UCF Degree Programs

Biology - Preprofessional Concentration (B.S.)
College of Sciences
Department of Biology, Biology, Room: 301
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The Biology major offers excellent preparation for professional school. The curriculum is broadly based and provides a well-rounded education that is appealing to admission committees and valuable for careers in medicine, dentistry, optometry, pharmacy and veterinary medicine. This curriculum suggests choices within the Biology major that may be more relevant to preprofessional majors.

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 Biology Department.
■ Students seeking a double major must satisfy the requirements for both majors and must take no fewer than 40 semester hours of upper division restricted elective course work appropriate to the combined areas of specialization in the two majors.
■ 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.
■ Courses designated in 2 (Common Program Prerequisites) and 3 (Core Requirements) are usually completed in the first 60 hours.
■ 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 4537 Instructional Experiences in Undergraduate Biology 2 hrs
■ Upon reaching junior standing (60 hours), Biology majors are expected to have completed the following courses. These classes are prerequisites for advanced science classes and students entering without these classes will be unable to register for most of the advanced courses.
  - BSC 2010C Biology I 4 hrs
  - BSC 2011C Biology II 4 hrs
  - CHM 2040 Chemistry Fundamentals IA 3 hrs
  - CHM 2041 Chemistry Fundamentals IB 3 hrs
  - CHM 2046 Chemistry Fundamentals II 3 hrs
  - CHM 2046L Chemistry Fundamentals Laboratory 1 hr
  - CHM 2210 Organic Chemistry I 3 hrs
  - CHM 2211 Organic Chemistry II 3 hrs
  - PHB 2502C College Physics I 4 hrs
  - PHB 2504C College Physics II 4 hrs
  - PHY 2053C College Physics I 4 hrs
  - PHY 2054C College Physics II 4 hrs

1. UCF General Education Program (GEP) (39 hrs)
■ Note: Certain courses must be selected in the GEP for this major, bringing the total GEP hours to more than 36.

A: Communication Foundations (9 hrs)
Required ENC 1151 Composition I 3 hrs
Required ENC 1102 Composition II 3 hrs
Prefer SPC 1603 Fundamentals of Technical Presentations 3 hrs

B: Cultural & Historical Foundations (9 hrs)

C: Mathematical Foundations (7 hrs)
Mathematics:
■ Note: Prior to enrolling in Math, take Math Placement Test – http://utc.sdes.ucf.edu/
  - Required MAC 2311C Calculus with Analytic Geometry I 4 hrs

Statistics:
■ Required STA 2023 Statistical Methods I 3 hrs

D: Social Foundations (6 hrs)
■ Note: a minimum grade of “C” (2.0) is required for this Biology course to be used as a prerequisite.
  - Required BSC 2010C Biology I 4 hrs

Select the sequence identified by the Chemistry Placement exam:
■ Note: Prior to enrolling in Chemistry, take Chemistry Placement Test – http://chemplacement.sdes.ucf.edu/
  - For students with a strong chemistry background and a high Chemistry Placement score
    Required CHM 2045C Chemistry Fundamentals I 4 hrs
  - or - Students with little chemistry background should take this two semester equivalent instead.
    Required CHM 2040 Chemistry Fundamentals IA 3 hrs
    Required CHM 2041 Chemistry Fundamentals IB 3 hrs

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 courses listed below.
■ Although other courses may satisfy the CPP, these specifically satisfy the major requirements or are better for preprofessional students.

Biology:
■ Note: a minimum grade of “C” (2.0) is required in these Biology courses to allow their use as a prerequisite. While a lower grade may satisfy the CPP, it will not satisfy the major.
  - BSC 2010C Biology I and GEP
  - BSC 2011C Biology II 4 hrs

Chemistry:
■ Take Placement test before starting chemistry; http://chemplacement.sdes.ucf.edu
  - CHM 2040 Chemistry Fundamentals IA and GEP
  - CHM 2041 Chemistry Fundamentals IB GEP
  - and:
    - CHM 2046 Chemistry Fundamentals II and 3 hrs
    - CHM 2046L Chemistry Fundamentals Laboratory 1 hr

