

DEPARTMENT OF CHEMISTRY

Chair and Coordinator: Dr. LeRoy Peterson Jr.

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MISSION STATEMENT

The Department of Chemistry offers lower-level courses appropriate for general education and upper-level courses for major and minor programs in chemistry. These courses also serve as foundation courses for majors in other areas such as biology, mathematics, and pre-professional programs. Topics and concepts on the fundamental laws of nature that govern the physical universe and on the methods of scientific inquiry used to investigate and develop those laws are the foundations of course content. A basic understanding of the fundamental laws of nature and a basic understanding of the process of scientific inquiry are essential parts of a liberal arts education.

The chemistry program seeks to offer courses in chemistry that are taught by full-time faculty members with appropriate advanced degrees dedicated to science education at the university level. The courses offered in the department range in level from introductory courses that expose non-science majors to scientific thought to advanced courses that cover current and complex topics in modern chemistry. The laboratory experience is required in appropriate courses to illustrate the importance of experimentation to the scientific endeavor. For the majors in chemistry, the opportunity to undertake undergraduate research is offered. Since part of research is the interpretation and communication of results, majors graduating from those programs in the department are expected to be proficient in oral and written communication, to be familiar with the scientific literature, and to be aware of the importance and usage of computers in science.

The current chemistry curriculum consists of two tracks. The first is the track leading to the basic or minimal chemistry major. The second track is the curriculum leading to the American Chemical Society (ACS) certified degree. The ACS-certified degree requires additional advanced course work in chemistry, physics, and mathematics as well as undergraduate research.

Those students completing either of the two major tracks offered by the Department of Chemistry are prepared to enter into any number of career choices. These include work in local, regional, and national industries and with governmental agencies and entrance into graduate or professional schools.

MAJORS

BASIC MAJOR

A basic major in chemistry includes the following:

1. Chemistry course requirements
 - a) eight hours of introductory courses: Chemistry 101-102
 - b) a minimum of 28 hours beyond the 100 level, including Chemistry 201-202, 203, 301-302, 303, 402, and 499
2. Minor/collateral requirements (two options)
 - a) two 12-hour collaterals approved by the faculty adviser (physics, mathematics, or computer science should be considered; pre-medical or pre-dental students should also consider biology)
 - b) an 18-hour minor approved by the faculty adviser preferably from either:
 - i. physics, recommended for students who plan to attend graduate school
 - ii. biology, recommended for pre-medical or pre-dental students
 - iii. mathematics or computer science

3. Other requirements for a basic major in chemistry include Mathematics 201, 202, and 203 and Physics 200, 201, and 202

4. General Education courses for all Bachelor of Science degrees

ACS-CERTIFIED MAJOR

An ACS-certified major in chemistry includes the following:

1. Chemistry course requirements
 - a) thirty-eight hours of core courses: Chemistry 101-102, 201-202, 203, 301-302, 303, 402, and 404
 - b) a minimum of 10 hours of advanced courses: Chemistry 405, 407, 408, 497, and 499
2. Minor/collateral requirements (two options)
 - a) two 12-hour collaterals approved by the faculty adviser (physics, mathematics, or computer science should be considered; pre-medical or pre-dental student should also consider biology)
 - b) an 18-hour minor approved by the faculty adviser preferably from either:
 - i. physics, recommended for students who plan to attend graduate school
 - ii. biology, recommended for pre-medical or pre-dental students physics, recommended for students who plan to attend graduate school
 - iii. mathematics or computer science
3. Other requirements for an ACS-certified major in chemistry include Mathematics 201, 202, 203, 301, 306; Physics 200, 201, 202; and English 318
4. General Education courses required for all Bachelor of Science degrees

The minimum number of semester hours required in major courses for a basic major in chemistry is 36; for an ACS-certified major in chemistry, the minimum is 48. The minimum number of semester hours in all courses (major and non-major) required for the basic major in chemistry is 120; for the ACS-certified major in chemistry, the minimum is 132.

Students majoring in chemistry and planning to enter graduate school should take French or German. Students planning such advanced studies should consider completing the American Chemical Society approved major in chemistry.

MINOR

A minor in chemistry requires a minimum of 19 semester hours including Chemistry 101-102 and Chemistry 201-202. Remaining hours may be taken in Chemistry 203, 301, 302, 303, 402, 404, 405, and 407. Permission of department chairperson is required before Chemistry 301-302, 303, 402, 405, and 407 may be taken without appropriate prerequisites.

COLLATERAL

A collateral in chemistry requires 12 semester hours, including Chemistry 101-102, and 201 or 203.

OTHER INFORMATION

Credit toward graduation may not be earned in both Physical Science 101 and any physics course.

Credit toward graduation may not be earned in both Chemistry 150 and any other chemistry course.

To advance to the next chemistry course, a grade of C or higher must be earned in each prerequisite chemistry course.