one math course and this statistics course.
      - MAC 2233 Concepts of Calculus or GEP
      - MAC 2253 Applied Calculus or GEP
      - MAC 2311C Calculus with Analytic Geometry I or GEP
      - STA 2023 Statistical Methods I or GEP
  - Physics:  
    - Complete one entire sequence 8 hrs
      - PHY 2053C College Physics I 4 hrs
      - PHY 2054C College Physics II 4 hrs
      - PHY 2048C Physics for Engineers & Scientists I 4 hrs
      - PHY 2049C Physics for Engineers and Scientists II 4 hrs
Students planning on entering professional or graduate school may wish to take additional Calculus courses. Students are urged to consult their departmental advisor. Restrictive Electives must be taken within the UCF Biology Department.

5. Restricted Electives (22 hrs)
Courses must be selected from the groupings listed below:
- Student must complete at least one course dealing exclusively with botany.
- At least three credit hours from each group must be completed.
- Transferred courses must be at a 3000 level or higher, and be evaluated by the undergraduate program coordinator, in order to count as an Upper Division Restricted Elective.
- Courses at the 5000 level are only open to seniors and beginning graduate students.

Form/Function: Complete a minimum of one lecture course from this group.

Math:
- Students planning on entering professional or graduate school may wish to take additional Calculus courses. Students are urged to consult their departmental advisor.
- MAC 2233 Concepts of Calculus or MAC 2233 Applied Calculus or MAC 2311C Calculus with Analytic Geometry I
- and
- STA 2023 Statistical Methods I

Physics: Complete one entire sequence
- PHY 2053C College Physics I and PHY 2054C College Physics II
- or
- PHY 2048C Physics for Engineers & Scientists I and PHY 2049C Physics for Engineers and Scientists II

Basic Core: Additional Requirements
Chemistry:
- Students planning on entering professional or graduate school should take Biochemistry and will thus need a year of Organic Chemistry. Students are urged to consult their departmental advisor.

Complete one entire sequence 8 hrs
- CHM 2210 Organic Chemistry I and 3 hrs
- CHM 2211 Organic Chemistry II and 3 hrs
- CHM 2211L Organic Laboratory Techniques I and 2 hrs

- or:
- CHM 2205 Introduction to Organic and Biochemistry and 9 hrs
- CHM 3120 Analytical Chemistry and 3 hrs
- CHM 3120L Analytical Chemistry Laboratory 1 hr

4. Core Requirements: Advanced Level (13 hrs)
- Note: a minimum grade of "C" (2.0) is required in these Biology courses to satisfy the requirement, and to allow their use as a course prerequisite.

Select primarily from upper level courses after consulting with your departmental advisor. May be outside Biology department.

5. Restricted Electives (22 hrs)
Courses must be selected from the groupings listed below:
- Student must complete at least one course dealing exclusively with botany and one course dealing exclusively with zoology.
- At least three credit hours from each group must be completed.
- At least 10 hours of the Upper Division Restricted electives must be taken within the UCF Biology Department. Courses offered by the Department of Biology have been identified. Additional courses may be used to meet a group requirement with approval of the undergraduate program coordinator via petition.
- Transferred courses must be at a 3000 level or higher, and be evaluated by the undergraduate program coordinator, in order to count as an Upper Division Restricted Elective.
- Courses at the 5000 level are only open to seniors and beginning graduate students.

Form/Function: Complete a minimum of one lecture course from this group.

BCH 4053 Biochemistry I or 3 hrs
BCH 4054 Biochemistry II or 3 hrs
1 BOT 4223C Plant Anatomy or 4 hrs
1 BOT 4303C Plant Physiology or 5 hrs
1 PCB 5003 Plant Physiology or 3 hrs
2 PCB 4675 Evolution and Medicine or 3 hrs
2 PCB 4677L Evolutionary Biology Lab or 1 hr
2 PCB 4694 Population Genetics or 3 hrs
2 PCB 4723 Animal Physiology or 4 hrs
2 PCB 5005 Population Genetics or 3 hrs
2 ZOO 3713C Comparative Vertebrate Anatomy or 5 hrs
ZOO 3733C Human Anatomy or 4 hrs
ZOO 4603C Embryology/Development or 5 hrs
ZOO 4753C Vertebrate Histology or 4 hrs
1 Fulfills Botany requirement. Offered in Biology department.
2 Offered in Biology department.
3 Fulfills Zoology requirement. Offered in Biology department.

