

MASTER OF SCIENCE IN CHEMISTRY

The Master of Science in Chemistry is designed to train chemists for careers in business, industry, or academics. This degree is also appropriate for those students planning to continue their training in Ph.D. programs at other institutions.

Applicants seeking admission to the graduate program in chemistry must submit the following directly to the Office of Graduate Admissions:

1. Graduate Application (<http://www.shsu.edu/admissions/apply-texas.html>)
2. Application fee (<http://www.shsu.edu/dept/graduate-studies/application-fee.html>)
3. Official transcript(s) of all previous college work
4. Official GRE scores
5. Three letters of recommendation

Applicants must have a major or minor in chemistry (with at least a 2.5 GPA in their undergraduate chemistry courses typically including Analytical or Quantitative Chemistry, Instrumental Methods, one year of calculus-based Physical Chemistry, and Inorganic Chemistry) or commensurate industrial experience.

For a final admissions decision, a holistic review of each student's application file will be completed on a competitive basis. Currently a 3.0 GPA is required for financial support.

The Department of Chemistry offers classes in a wide variety of chemical subjects including analytical, forensic, inorganic, organic, and physical chemistry, toxicology, and biochemistry.

Master of Science, 31 SCH with Minor and Thesis

| Code | Title | Hours |
|--|-------|-------|
| Course Area | | |
| Chemistry | | 13 |
| Research and Thesis | | 6 |
| Minor field that logically supports the major (Computing Science, Mathematics, Physics, Biology, etc.) | | 12 |
| Total Hours | | 31 |

Plan 1 - MS in Chemistry (Thesis Option)

| Code | Title | Hours |
|--|---|-------|
| Master of Science, 31 Semester Hours with Minor and Thesis | | |
| Specified Course | | |
| CHEM 5100 | Chemical Literature & Seminar | 1 |
| CHEM 6398 | Graduate Research in Chemistry ¹ | 3 |
| Restricted Electives | | |
| Select one course from four of the of the following five areas: | | 12 |
| Organic | | |
| CHEM 5361 | Physical Organic Chemistry | |
| CHEM 5362 | Organic Reaction Mechanisms | |
| Analytical | | |
| CHEM 5368 | Analytical Spectroscopy | |
| Biochemistry | | |
| CHEM 5372 | Advanced Biochemistry I | |
| CHEM 5373 | Drug and Toxin Biochemistry | |
| Inorganic | | |
| CHEM 5374 | Chem of Coordination Compounds | |
| CHEM 5375 | Organometallic Chemistry | |
| Physical | | |
| CHEM 5381 | Adv Physl Chem Thermodynamics | |
| CHEM 5382 | Symmetry and Spectrscopy | |
| Secondary Field | | |
| Select four graduate courses in a field that logically supports the major ² | | 12 |

Thesis

| | | |
|-------------|---------------------|----|
| CHEM 6099 | Thesis ³ | 3 |
| Total Hours | | 31 |

¹ Usually taken every semester and receives a grade of "IP" until the final semester the research project is completed.

² Courses should be selected in consultation with the Graduate Advisor.

³ Once enrolled in CHEM 6099, the student must enroll in this course every semester until graduation.

Master of Science, 30 SCH without Minor and with Thesis

| Code | Title | Hours |
|---------------------|-------|-------|
| Course Area | | |
| Chemistry | | 24 |
| Research and Thesis | | 6 |
| Total Hours | | 30 |

Plan 2 - MS in Chemistry (Thesis Option)

| Code | Title | Hours |
|---|---|-------|
| Master of Science, 30 Semester Hours without Minor and with Thesis | | |
| Specified Course | | |
| CHEM 5100 | Chemical Literature & Seminar | 1 |
| CHEM 6398 | Graduate Research in Chemistry ¹ | 3 |
| Restricted Electives | | |
| Select one course from four of the following five areas: | | 12 |
| Organic | | |
| CHEM 5361 | Physical Organic Chemistry | |
| CHEM 5362 | Organic Reaction Mechanisms | |
| Analytical | | |
| CHEM 5368 | Analytical Spectroscopy | |
| Biochemistry | | |
| CHEM 5372 | Advanced Biochemistry I | |
| CHEM 5373 | Drug and Toxin Biochemistry | |
| Inorganic | | |
| CHEM 5374 | Chem of Coordination Compounds | |
| CHEM 5375 | Organometallic Chemistry | |
| Physical | | |
| CHEM 5381 | Adv Physl Chem Thermodynamics | |
| CHEM 5382 | Symmetry and Spectroscopy | |
| Electives | | |
| Select four graduate courses in CHEM ² | | 11 |
| Thesis | | |
| CHEM 6099 | Thesis ³ | 3 |
| Total Hours | | 30 |

¹ Usually taken every semester and receives a grade of "IP" until the final semester the research project is completed.

