

CHEMISTRY (M.S.)

<https://ceps.unh.edu/chemistry/program/ms/chemistry>

Description

The M.S. program provides students with the opportunity to develop a high degree of proficiency in a specialized research area. The program serves as a stepping stone to jobs in industry, graduate school, professional school, teaching careers, or for those who would like to strengthen their Chemistry knowledge. All students take coursework, carry out original research with a faculty mentor, and submit a thesis. The program has a focus on developing strong writing and oral communication skills. Financial support is typically available through a teaching assistantship.

Requirements

M.S. Degree Requirements

- Demonstration of a broad understanding of undergraduate chemistry by passing a series of basic examinations or satisfactory performance in approved courses.
- Student must present a total of **30 credits** for completion of the MS program. These 30 credits are as follows:
 - 20+ course credits, at least 8 credits of which must be in courses numbered 900 or above.
 - Satisfactory performance in at least three path-specific (analytical, inorganic, organic, or physical) courses, which is a portion of the 20+ course credits required.
 - 6 to 10 credits of CHEM 899 Thesis/Problems research credits.
- Mandatory attendance at Department Seminars and Research Lunch Talks.
- Satisfactory presentation of a Research Progress Report in the second year of residence.
- Preparation, public presentation, and oral defense of a written thesis.
- Student must maintain a GPA of 3.0 to graduate from the MS program.

Faculty Research Advisor and Thesis Committee

Students select a research advisor during the first semester in the program after interviewing at least three faculty members. During each semester thereafter, students conduct independent research under the supervision of the Faculty Research Advisor. In the second year of residence and before the Research Progress Report, a dissertation committee is selected. This committee evaluates the student's Research Progress Report and the Thesis Defense.

Code	Title	Credits
Professional Development Courses		
CHEM 800	Chemistry Teaching Seminar	1
CHEM 802	Critical and Creative Thinking for Chemists	1
CHEM 991	Graduate Presentation Portfolio	1
CHEM 992	Graduate Writing Portfolio	1
CHEM 997	Seminar	1
Program Courses		
CHEM 808	Spectroscopic Investigations of Organic Molecules	3
CHEM 855	Advanced Organic Chemistry	3
CHEM 902	Theoretical Organic Chemistry II	3
CHEM 903	Advanced Inorganic Chemistry I	3

CHEM 904	Advanced Inorganic Chemistry II	3
CHEM 905	Advanced Physical Chemistry I	3
CHEM 911	Synthetic Organic Chemistry I	4
CHEM 925	Surface Chemistry	3
CHEM #926	Physical Chemistry of Condensed Phases	3
CHEM 927	Chemical Kinetics and Reaction Dynamics	3
CHEM 930	Advanced Optical Methods	3
CHEM 933	Chemical Separations	3
CHEM 934	Chemical Equilibria	3
CHEM 935	Advanced Analytical Chemistry	3
CHEM 995	Colloquium	1-4
Research		
CHEM 899	Thesis/Problems	1-10

Student Learning Outcomes

All graduates will be able to:

- Comprehend, plan and conduct advanced research under the guidance of a research advisor while developing their intellectual independence that demonstrates scholarship.
- Develop the ability to design and conduct experiments safely, as well as to analyze and interpret data.
- Develop and demonstrate oral and written communication skills to enable effective communication in all aspects of their professional career. This would include presentations, developing papers for published works and grant writing.
- Develop and apply theories, methodologies, and knowledge to address questions and resolve problems in the field of chemistry and in associated interdisciplinary projects.
- Develop the capacity of function and work effectively alone and in a team environment.
- Develop professional and ethic responsibility and follow this throughout their careers in the field or in academia.
- Develop a significant research program.
- Develop professional methods of communication and enhanced presentation skills.