

CHEMISTRY - MASTER OF SCIENCE

The Master of Science in Chemistry is offered in the major emphasis areas of analytical, inorganic, organic, and physical chemistry, and biochemistry. The M.S. degree can be obtained through either a [thesis option](#) or a [non-thesis option](#). Both options require at least 30 credits of course work. The thesis option program is designed to teach students modern approaches to chemistry and biochemistry (courses), experimental methods to problem-solving (research), and communication skills in the discipline (seminars and colloquia). All M.S. candidates are required to complete the courses below, pass a qualifying exam at the end of the first year, and pass a final comprehensive examination. Thesis-option students additionally complete a written thesis.

Determination, CHEM 515 Modern Organic Chemistry, CHEM 516 Physical Organic Chemistry, or CHEM 619 Topics in Organic Chemistry (Organic); CHEM 521 Chemical Instrumentation CHEM 526 Advanced Analytical Chemistry, CHEM 527 Separations, CHEM 529 Spectrochemical Analysis, or CHEM 629 Advanced Topics in Analytical Chemistry (Analytical); and, CHEM 537 Quantum Chemistry, CHEM 538 Chemical Kinetics, or CHEM 639 Topics in Physical Chemistry (Physical).

Prefix	Title	Credits
Required Courses		
CHEM 475	Central Concepts in Chemistry - Safety	1
CHEM 476	Central Concepts in Chemistry - Research Ethics	1
CHEM 477	Central Concepts in Chemistry - Professional Development (Required Courses)	1
CHEM 501	Central Concepts in Chemistry - Energy	3
CHEM 502	Central Concepts in Chemistry - Structure	3
CHEM 503	Central Concepts in Chemistry - Dynamics	3
CHEM 504	Central Concepts in Chemistry - Measurements	3
	<i>Discussions in Chemistry</i> ¹	1-6
	<i>Seminar</i> ²	1-3
	<i>Additional Course Requirements</i> ³	6-9
	<i>Research Credits</i> ⁴	7-18
Total Credits		30-51

1

Discussions in Chemistry participation is required in BCHE 590 Discussions in Biochemistry or consult with your advisor for additional options.

2

Seminar presentation is required in at least one of following courses: CHEM 510 Graduate Student Seminar, CHEM 520 Comprehensive Literature Review Seminar for Graduate Students, or BCHE 540 Seminar in Biochemistry.

3

Additional courses in subsequent years are chosen based on major emphasis area, through consultation with the thesis committee or an advisor.

4

Require only for the thesis option: CHEM 599 Master's Thesis or BCHE 599 Master's Thesis

Information about additional course requirements: Through consultation with the thesis committee (thesis option) or an advisor (non-thesis option), students must complete 3-9 additional course credits. These courses can include BCHE 542 Biochemistry I, BCHE 545 Molecular and Biochemical Genetics, BCHE 546 Biochemistry II, BCHE 647 Physical Biochemistry or BCHE 649 Topics in Biochemistry (Biochemistry); CHEM 507 Chemistry of the Elements (Inorganic); CHEM 514 Organic Structure