Environmental 3 hrs
Complete a minimum of one lecture course from this group.
1 BOT 3012C Culinary Botany Across the Cultures or 3 hrs
1 BOT 3152C Local Flora or 3 hrs
1 BOT 3802 Ethnobotany or 3 hrs
1 BOT 4850 Medicinal Botany or 3 hrs
BSC 3052 Conservation Biology or 3 hrs
1 BSC 3312 Principles of Marine Biology or 3 hrs
BSC 4312C Advanced Marine Biology or 4 hrs
BSC 4330 Invasion Biology or 3 hrs
BSC 4821 Biogeography or 4 hrs
BSC 4861L Viable Environmental Protection or 3 hrs
1 Fulfills Botany requirement. Offered in Biology department.
2 Offered in Biology department.
3 Fulfills Zoology requirement. Offered in Biology department.

Systematic 3 hrs
Complete a minimum of one lecture course from this group.
1 ANT 3500C Primatology or 3 hrs
1 BOT 4434C General Mycology or 4 hrs
1 BOT 4713C Plant Taxonomy or 5 hrs
1 ENV 4004C General Entomology or 4 hrs
1 ENV 5006C Entomology or 4 hrs
1 MCB 3020C General Microbiology or 5 hrs
2 ZOO 4205C Biology and Ecology of Metazoan Invertebrates or 4 hrs
2 ZOO 4312C Vertebrate Evolution & Ecology or 4 hrs
2 ZOO 4480 Mammalogy or 4 hrs
2 ZOO 5456C Ichthyology or 4 hrs
2 ZOO 5463C Herpetology or 4 hrs
2 ZOO 5470L Field Ornithology or 3 hrs
1 Fulfills Botany requirement. Offered in Biology department.
2 Offered in Biology department.
3 variable credit 2-5 hours
4 Fulfills Zoology requirement. Offered in Biology department.

6. Capstone Requirements
- None

7. Foreign Language Requirements
Admissions
- Admission: Two years of one foreign language in high school, or one year of one foreign language in college (or equivalent proficiency exam) prior to graduation.

Graduation
- None

8. Electives
- Select primarily from upper level courses after consulting with your departmental advisor. May be outside of the department.
Plan of Study

This is one of numerous possible plans of study. See program description for all requirements. Consult a departmental advisor for alternate, new or more appropriate selections.

Prior to enrolling in CHM 2045C, take Chemistry Placement Test. Instructions are at http://knightsource.sdes.ucf.edu/placement

Prior to enrolling in Math, take Math Placement Test at http://utc.sdes.ucf.edu/math/

Although all classes are listed as being taken during the academic year, you may be required to complete 9 hours of them during the Summer. Consult with an advisor to determine if you are exempt

### Freshman Year - Fall

- **15 hrs**
  - MAC 2311C Calculus with Analytic Geometry I 4 hrs
  - CHM 2045C Chemistry Fundamentals I 4 hrs
  - Math Course, depending on placement score 4 hrs
  - ENC 1101 Composition I 3 hrs

### Freshman Year - Spring

- **14 hrs**
  - BSC 2011C Biology II 4 hrs
  - CHM 2046 Chemistry Fundamentals II 3 hrs
  - CHM 2046L Chemistry Fundamentals Laboratory 1 hr
  - Note: This lab may be taken in a later term if seats are not available.
  - ENC 1102 Composition II 3 hrs
  - Elective or Math course if needed 3 hrs

### Sophomore Year - Fall

- **13 hrs**
  - MAC 2311C Calculus with Analytic Geometry I 4 hrs
  - CHM 2211 Organic Chemistry I 3 hrs
  - PCB 3063 Genetics 3 hrs
  - PCB 3044 Principles of Ecology 3 hrs

### Sophomore Year - Spring

- **16 hrs**
  - CHM 2211 Organic Chemistry II 3 hrs
  - CHM 2211L Organic Laboratory Techniques I 2 hrs
  - Note: This lab may be taken in a later term if seats are not available.
  - STA 2023 Statistical Methods I 3 hrs
  - Restricted Elective 5 hrs
  - GEP 3 hrs

### Junior Year - Fall

- **15 hrs**
  - PHY 2053C College Physics I 4 hrs
  - PCB 3023 Molecular Cell Biology 3 hrs
  - Restricted Elective 5 hrs
  - Elective 3 hrs

### Junior Year - Spring

- **15 hrs**
  - PHY 2054C College Physics II 4 hrs
  - Restricted Elective 4 hrs
  - GEP 3 hrs
  - Elective 4 hrs

### Senior Year - Fall

- **16 hrs**
  - PCB 4683 Evolutionary Biology 4 hrs
  - Restricted Elective 4 hrs
  - GEP 3 hrs
  - GEP 3 hrs
  - Elective 2 hrs

### Senior Year - Spring

- **16 hrs**
  - Restricted Elective 4 hrs
  - GEP 3 hrs
  - GEP 3 hrs
  - Elective 3 hrs

Program Academic Learning Compacts

Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at: http://www.oecs.ucf.edu/academiclearningcompacts.html

Equipment Fees

- Part-Time Student: $24.85 per term
- Full-Time Student: $49.70 per term