Math:
■ Note: Prior to enrolling in Math, take Math Placement Test – http://utc.sdes.ucf.edu/
  - Required MAC 2311C Calculus with Analytic Geometry I and GEP
  - STA 2023 Statistical Methods I and GEP

Physics:
■ Note: Prior to enrolling in Physics, take Physics Placement Test – http://physplacement.sdes.ucf.edu/
  - Required PHY 2045C Physics for Engineers & Scientists I and GEP
  - PHY 2049C Physics for Engineers and Scientists II 4 hrs
3. Core Requirements: Basic Level (8 hrs)
- All courses specifically identified in the proceeding Common Program Prerequisites section of this catalog are also required in the Basic Core, and must be taken along with the following:

**Basic Core: Required, satisfies the CPP**
- 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
  - BSC 2011C: Biology II

**Chemistry:**
- CHM 2045C: Chemistry Fundamentals I
- or
  - CHM 2040: Chemistry Fundamentals IA
  - CHM 2041: Chemistry Fundamentals IB
- and
  - CHM 2046: Chemistry Fundamentals II
  - CHM 2046L: Chemistry Fundamentals Laboratory

**Math:**
- MAC 2311C: Calculus with Analytic Geometry I and
- STA 2023: Statistical Methods I

**Physics:**
- PHY 2048C: Physics for Engineers & Scientists I or
- PHY 2049C: Physics for Engineers & Scientists II

**Basic Core: Additional Requirements**
- CHM 2210: Organic Chemistry I and
- CHM 2211: Organic Chemistry II and
- CHM 2211L: Organic Laboratory Techniques I

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.
  - PCB 3023: Molecular Cell Biology
  - PCB 3044: Principles of Ecology
  - PCB 3063: Genetics
  - PCB 4683: Evolutionary Biology

5. Restricted Electives (22 hrs)
The following is a suggested subset of the Biology Restricted Electives which may be more appropriate for many professional schools.
- Student must complete at least one course dealing exclusively with zoology and one course dealing exclusively with botany.
- 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.
- 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.
- Consult a departmental advisor and be cognizant of the professional school’s requirements. For complete listing, see Biology B.S. degree program.

**Form/Function**
2 hrs from this group.
- Because of the large number of courses taught in other departments, students must ensure they complete the required hours to be taken within the UCF Biology Department.
  - BCH 4053: Biochemistry I or
  - BCH 4054: Biochemistry II or
  - PCB 3063L: Genetics Laboratory or
  - PCB 3233: Immunology or
  - PCB 3703C: Human Physiology or
  - PCB 4514: Genetics II or
  - PCB 4678: Evolution and Medicine or
  - PCB 4723: Animal Physiology or
  - ZOO 3733C: Human Anatomy or
  - ZOO 4603C: Embryology/Development or
  - ZOO 4753C: Human Histology

1 Offered in Biology department.
2 Fulfills Zoology requirement. Offered in Biology department.

Environmental
Complete a minimum of one lecture course from this group.
- BOT 3802: Ethnobotany or
- BOT 4850: Medicinal Botany

1 Fulfills Botany requirement. Offered in Biology department.

**Systematic**
Complete a minimum of one lecture course from this group.
- ANT 3550C: Primatology or
- MCB 3020C: General Microbiology or
- ZOO 4205C: Invertebrates or
- ZOO 4310C: Vertebrate Evolution & Ecology

1 Fulfills Zoology requirement. Offered in Biology department.

6. Capstone Requirements
- None

7. Foreign Language Requirements

**Admissions**
- 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**
- Spanish is highly recommended.

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

9. Additional Requirements
- None

10. Required Minors
- None

11. Departmental Exit Requirements
- A minimum GPA of 2.0 in all UCF courses taken in the Common Program Prerequisites, the Biology Core and the Upper Division Restricted Electives.
- Students will be required to take a comprehensive exam in biology during their last semester. Students must take the exam during their term of graduation, and must earn a passing score.
- Biology majors are discouraged from taking courses as a transient student at a community college, except in situations where the first semester of a two semester sequence has already been taken at the community college.