² Courses should be selected in consultation with the Graduate Advisor. The student may take CHEM 5100 two additional times for a total of three credit hours.

³ Once enrolled in CHEM 6099, the student must enroll in this course every semester until graduation.

Master of Science, 36 SCH with Minor, Non-Thesis

| Code | Title | Hours |
|--------------------|-------|-------|
| Course Area | | |
| Chemistry | | 24 |

| | |
|--|----|
| Minor field that logically supports the major (Computing Science, Mathematics, Physics, Biology, etc.) | 12 |
| Total Hours | 36 |

Plan 3 - MS in Chemistry (Non-Thesis Option)

| Code | Title | Hours |
|--|--|-------|
| Master of Science, 36 Semester Hours with Minor, Non-Thesis | | |
| Specified Courses | | |
| CHEM 5100 | Chemical Literature & Seminar ¹ | 3 |
| CHEM 6398 | Graduate Research in Chemistry | 3 |
| Restricted Electives | | |
| Select one course from four of the following five areas: | | 12 |
| Organic | | |
| CHEM 5361 | Physical Organic Chemistry | |
| CHEM 5362 | Organic Reaction Mechanisms | |
| Analytical | | |
| CHEM 5368 | Analytical Spectroscopy | |
| Biochemistry | | |
| CHEM 5372 | Advanced Biochemistry I | |
| CHEM 5373 | Drug and Toxin Biochemistry | |
| Inorganic | | |
| CHEM 5374 | Chem of Coordination Compounds | |
| CHEM 5375 | Organometallic Chemistry | |
| Physical | | |
| CHEM 5381 | Adv Physl Chem Thermodynamics | |
| CHEM 5382 | Symmetry and Spectroscopy | |
| Electives | | |
| Select two graduate courses in CHEM | | 6 |
| Secondary Field | | |
| Select four graduate courses in PHYS, BIOL, or MATH ² | | 12 |
| Total Hours | | 36 |

¹ CHEM 5100 must be taken three times for a total of three credit hours.

² Courses should be selected in consultation with the Graduate Advisor.

Master of Science, 36 SCH without Minor, Non-Thesis

| Code | Title | Hours |
|--------------------|-------|-------|
| Course Area | | |
| Chemistry | | 36 |
| Total Hours | | 36 |

Plan 4 - MS in Chemistry (Non-Thesis Option)

| Code | Title | Hours |
|---|--|-------|
| Master of Science, 36 Semester Hours without Minor, Non-Thesis | | |
| Specified Courses | | |
| CHEM 5100 | Chemical Literature & Seminar ¹ | 3 |
| CHEM 6398 | Graduate Research in Chemistry | 3 |
| Restricted Electives | | |
| Select four of the following: | | 12 |
| CHEM 5361 | Physical Organic Chemistry | |
| CHEM 5362 | Organic Reaction Mechanisms | |
| CHEM 5368 | Analytical Spectroscopy | |
| CHEM 5372 | Advanced Biochemistry I | |
| CHEM 5374 | Chem of Coordination Compounds | |

| | | |
|-------------------------------------|-------------------------------|----|
| CHEM 5381 | Adv Physl Chem Thermodynamics | |
| CHEM 5385 | Selected Topics in Adv Chem | |
| Electives | | |
| Select six graduate courses in CHEM | | 18 |
| Total Hours | | 36 |

¹ CHEM 5100 must be taken three times for a total of three credit hours.

The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The MS in Chemistry is designed to provide graduates with the following marketable skills:

- Ability to work safely with standard chemicals in a chemistry laboratory.
- Ability to keep thorough and accurate records of chemistry experiments.
- Ability to write final research reports and orally present results of experiments.
- Ability to analyze and interpret experimental data, including spectrophotometric data.
- Ability to understand the use of the major methods of purification of chemical compounds, including chromatographic techniques.