UCF Degree Programs

Chemistry - Biochemistry Track (B.S.)
College of Sciences
Department of Chemistry,
Physical Sciences, Room: 255
http://www.cos.ucf.edu/chemistry
Email: pedro.patino@ucf.edu

Dr. Pedro Patino
Phone: 407-823-2246

Admission Requirements
■ None

Degree Requirements
■ Students who change degree programs and select this major must adopt the most current catalog.
■ Co-op or internship credit cannot be used in the major.
■ Students should consult with a departmental advisor before registering.
■ Departmental Residency Requirement consists of at least 30 semester hours of regularly scheduled 3000-4000 level courses taken from the UCF Department of Chemistry.
■ Chemistry majors are discouraged from taking courses as a transient student at a Florida College System institution, except in situations where one semester of a two semester sequence has already been taken at the Florida College System institution.
■ All prerequisites of courses taught within the College of Sciences will be enforced.
■ Courses designated in 2 (Common Program Prerequisites) are usually completed in the first 60 hours. Courses designated in 1 (General Education Program) typically are spread throughout the 120 hours.
■ AA transfer students are expected to have completed all of the following courses before enrolling as a Chemistry major; 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.

1. UCF General Education Program (GEP) (39 hrs)
■ Note: Certain courses must be selected in the GEP for this major, which brings the GEP hours above 36.

A: Communication Foundations (9 hrs)
Required ENC 1101 Composition I 3 hrs
Required ENC 1102 Composition II 3 hrs
Prefer SPC 1608 Fundamentals of Oral Communication 3 hrs

B: Cultural & Historical Foundations (9 hrs)
Required MAC 2311C Calculus with Analytic Geometry I 4 hrs
Prefer STA 2023 Statistical Methods I 3 hrs

C: Mathematical Foundations (7 hrs)
Required STA 2023 Statistical Methods I 3 hrs

D: Social Foundations (6 hrs)

E: Science Foundations (8 hrs)
Required PHY 2048C General Physics Using Calculus I 4 hrs
Required BSC 2010C Biology I 4 hrs

2. Common Program Prerequisites (CPP) (20 hrs)
Select either:
CHM 2045C Chemistry Fundamentals I 4 hrs
- or
CHM 2040 Chemistry Fundamentals IA and 3 hrs
CHM 2041 Chemistry Fundamentals IB 3 hrs
- and complete all the following 24 hrs
CHM 2046 Chemistry Fundamentals II and 3 hrs
CHM 2046L Chemistry Fundamentals Laboratory and 1 hr
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
MAC 2311C Calculus with Analytic Geometry I and 4 hrs
MAC 2312 Calculus with Analytic Geometry II and 4 hrs
PHY 2048C General Physics Using Calculus I and 4 hrs
PHY 2049C General Physics Using Calculus II 4 hrs

3. Core Requirements: Basic Level (10 hrs)
■ All courses specifically identified in the preceding Common Program Prerequisites section of this catalog are also required in the Basic Core, and must be taken.

Basic Core: Required, satisfies the CPP
Select either:
CHM 2045C Chemistry Fundamentals I 4 hrs
- or
CHM 2040 Chemistry Fundamentals IA and 3 hrs
CHM 2041 Chemistry Fundamentals IB and 3 hrs
- and
CHM 2046 Chemistry Fundamentals II and 3 hrs
CHM 2046L Chemistry Fundamentals Laboratory and 1 hr
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
MAC 2311C Calculus with Analytic Geometry I and 4 hrs
MAC 2312 Calculus with Analytic Geometry II and 4 hrs
PHY 2048C General Physics Using Calculus I and 4 hrs
PHY 2049C General Physics Using Calculus II and 4 hrs

Basic Core: Additional Requirements 10 hrs
BSC 2010C Biology I and 3 hrs
CHM 3120 Analytical Chemistry and 3 hrs
CHM 3120L Analytical Chemistry Laboratory and 1 hr
CHM 3215L Organic Laboratory Techniques II and 2 hrs
MAC 2313 Calculus with Analytic Geometry III and 4 hrs
- and either
STA 2023 Statistical Methods I or 3 hrs
STA 1063C Basic Statistics Using Microsoft Excel and 3 hrs

4. Core Requirements: Advanced Level (37 hrs)

BCH 4053 Biochemistry I 3 hrs
BCH 4054 Biochemistry II 3 hrs
BCH 4103L Biochemical Methods 2 hrs
CHM 3410 Physical Chemistry I 4 hrs
CHM 3411 Physical Chemistry II 3 hrs
CHM 3411L Inorganic Chemistry 3 hrs
CHM 4610 Inorganic Chemistry 3 hrs
CHM 4912 Directed Independent Research 4 hrs
CHM 4930 Chemistry Seminar I 1 hr
CHM 4931 Chemistry Seminar II 1 hr
MCB 3020C General Microbiology 5 hrs
PCB 3023 Molecular Cell Biology 3 hrs
PCB 3063 Genetics 3 hrs

5. Restricted Electives (10 hrs)
Select from the following:
CHM 4130 Advanced Analytical Laboratory Technique 3 hrs
CHM 4906 Directed Independent Study 1 hr
CHM 5225 Advanced Organic Chemistry 3 hrs
PCB 3522 Molecular Biology I 3 hrs

Additional upper level courses as approved by a departmental advisor

One of the following may be used as a
Restricted Elective:
CHM 4220 Organic Chemistry III or 3 hrs
CHM 5225 Advanced Organic Chemistry 3 hrs
Additional physical, biological, and mathematical sciences courses.
- In addition to those listed above, course selected with the aid of a departmental advisor and approved in advance by the department chair may also be used.
- These courses should be at least at the 3000 level.

