

Student ID: _____
Student Name: _____
Adviser Name: _____

Catalog: 2019-20 College of Liberal Arts
Program: Chemistry Major
Minimum Credits Required: _____

Chemistry Major

Meet the Faculty

Chemistry explores matter and its properties, its physical and chemical transformations, and energy changes associated with these transformations. Bridging traditional humanities on one hand and modern physics on the other, chemistry is a central subject in a liberal arts curriculum. "Every aspect of our world today – even politics and international relations – is affected by chemistry," said Linus Pauling. Chemists search for new molecules in space; make new useful materials; solve problems of the environment, energy, health, and food production; and probe how organisms work.

The chemistry department offers a program of study leading to certification as a chemist by the American Chemical Society Committee on Professional Training and designed to develop critical thinking, problem solving, and communication skills. Many graduates continue their education in graduate or professional school and become chemists, teachers, doctors, lawyers, biochemists, pharmacists, veterinarians, engineers, and business people.

Major Requirements

The chemistry program requires a sequence of courses. The **100-level** courses introduce first-year students to the discipline and serve as prerequisites for future foundational and elective courses. To declare this major, a student must have a minimum 2.0 GPA in at least two (2) of the courses taken at Rollins listed on the major map.

Foundational Courses (8 courses)

Course Name	Crs:	Term Taken	Grade	Gen Ed
CHM 120 - Chemistry I or CHM 130 Advanced Chemistry I <i>Prereq(s):</i> Completion of Math Skills Inventory				
CHM 121 - Chemistry II or CHM 131 Advanced Chemistry II <i>Prereq(s):</i> CHM 120 or CHM 130 or consent.				
CHM 220/220L - Organic Chemistry I <i>Prereq(s):</i> C- in CHM 121 or CHM 131 or consent.				
CHM 221/221L - Organic Chemistry II <i>Prereq(s):</i> CHM 220/220L.				
CHM 301 - Inorganic Chemistry <i>Prereq(s):</i> CHM 221/221L or consent.				
CHM 305 - Physical Chemistry I <i>Prereq(s):</i> CHM 121 or CHM 131 or consent.				
CHM 320 - Analytical Chemistry <i>Prereq(s):</i> CHM 221/221L				
BCH 335 - Biochemistry <i>Prereq(s):</i> BIO 121 and CHM 221/221L.				

Divisional Courses (4 courses)

Course Name	Crs:	Term Taken	Grade	Gen Ed
MAT 110 - Applied Calculus <i>Prereq(s):</i> High School pre-calculus or equivalent.				
or MAT 111 Calculus I				
MAT 112 - Calculus II <i>Prereq(s):</i> MAT 111.				
PHY 120 - General Physics I				
or PHY 130 Principles of Physics I				
PHY 121 - General Physics II <i>Prereq(s):</i> PHY 120.				
or PHY 131 Principles of Physics II				

Departmental Electives (2 courses)

A minimum of 10 credits is required.

Course Name	Crs:	Term Taken	Grade	Gen Ed
BCH 435 - Advanced Biochemistry <i>Prereq(s):</i> BCH 335 and senior standing.				
CHM 306 - Physical Chemistry II <i>Prereq(s):</i> CHM 305.				
CHM 400 - Advanced Analytical Chemistry				

<i>Prereq(s)</i> : CHM 320.				
CHM 420 - Medicinal Chemistry <i>Prereq(s)</i> : BCH 335				
CHM 445 - Advanced Integrated Laboratory <i>Prereq(s)</i> : consent.				
CHM 460 - Advanced Topics in Chemistry <i>Prereq(s)</i> : Determined by instructor.				
CHM 498 - Research I and II <i>Prereq(s)</i> : consent.				
CHM 499 - Research I and II <i>Prereq(s)</i> : consent.				

Note:

Students interested in earning an ACS certified degree are required to take either CHM 498 - Research I and II and CHM 499 - Research I and II or CHM 445 - Advanced Integrated Laboratory, and ten additional credits from the departmental electives list. Students interested in graduate school in chemistry are strongly advised to earn the ACS certified degree with Physical Chemistry II (CHM 306) as one of their departmental electives and in consultation with the faculty encouraged to consider additional biology (biochemistry concentration) or mathematics and physics (material science) courses as appropriate.

Students interested in earning a non-ACS certified degree are required to take ten additional credits from the departmental electives list.

Recommended Sequence of Coursework

First-year students who have not had high school physics, or have deficiencies in mathematics and/or science background should consult with a member of the department.

General chemistry and mathematics courses are typically completed during the freshmen year. Organic chemistry and physics in the second. Students interested in studying abroad should consult with a member of the department no later than Fall of the sophomore year. During the junior year students are advised to take a minimum of four courses at the 300 or higher level. Students interested in pursuing honors in the major complete CHM 498 - Research I and II CHM 499 - Research I and II in the senior year in addition to any remaining foundational or elective classes.

Education - Secondary Education Minor

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Notes: