

DEPARTMENT OF CHEMISTRY

Chemistry is the science concerned with the composition, properties, and changes of the substances of nature, including the familiar solids, liquids, and gases of the physical world as well as the less familiar components of all living systems. The primary objective of the courses in the Department of Chemistry is to provide a sound background in the basic fundamentals and techniques of chemistry in order to ensure success in the professional career of the graduate whether it be as a chemist, a member of any of the health sciences, or a member of the other physical or natural sciences. A secondary objective is to provide both science and non-science students with an insight into the influence of chemistry on daily living. The taking of assessment tests, such as MFT (Major Field Test) and the Departmental Exit Interview are requirements for graduation.

Majors/Emphases

The Chemistry Department offers six options for chemistry majors.

1. The Liberal Arts Bachelor of Science chemistry major is designed for students who desire a general education in chemistry as a background for careers in many fields such as polymer science, environmental analysis, industrial chemistry, materials science, and various fields related to the medical sciences. This consists of 35 units distributed among the major fields of chemistry and requires an approved minor.
2. The Professional - ACS-approved option is offered for those students who wish to pursue a more intensive program in chemistry approved by the American Chemical Society. This option is particularly recommended for students who intend to go to graduate school or work in the chemical industry. It consists of 50 units of chemistry in addition to coursework in physics, and mathematics. No minor is required.
3. Chemistry Honors Track. This emphasis is designed for two groups of students: 1) Those seeking the most thorough possible training to prepare themselves for graduate school and a career in research; 2) Those seeking entry to competitive professional programs (e.g., medicine, veterinary school) and wishing to obtain a degree that recognizes their exceptional dedication and ability. In this broadfield major, students have the same course requirement as an ACS Chemistry degree, plus the unique requirement to complete a substantial research project and write a thesis in their senior year. No minor is required but a minimum of 3.4 GPA is mandatory. This program also satisfies the requirements of the University Honors program. It consists of 56 units of chemistry.
4. The Chemistry (BSE) option is designed for prospective secondary school teachers. This program consists of 34 chemistry units and 23 special major requirement units, including 10 mathematics units and 10 physics units. In addition, a 3-unit writing course (ENGLISH 372) is required. Finally, this program requires an approved academic minor and 40 units licensure courses, advised by an academic advisor in Education.
5. The Biochemistry Bachelor of Science major is offered for those who wish to focus on the study of chemical reactions as pertaining to biological systems. This is a field of intense research with numerous medical, industrial and agricultural applications. One of the main goals of this track is to introduce students to fundamental biochemical concepts and laboratory techniques, and to help them bridge the gap between chemistry and biology while developing a working vocabulary of biochemistry. This major requires 63 units. This program does not require an academic minor.

6. Analytical/Instrumental Emphasis This track is particularly recommended for students who intend to go to graduate school or work in the chemical industry with a more intensive training in analytical/instrumental chemistry. It consists of 44 units of chemistry in addition to coursework in physics and mathematics. A minor in "Physics" or "Physical Science" is recommended.

Integrated Science-Business

The Integrated Science-Business Major (ISBM) combines the disciplines of science and business into an interdisciplinary program. The focus of the ISBM is to develop integrated thinking from the initial stages of education and to produce well-trained graduates who are highly effective in entry-level positions requiring skills in both science and business. The ISBM provides a strong foundation in the sciences (15-20 credits) as well as a basic background in business (30 credits). With the help of advisors, students design a course of study to best match their career goals by taking upper level courses in one or two areas of science (12-17 credits) and one area of business (6 credits). At the end of the program, capstones courses, including an internship and senior project, directly link science and business and prepare students for subsequent employment. ISBM graduates will know more about business and management issues than a typical science or engineering graduate, and have a broader understanding of science and technology than most business majors. Graduates of the program will be highly competitive for employment in science and technology based companies in positions such as project managers, marketing managers, and technology analysts. This major may be completed for a B.S. or B.B.A. degree. See the College of Business and Economics for B.B.A. degree requirements.

Majors in Chemistry

- Chemistry - Analytical/Instrumental Emphasis (BA/BS) (<http://www-public.courseleaf.com/undergraduate/letters-sciences/chemistry/chemistry-analytical-instrumental-emphasis/>)
- Chemistry - Biochemistry Emphasis (BA/BS) (<http://www-public.courseleaf.com/undergraduate/letters-sciences/chemistry/chemistry-biochemistry-emphasis-ba-bs/>)
- Chemistry - Honors Emphasis (BA/BS) (<http://www-public.courseleaf.com/undergraduate/letters-sciences/chemistry/chemistry-honors-emphasis-ba-bs/>)
- Chemistry - Liberal Arts Emphasis (BA/BS) (<http://www-public.courseleaf.com/undergraduate/letters-sciences/chemistry/chemistry-liberal-arts-ba-bs/>)
- Chemistry - Professional ACS Approved Emphasis (BA/BS) (<http://www-public.courseleaf.com/undergraduate/letters-sciences/chemistry/chemistry-professional-ac-s-approved-ba-bs/>)
- Chemistry Science Education (BSE) (<http://www-public.courseleaf.com/undergraduate/letters-sciences/chemistry/chemistry-bse/>)

Minor in Chemistry

- Chemistry (<http://www-public.courseleaf.com/undergraduate/letters-sciences/chemistry/chemistry-minor/>)