

CHEMISTRY

Contact: (845) 257-3790

In conjunction with the [Teaching & Learning department](#), the Chemistry department contributes graduate courses that support the following degree programs:

- [Master's of Science in Education \(MSEd\) degree in Adolescence Education: Chemistry](#). This degree is designed for adolescence education teachers who need a Master's degree for permanent certification.
- [Master's of Arts in Teaching \(MAT\) degree in Adolescence Education: Chemistry](#). This degree is designed for those with a bachelor's degree in Chemistry who would like a rapid route to certification as secondary education teachers.
- [Bachelor's of Arts in Chemistry + Master's of Arts in Teaching in Adolescence Education: Chemistry](#). This program allows Chemistry majors to ability to earn two degrees and a NYS teaching credential within five years.

CHE503. Advanced Organic Chemistry. 3 Credits.

Topics of current interest in organic research.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE319 Minimum Grade of D-

May not be repeated for credit

CHE509. Spectrometric Identification of Organic Compounds. 3 Credits.

Application of spectrometry (mass, infrared, ultraviolet and nuclear magnetic resonance) to the identification of organic compounds.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE319 Minimum Grade of D-
- PHY202 Minimum Grade of D-

May not be repeated for credit

CHE512. Advanced Inorganic Chemistry. 3 Credits.

Atomic structure, periodicity, ionic and covalent bonding. Acid-base and solution chemistry. Bonding theories and structure of transition metal complexes.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE314 Minimum Grade of D-
- CHE321 Minimum Grade of D-

May not be repeated for credit

CHE531. Separation Methods in Chemistry. 3 Credits.

A course that applies physical, chemical and equilibrium properties to the problems of isolating components in analytical processes with emphasis on chromatographic procedures. Applications from current literature.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE303 Minimum Grade of D-
- CHE321 Minimum Grade of D-

May not be repeated for credit

CHE535. Chemical Engineering for Chemists. 3 Credits.

Expands skills and techniques acquired in physical chemistry by providing applications to large systems of reaction occurring in flow systems. Introduction to the mass, momentum and energy balances and design concepts familiar to chemical engineers. Not for engineers.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

May not be repeated for credit

CHE570. Biochemistry. 3 Credits.

Structure of biomolecules and their assemblies and the chemical reactions of metabolic processes. Molecular aspects of gene replication, transcription and translation.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE319 Minimum Grade of D-
- BCM461 Minimum Grade of D-

May not be repeated for credit

CHE573. Principles of Physical Chemistry. 3 Credits.

Fundamental principles and their application in thermodynamics, solution and phase equilibria, the solid state, and topics such as physical chemistry of surfaces. Not open to undergraduate chemistry majors.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE202 Minimum Grade of D-
- MAT252 Minimum Grade of D-

May not be repeated for credit

CHE574. Principles of Polymer Sciences. 3 Credits.

Principles of formation and behavior of large molecules and their relationship to industrial and biochemical applications.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE319 Minimum Grade of D-

May not be repeated for credit

CHE575. Principles of Materials Science. 3 Credits.

Understanding of the relation between the properties of materials and composition and structure. Electronic structure of the atom, and its relationship to the chemical bonding in solids. Atom packing and crystal structures. Relationship of structure, including defects, to mechanical, electrical, and thermal properties of polymers in relation to structure. Composite materials. Surface defects: corrosion, friction, adhesion.

Attributes:

- Liberal Arts

Restrictions:

- Must have the following level: Graduate

Prerequisites:

- CHE319 Minimum Grade of D-
- PHY202 Minimum Grade of D-

May not be repeated for credit

CHE590. Thesis in Chemistry (1-6). 0 Credits.

An individual research project conducted under the direction of a faculty advisor. Required form available in the Records and Registration Office.

Restrictions:

- Must have the following level: Graduate

May not be repeated for credit

CHE593. Chemistry Selected Topic. 3-12 Credits.

Selected topics courses are regularly scheduled courses that focus on a particular topic of interest. Descriptions are printed in the Schedule of Classes each semester. Selected topics courses may be used as elective credit and may be repeated for credit, provided that the topic of the course changes.

Restrictions:

- Must have the following level: Graduate

May be repeated for credit

CHE594. Fieldwork In Chemistry. 0 Credits.**Restrictions:**

- Must have the following level: Graduate

May not be repeated for credit

CHE595. Indep Study Chemistry. 1-12 Credits.**Restrictions:**

- Must have the following level: Graduate

May be repeated for credit

CHE599. Comprehensive Exam Workshop. 0 Credits.

Non-credit workshop for students who wish to devote the semester immediately following the completion of their coursework to prepare for the comprehensive exam.

Restrictions:

- Must have the following level: Graduate
- Must be enrolled in the following field(s) of study (major, minor or concentration): Chemistry (203)

May not be repeated for credit

CHE693. Chemistry Selected Topic. 3-12 Credits.**Restrictions:**

- Must have the following level: Graduate

May be repeated for credit

CHE795. Indep Study Chemistry. 1-12 Credits.**Restrictions:**

- Must have the following level: Graduate

May be repeated for credit

CHE799. Continued Registration. 1 Credit.**Restrictions:**

- Must have the following level: Graduate

May be repeated for credit