

## UNDERGRADUATE

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## PROGRAMS

### Bachelor of Science Degree

#### Comprehensive Chemistry

All Chemistry majors begin in the Comprehensive Chemistry specialization, which provides a rigorous program with advanced study in analytical, organic and physical chemistry for the professional chemist. After the freshman year, all students pursuing a Bachelor of Science degree in the College of Science have the option to continue in Comprehensive Chemistry or pursue one of the more focused specializations, which include Biochemistry, Environmental Chemistry, and Forensic Chemistry.

#### Biochemistry

For students with an interest in the biological and medical aspects of chemistry and for pre-professional students, the Biochemistry specialization allows students to include course work from the life sciences in their program of study.

#### Environmental Chemistry

For students interested in green chemistry and the chemistry of atmospheric science, geology, hydrology, environmental engineering, industrial ecology and toxicology, the Environmental Chemistry specialization complements advanced study in analytical and organic chemistry with in depth courses in environmental chemistry and related fields of engineering, forestry, geology, plant biology and soil science. Students are encouraged to also pursue an Environmental Studies minor.

#### Forensic Chemistry

For students interested in chemistry applied to solving problems encountered in crime labs, the Forensic Chemistry specialization gives students the opportunity to study the science required for investigative research in a crime lab. Students are encouraged to also pursue a Forensic Science minor.

#### American Chemical Society Certificate

The American Chemical Society (ACS) Certificate program prepares students for a career in the chemical industry or for further studies in graduate school. The certificate indicates that a student has completed the rigorous academic requirements for a degree in chemistry and has actively participated in undergraduate research under the direction of a faculty research advisor.

#### Chemistry Honors

All freshman chemistry majors are strongly encouraged to enroll in Chemistry 200H and to participate in the University Honors Program. The Chemistry Honors track includes completion of an ACS Certificate and an honors thesis under the supervision of a faculty research advisor. Applications for Chemistry Honors should be submitted at least one year prior to graduation and must include an honors research project proposal with a letter of support from a faculty research advisor. Acceptance and participation in an honors research project requires a 3.25 grade point average in all chemistry coursework. The honors thesis and all chemistry honors courses may be included in the pursuit of an Honors Degree offered by the University Honors Program.

### Bachelor of Arts Degree

#### Business

For students pursuing a career in chemistry with an interest in the business aspects of chemistry such as management, marketing, production and technology transfer, the Business specialization allows students to pursue a minor degree in Business and Administration and is ideal preparation for a career in the chemistry industry. Students can utilize the Business specialization to prepare for admission into a Masters in Business Administration degree program.

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## COURSES

Students pursuing a bachelor's degree in chemistry from the College of Science will, in addition to meeting the University Core Curriculum program requirements, take one year of physics, one year of foreign language, a series of mathematics courses through differential calculus, and two courses in the biological sciences beyond the Core Curriculum level. The chemistry sequence includes a year of general chemistry, followed by courses in analytical, organic, inorganic, and physical chemistry. Many of these courses include laboratory work. Additional courses in biochemistry or various specialized aspects of other branches of chemistry are also available. In these you will encounter the latest developments in each field.

[Course Descriptions](#) (PDF)

A chemistry major is encouraged to obtain a minor in another program, such as physics, mathematics, microbiology, or geology. Having such versatility can add to your career options.

## FACULTY

With approximately fifteen [faculty members](#) whose education and research interests cover the major areas of chemistry, the Department of Chemistry and Biochemistry offers the resources for a thorough education in chemistry. All lecture courses are taught by full-time faculty who hold the Ph.D. Laboratory portions of the courses are instructed by graduate assistants under direct supervision of a faculty member. Although introductory courses have large enrollments, our upper-division classes are small enough to allow faculty to give you individual attention.

Our faculty members are active in research, attracting more than one million dollars each year in external support from a variety of agencies such as the National Science Foundation, the National Institutes of Health, the Department of Energy, NASA, the American Cancer Society, and the Dreyfus Foundation. Some of these funds are used to support undergraduate students carrying out research projects in the faculty member's lab. Our research work covers many areas of experimental and theoretical chemistry, focusing on design and fabrication of new materials, stabilities of reactive intermediates in chemical reactions, synthesis of natural products and entirely new molecules with biological activity, catalysis, understanding the fundamental sources of interactions between molecules, and devising new methods and instruments for separating one type of molecule from another or of recognizing the presence of certain substances at only trace levels.

## GRADUATE AND PROFESSIONAL PROGRAMS

While your immediate goal may be a bachelor's degree and a job, at some point in the future you may decide you would like further education. SIUC offers [master's and doctor's degrees in chemistry](#). Currently, more than 40 students are enrolled in these programs. Also available are graduate programs in computer science, geology, mathematics, microbiology, physics, physiology, and zoology.

Many of our undergraduates have gone on to graduate work at major institutions throughout the country. Often they have begun their research careers as undergraduates in our department, working with faculty members. Some chemistry majors enter medical school - an undergraduate degree in chemistry is an excellent preparation for a career in medicine or other health-related fields.

### PROGRAMS OF STUDY

[Undergraduate Catalog](#) (PDF)

[Course Descriptions](#) (PDF)

### CONCENTRATIONS:

These are programs of study designed to provide emphasis in specific areas of chemistry in line with the student's career goals.

- [Comprehensive Chemistry](#)(PDF)
- [Biochemistry](#)(PDF)
- [Environmental Chemistry](#)(PDF)
- [Forensic Chemistry](#)(PDF)
- [Business Chemistry](#)(PDF)