CHEMISTRY | STANDARD CHEMISTRY

Chemistry is often called the central science because of the pivotal role it plays in the biological and physical sciences, as well as in engineering, agriculture, medicine, and allied health disciplines. Bachelor’s degree chemists choose from diverse paths for their short-term and lifetime careers, including graduate study in a variety of programs, rewarding employment in industry or government laboratories, professional or law school, or much-needed teaching in high schools.

About this Program

- **College:** Liberal Arts and Sciences
- **Degree:** Bachelor of Science
- **Specializations:** Biochemistry | Standard Chemistry
- **Credits for Degree:** 120
- **Additional Information**

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

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

### Semester One

- **Course:** CHM 2045 & 2045L
  - **Title:** General Chemistry 1 and General Chemistry 1 Laboratory
  - **Credits:** 4

- **Course:** MAC 2311
  - **Title:** Analytic Geometry and Calculus 1
  - **Credits:** 4

- **Course:** IUF 1000
  - **Title:** What is the Good Life (Gen Ed Humanities)
  - **Credits:** 3

- **Course:** GEN Ed Biological Sciences
  - **Credits:** 3

- **Course:** State Core Gen Ed Composition; Writing Requirement
  - **Credits:** 3

- **Course:** Elective
  - **Credits:** 3

### Semester Two

- **Course:** CHM 2046 & 2046L
  - **Title:** General Chemistry 2 and General Chemistry 2 Laboratory
  - **Credits:** 4

- **Course:** MAC 2312
  - **Title:** Analytic Geometry and Calculus 2
  - **Credits:** 4

- **Course:** PHY 2048 or PHY 2053
  - **Title:** Physics with Calculus 1 or Physics 1
  - **Credits:** 3-4

- **Course:** PHY 2048L or PHY 2053L
  - **Title:** Laboratory for Physics with Calculus 1 or Laboratory for Physics 1
  - **Credits:** 1

- **Course:** State Core Gen Ed Social and Behavioral Sciences
  - **Credits:** 3

- **Course:** State Core Gen Ed International
  - **Credits:** 3

- **Course:** Elective
  - **Credits:** 3

### Semester Three

- **Course:** CHM 2212
  - **Title:** Enhanced Organic Chemistry 1
  - **Credits:** 3

- **Course:** MAC 2313
  - **Title:** Analytic Geometry and Calculus 3
  - **Credits:** 4

- **Course:** PHY 2049 or PHY 2054
  - **Title:** Physics with Calculus 2 or Physics 2
  - **Credits:** 3-4

- **Course:** PHY 2049L or PHY 2054L
  - **Title:** Laboratory for Physics with Calculus 2 or Laboratory for Physics 2
  - **Credits:** 1

- **Course:** State Core Gen Ed Humanities
  - **Credits:** 3

### Semester Four

- **Course:** CHM 2213 & CHM 2211L
  - **Title:** Enhanced Organic Chemistry 2 and Organic Chemistry Laboratory
  - **Credits:** 5

- **Course:** PHY 2049 or PHY 2054
  - **Title:** Physics with Calculus 2 or Physics 2
  - **Credits:** 3-4

- **Course:** PHY 2049L or PHY 2054L
  - **Title:** Laboratory for Physics with Calculus 2
  - **Credits:** 1

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.

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

1. Achieve at least 50% on the Diagnostic of Undergraduate Chemistry Knowledge (DUCK) exam.
2. Obtain minimum grades of C in laboratory courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>CHM 2211</td>
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<td>CHM 3120L</td>
<td>Analytical Chemistry Laboratory</td>
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<td>CHM 4130L</td>
<td>Instrumental Analysis Laboratory</td>
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<td>CHM 4411L</td>
<td>Physical Chemistry Laboratory</td>
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<td>or CHM 4413L</td>
<td>Biophysical Chemistry Laboratory</td>
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3. Complete requirements for the baccalaureate degree, as determined by the chemistry faculty.

Critical Thinking

3. Standard Chemistry and Biochemistry

Interpret, evaluate, explain and critically assess theories and experimental results in chemistry or biochemistry.

Communication

4. Standard Chemistry and Biochemistry

Collect, analyze and articulate results clearly and effectively in both oral and written formats.

Curriculum Map

I = Introduced; R = Reinforced; A = Assessed

<table>
<thead>
<tr>
<th>Standard Chemistry</th>
<th>Course</th>
<th>SLO 1</th>
<th>SLO 2</th>
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Students in the Major Will Learn to Student Learning Outcomes (SLOs)

Content

1. Standard Chemistry

Explain and apply facts, theories and concepts in

i. physical
ii. organic
iii. inorganic
iv. analytical chemistry

2. Standard Chemistry

Demonstrate and safely apply laboratory skills in

i. synthetic
ii. quantitative
iii. instrumental methods as scientific approaches to gathering and verifying knowledge

3. Standard Chemistry and Biochemistry

Apply laboratory skills in

i. synthetic
ii. quantitative
iii. instrumental
iv. biochemical methods as scientific approaches to gathering and verifying knowledge

Critical Thinking

3. Standard Chemistry and Biochemistry

Interpret, evaluate, explain and critically assess theories and experimental results in chemistry or biochemistry.

Communication

4. Standard Chemistry and Biochemistry

Collect, analyze and articulate results clearly and effectively in both oral and written formats.
### Biochemistry

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**Assessment Types for Both Specializations**

- Oral tests or reports
- Written reports
- Lab practicals