12. University Minimum Exit Requirements
- A 2.0 UCF GPA
- 60 semester hours earned after CLEP awarded
- 48 semester hours of upper division credit completed
- 30 of the last 39 hours of course work must be completed in residency at UCF
- A maximum of 45 hours of extension, correspondence, CLEP, Credit by Exam, and Armed Forces credits permitted
- Complete the General Education Program, the Gordon Rule, and nine hours of Summer credit

**Total Semester Hours Required**
- 120

**Honors In Major**
- None
UCF Degree Programs

Related Programs
- Biology
- Chemistry
- Biomedical Sciences

Certificates
- None

Related Minors
- Biology
- Biomedical Sciences

Advising Notes
- Students are urged to contact their departmental advisor before registering for courses.
- It is the student’s responsibility to ensure they have satisfied course prerequisites before registering for a class.
- Students are strongly encouraged to work with the Office of Pre-Professional Advising (Ferrell Commons, Bldg 7G, Room 215C; 407-823-3033).
- An analysis of the success and failure of students on recent MCAT examinations has led the department to suggest that a student should have completed all of the Biology core courses (sections 3 and 4) and the following courses prior to taking the MCAT exam:
  - MCB 3020C  General Microbiology  5 hrs
  - PCB 4524  Molecular Biology II  3 hrs

Transfer Notes
- Lower Division courses taken at community colleges do not substitute for Upper Division courses.
- Courses transferred from private and out-of-state schools must be evaluated by the undergraduate program coordinator for equivalency credit. The student must provide all supporting information.

Acceptable Substitutes for Transfer Courses
- The following substitutions are acceptable for common program prerequisites if taken as part of the AA course work:
  - BSC 2010C: May substitute the Honors version BSC X040C. Although the CPP is satisfied by PCB X011C, it will not satisfy prerequisites for subsequent Biology courses.
  - BSC 2011C: May substitute the Honors version BSC X041C or both ZOO X010C and BOT X010C.
  - CHM 2045C: May use CHM X040 plus CHM X041.
  - Physics: although the CPP is satisfied by Organic Chemistry, both subjects are required by the degree program and both must be taken.
  - Statistics: although a number of math and statistics course will satisfy the CPP, this statistics course is required in the program.

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 Chemistry, take Chemistry Placement Test – http://chemplacement.sdes.ucf.edu/
- Prior to enrolling in Math, take Math Placement Test – http://utc.sdes.ucf.edu/
- 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 16 hrs
- CHM 2210  Organic Chemistry I  3 hrs
- PCB 3044  Principles of Ecology  3 hrs
- MAC 2311C  Calculus with Analytic Geometry I  4 hrs
- STA 2023  Statistical Methods I  3 hrs
- GEP 3 hrs

Freshman Year - Spring 15 hrs
- CHM 2211  Organic Chemistry II  3 hrs
- CHM 2211L  Organic Laboratory Techniques I  2 hrs
- May be taken in a later term if seats are not available.
- PCB 2083  Genetics  3 hrs
- PCB 2212  Calculus with Analytic Geometry II  4 hrs
- GEP 3 hrs

Junior Year - Fall 16 hrs
- PHY 2048C  Physics for Engineers & Scientists I  4 hrs
- PCB 3023  Molecular Cell Biology  3 hrs
- Restricted Elective  3 hrs
- Restricted Elective  3 hrs
- GEP 3 hrs

Senior Year - Fall 15 hrs
- Restricted Elective  4 hrs
- Restricted Elective  4 hrs
- GEP 3 hrs
- GEP 3 hrs
- Free Elective  2 hrs

Senior Year - Spring 14 hrs
- Restricted Elective  4 hrs
- Restricted Elective  3 hrs
- Free Elective  4 hrs
- Free Elective  3 hrs

Program Academic Learning Compacts
- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at: http://www.oeas.ucf.edu/alc/academic_learning_compacts.htm

Equipment Fees
- Part-Time Student: $19 per term
- Full-Time Student: $38 per term