6. Capstone Requirements
- None

7. Foreign Language Requirements
- Admissions
  - Two years high school, or one year college language (or equivalent proficiency exam) prior to graduation.
- Graduation
  - None

8. Electives
- Select primarily from upper level courses after meeting with a departmental advisor. Courses may be outside the department.

9. Additional Requirements
- Complete a minimum of 30 Chemistry credits from the UCF Chemistry Department.
- Students must earn at least a “C” (2.0) or better in each UCF Chemistry course used to satisfy the major.
- Students must maintain a minimum cumulative GPA of 2.0 in all UCF Chemistry courses.
- Students must maintain a minimum cumulative GPA of 2.0 in all Chemistry courses.
- For both cumulative GPA calculations, all attempts of courses that could meet requirements are included, with the exception of CHM4912, CHM4930 and CHM4931.
- Additional courses that could meet requirements but are taken beyond the minimum required (e.g., additional restricted electives taken beyond the required 10 hours) and a “C” (2.0) or better is earned, are also included in the major GPA calculations.
- The last 30 credit hours of regularly scheduled courses that satisfy degree requirements must be taken in Residence at UCF.

10. Required Minors
- None

11. Departmental Exit Requirements
- Students are required to take a nationally normed test in Chemistry and biochemistry during their last semester. The exam will be given in the Fall and Spring semesters. Students who plan to graduate in the Summer must take the exam in the Spring. The student must achieve a satisfactory score on the exam.
- Students are required to submit an undergraduate research report for evaluation no later than the date posted by the department in the semester they intend to graduate. The report must meet or exceed departmental requirements established for the report.

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 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

Related Programs
- Biology
- Chemistry
- Forensic Science - Analysis Track
- Forensic Science - Biochemistry Track
- Biomedical Sciences

Certificates
- None

Related Minors
- Chemistry
- Biology
- Biomedical Sciences

Advising Notes
- None

Transfer Notes
- Lower division courses do not substitute for upper division courses.
- Courses transferred from private and out-of-state schools must be evaluated for equivalency credit. The student must provide all supporting information.

Acceptable Substitutes for Transfer Courses
- The following Common Program Prerequisite courses may be satisfied by the following courses if taken prior to transferring to UCF:
  - CHM 2045C: May use CHM X040C plus CHM X041C.
  - Physics: Although the CPP allows substitution by other physics courses or Organic Chemistry, both the specified Physics and Organic Chemistry classes are required in the major and will still have to be taken.

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://knightsource.sdes.ucf.edu/placement
- Prior to enrolling in Math, take Math Placement Test ~ http://knightsource.sdes.ucf.edu/placement
- 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
- CHM 2045C: Chemistry Fundamentals I 4 hrs
- MAC 2311C: Calculus with Analytic Geometry I 4 hrs
- BSC 2010C: Biology I 4 hrs
- ENC 1101: Composition I 3 hrs

Freshman Year - Spring
- BCH 4054: Biochemistry II 3 hrs
- CHM 2046L: Chemistry Fundamentals Laboratory 1 hr
- MAC 2312: Calculus with Analytic Geometry II 4 hrs
- ENC 1102: Composition II 3 hrs
- GE
- GE
- GE

Sophomore Year - Fall
- CHM 2210: Organic Chemistry I 3 hrs
- PHY 2046C: General Physics Using Calculus I 4 hrs
- MAC 2313: Calculus with Analytic Geometry III 4 hrs
- Statistics 3 hrs

Sophomore Year - Spring
- CHM 2211: Organic Chemistry II 3 hrs
- CHM 2211L: Organic Laboratory Techniques I 2 hrs
- PCB 3063: Genetics 3 hrs
- CHM 3120: Analytical Chemistry 3 hrs
- CHM 3120L: Analytical Chemistry Laboratory 1 hr
- PHY 2049C: General Physics Using Calculus II 4 hrs
- PC

Junior Year - Fall
- BCH 4053: Biochemistry I 3 hrs
- CHM 3215L: Organic Laboratory Techniques II 2 hrs
- PCB 3023: Molecular Cell Biology 3 hrs
- GE
- GE
- GE

Junior Year - Spring
- BCH 4054: Biochemistry II 3 hrs
- CHM 4103L: Physical Chemistry 2 hrs
- MCB 3020C: General Microbiology 5 hrs
- GE
- GE

University of Central Florida
### Senior Year - Fall

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<tr>
<td>CHM 4930</td>
<td>Chemistry Seminar I</td>
<td>1 hr</td>
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<tr>
<td>Restricted Elective</td>
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### Senior Year - Spring

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<tr>
<td>CHM 3411L</td>
<td>Physical Chemistry Laboratory</td>
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<tr>
<td>CHM 4610</td>
<td>Inorganic Chemistry</td>
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<td>CHM 4912</td>
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### Program Academic Learning Compacts
- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at: [http://www.oecs.ucf.edu/alc/academic_learning_compacts.htm](http://www.oecs.ucf.edu/alc/academic_learning_compacts.htm)

### Equipment Fees
- Part-Time Student: $45 per term
- Full-Time Student: $90 per term