DEPARTMENT OF CHEMISTRY

About
The Department of Chemistry is approved by the American Chemical Society.

Chair
Richard (Rick) E. Norman (norman@shsu.edu)

Mission
The Department of Chemistry is committed to providing an educational environment conducive to scholarship, intellectual development, and the acquisition of a foundation of knowledge and techniques required of professional chemists. This goal requires the effective representation of the fundamental areas of chemistry, a dedicated and creative faculty, and support for the many functions of the department.

Contact Information
(936) 294-1532

Website
Department of Chemistry (http://www.shsu.edu/academics/chemistry)

Academic Program

General Information

Advisory Committee
For students completing a thesis, a thesis research project will begin in the first or second semester of graduate work. The student and the thesis director, with approval from the chair, will select two additional faculty members to serve as the thesis committee. Once enrolled in a thesis class, a student must be continually enrolled until graduation.

Period of Study
Students taking 9 semester hours of coursework each long semester and 3 semester hours each summer session will typically finish their graduate program in two years. A minimum of three long semesters and two summer sessions is required.

Comprehensive Exam and Oral Thesis Defense
An oral presentation of the thesis to the faculty in a seminar format is required, and the thesis must be defended before the student's thesis committee. All graduate students are required to pass an oral comprehensive exam based on their coursework. The oral comprehensive exam is typically concurrent with the thesis defense. Students must be enrolled the semester that they take comprehensive examinations.

Senior Courses Open to Graduate Students

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 4440</td>
<td>Instrumental Analytical Chem</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 4442</td>
<td>Air Quality</td>
<td>4</td>
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<tr>
<td>CHEM 4443</td>
<td>Structural Spectroscopic Methd</td>
<td>4</td>
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<tr>
<td>CHEM 4448</td>
<td>Physical Chemistry I</td>
<td>4</td>
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<tr>
<td>CHEM 4367</td>
<td>Advanced Inorganic Chemistry</td>
<td>3</td>
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<tr>
<td>CHEM 4449</td>
<td>Physical Chemistry II</td>
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A maximum of six hours of 4000-level courses may be taken toward the completion of the master's degree. Course requirements in 4000-level courses will be appropriately modified for graduate credit.

Highlights
- The Department of Chemistry moved into an impressive new facility (the Chemistry and Forensic Science Building) during the Fall semester of 2005, greatly expanding and improving the laboratory facilities.
- The Department of Chemistry has recently purchased an X-ray diffractometer and continually looks for ways to improve and enhance our research equipment.
- Master of Science in Chemistry (catalog.shsu.edu/archives/2017-2018/graduate/college-departments/science-and-engineering-technology/chemistry/chemistry-ms)

Scholarships
Scholarships are available from the College of Science and Engineering Technology and from the Office of Graduate Studies to support students' studies. Please check the websites for the College and Graduate Studies for more information.
CHEM 5001. Independent Study In Chemistry. 1-3 Hours.
This course is intended to provide an avenue for selected graduate students to engage in independent studies. Registration is on an individual basis and is restricted to students in residence. Variable Credit (1-3).
Prerequisite: Approval of department chair.

CHEM 5100. Chemical Literature & Seminar. 1 Hour.
Students will participate in the departmental seminar program. This participation will require the preparation and presentation of current research material in a format acceptable to the American Chemical Society.

CHEM 5361. Physical Organic Chemistry. 3 Hours.
This course consists of a study of the effect of structure upon reactivity of organic compounds. The qualitative and quantitative relationship of structure to acidity and basicity in organic chemistry is developed. In addition, reactive intermediates (carbocations, carbanions and free radicals) are studied.
Prerequisite: CHEM 2325, CHEM 2125.

CHEM 5362. Organic Reaction Mechanisms. 3 Hours.
Current models for mechanisms of organic reactions are discussed and applied. The mechanisms and applications of synthetically important reactions are also surveyed. Literature searching for less often utilized but historically important transformations are integral to the course. The methods of determining reaction mechanisms are surveyed along with applications to individual reactions.
Prerequisite: CHEM 2325, CHEM 2125.

CHEM 5368. Analytical Spectroscopy. 3 Hours.
Theory and application of selected areas of spectroscopy commonly used in qualitative and quantitative analysis are covered. Topics include atomic and molecular spectroscopy, mass spectrometry, laser analytical methods, fluorescence, phosphorescence, and chemiluminescence and their application to environmental, atmospheric, and bioanalytical problems.
Prerequisite: CHEM 4440.

Chair: Richard E Norman
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