

## 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](mailto: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.
- |           |                                    |       |
|-----------|------------------------------------|-------|
| CHM 2045C | Chemistry Fundamentals I           | 4 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 |
| CHM 2211L | Organic Laboratory Techniques I    | 2 hrs |
| MAC 2311C | Calculus with Analytic Geometry I  | 4 hrs |
| MAC 2312  | Calculus with Analytic Geometry II | 4 hrs |
| PHY 2048C | General Physics Using Calculus I   | 4 hrs |
| PHY 2049C | General Physics Using Calculus II  | 4 hrs |

#### 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)

#### C: Mathematical Foundations (7 hrs)

Required	MAC 2311C Calculus with Analytic Geometry I	4 hrs
Prefer	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	GEP
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	CPP
-----------	--------------------------	-----

##### - or

CHM 2040	Chemistry Fundamentals IA and	CPP
CHM 2041	Chemistry Fundamentals IB	CPP

##### - and

CHM 2046	Chemistry Fundamentals II and	CPP
CHM 2046L	Chemistry Fundamentals Laboratory and	CPP
CHM 2210	Organic Chemistry I and	CPP
CHM 2211	Organic Chemistry II and	CPP
CHM 2211L	Organic Laboratory Techniques I and	CPP
MAC 2311C	Calculus with Analytic Geometry I and	GEP/CPP
MAC 2312	Calculus with Analytic Geometry II and	CPP
PHY 2048C	General Physics Using Calculus I and	GEP/CPP
PHY 2049C	General Physics Using Calculus II	CPP

#### Basic Core: Additional Requirements 10 hrs

BSC 2010C	Biology I and	GEP
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
STA 2023	Statistical Methods I	GEP

#### 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	Physical Chemistry Laboratory	2 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 4220	Organic Chemistry III	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

#### 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

## UCF Degree Programs

### 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 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		15 hrs
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		17 hrs
CHM 2046	Chemistry Fundamentals II	3 hrs
CHM 2046L	Chemistry Fundamentals Laboratory	1 hr
Lab may be taken in a later term if seats are not available.		
MAC 2312	Calculus with Analytic Geometry II	4 hrs
ENC 1102	Composition II	3 hrs
GEP		3 hrs
GEP		3 hrs

Sophomore Year - Fall		14 hrs
CHM 2210	Organic Chemistry I	3 hrs
PHY 2048C	General Physics Using Calculus I	4 hrs
MAC 2313	Calculus with Analytic Geometry III	4 hrs
Statistics		3 hrs

Sophomore Year - Spring		16 hrs
CHM 2211	Organic Chemistry II	3 hrs
CHM 2211L	Organic Laboratory Techniques I	2 hrs
Lab may be taken in a later term if seats are not available.		
CHM 3120	Analytical Chemistry	3 hrs
CHM 3120L	Analytical Chemistry Laboratory	1 hr
PHY 2049C	General Physics Using Calculus II	4 hrs
PCB 3063	Genetics	3 hrs

Junior Year - Fall		14 hrs
BCH 4053	Biochemistry I	3 hrs
CHM 3215L	Organic Laboratory Techniques II	2 hrs
PCB 3023	Molecular Cell Biology	3 hrs
GEP		3 hrs
GEP		3 hrs

Junior Year - Spring		13 hrs
BCH 4054	Biochemistry II	3 hrs
BCH 4103L	Biochemical Methods	2 hrs
MCB 3020C	General Microbiology	5 hrs
GEP		3 hrs

Senior Year - Fall		17 hrs
CHM 3410	Physical Chemistry I	4 hrs
CHM 4912	Directed Independent Research	2 hrs
CHM 4930	Chemistry Seminar I	1 hr
Restricted Elective		3 hrs
Restricted Elective		4 hrs
Restricted Elective		3 hrs

Senior Year - Spring		14 hrs
CHM 4931	Chemistry Seminar II	1 hr
CHM 3411	Physical Chemistry II	3 hrs
CHM 3411L	Physical Chemistry Laboratory	2 hrs
CHM 4610	Inorganic Chemistry	3 hrs
CHM 4912	Directed Independent Research	2 hrs
GEP		3 hrs

## UCF Degree Programs

---

### **Program Academic Learning Compacts**

■ Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at:  
[http://www.oas.ucf.edu/alc/academic\\_learning\\_compacts.htm](http://www.oas.ucf.edu/alc/academic_learning_compacts.htm)

### **Equipment Fees**

- Part-Time Student: \$45 per term
- Full-Time Student: \$90 per term