MASTER OF SCIENCE IN CHEMISTRY (SCIENCE)

Web Site: https://twu.edu/chemistry-biochemistry/graduate-program/

This degree plan is suggested for those who wish to pursue a career in teaching, health sciences, sales, or other non-research scientific fields.

We offer the M.S. degree in chemistry with research focuses in biochemistry, biophysical chemistry, organic chemistry, and inorganic/materials chemistry. A course of study and research will be custom-designed by a faculty committee to suit your individual research interests and career goals.

As a master's degree-seeking student, you will be required to take a minimum of four basic chemistry courses in order to establish a strong foundation in the field. You will then be encouraged to take analytical, biological, inorganic, organic, and/or physical chemistry advanced graduate courses to gain more in-depth perspectives. There are two pathways to our master's degree: a research path, or a coursework path with a science or business track emphasis.

Marketable Skills

Defined by the Texas Higher Education Coordinating Board's 60x30 Strategic Plan (https://reportcenter.highered.texas.gov/agency-publication/miscellaneous/thecb-60x30-strategic-plan/) as, "Those skills valued by employers that can be applied in a variety of work settings, including interpersonal, cognitive, and applied skills areas. These skills can be either primary or complementary to a major and are acquired by students through education, including curricular, co-curricular, and extracurricular activities."

1. As a member of a graduate teaching lab team and research team, you will learn how to work and communicate with diverse team members.
2. By writing laboratory reports, papers, and a thesis, coupled with presenting your work to your peers, at conferences, or to the general public, you will gain valuable verbal and written communication skills.
3. With our departmental focus on civic engagement and laboratory safety as our first priority, you will understand social and personal responsibility.
4. Finally, since earning a degree in any field of chemistry naturally requires excellent problem-solving and critical-thinking skills related to chemistry, these skills can also be used to address other issues and solve other problems.

Admissions

All students must meet the University requirements as outlined in the Admission to the TWU Graduate School (https://catalog.twu.edu/graduate/graduate-school/admission-graduate-school/) section of the catalog.

The academic program may have additional admission criteria that must also be completed as outlined on the program's website.

Degree Requirements

Total Semester Credit Hours Required

36 semester credit hours (SCH).

Required Courses

16-17 SCH of chemistry coursework (excluding research, seminar, professional paper, and thesis) approved by an advisory committee. Science coursework track students must enroll in CHEM 5101 a minimum of two times. It is recommended students enroll in CHEM 5101 each semester if taking six or more SCH.

In the first year of studies, coursework track students must choose an advisor. All students in the coursework track must complete five basic chemistry courses for a total of 15 credits. The remaining courses in chemistry (including up to six SCH of Research in Chemistry), biology, or math will be determined in consultation with the advisor. In the last semester of study, students must register for CHEM 5973 where students will write a paper and defend it to their committee.

Science Track

Code	Title	SCHs
Required Courses (17 SCH)		
CHEM 5101	Seminar (take a minimum of 2 times)	2
Select 15 SCH from the following		15
CHEM 5013	Advanced Physical Chemistry	
CHEM 5213	Advanced Organic Chemistry	
CHEM 5323	Advanced Analytical Chemistry	
CHEM 5523	Advanced Inorganic Chemistry	
CHEM 5613	Advanced Biochemistry I	
CHEM 5623	Advanced Biochemistry II	
Electives		
Students must take 16 SCH. A maximum of 6 SCH are allowed for Chemistry Research.		16
CHEM 5101	Seminar (may be repeated)	
CHEM 5891	Research in Chemistry (may be repeated)	
CHEM 5893	Research in Chemistry (may be repeated)	
CHEM 5896	Research in Chemistry	
BIOL 5333	Advanced Pathophysiology	
BIOL 5883	Biological Research	
MATH 5033	Advanced Calculus	
MATH 5423	History of Mathematics	
MATH 5513	Matrix Algebra	
MATH 5543	Symbolic Logic	
Other courses as approved by advisor.		
Completion of Track		
CHEM 5973	Professional Paper	3
Total SCHs		**36**

Final Examination

All candidates for master's degrees must pass a final oral examination administered by the student's research committee.