

# CHEMISTRY (CHEM)

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**CHEM 7400 Topics in Biochemistry 3 cr**

A lecture and seminar course dealing with selected topics of current interest in biochemistry and molecular biology.

**CHEM 7410 Spectroscopy and Molecular Structure 3 cr**

Applications of spectroscopic methods to chemical problems with emphasis on mass spectrometry and related techniques.

**CHEM 7450 Topics in Organic Chemistry 3 cr**

A discussion of current and general topics related to novel and interesting areas of organic chemistry appearing in the current literature.

**CHEM 7460 Topics in Synthetic Organic Chemistry 3 cr**

A course designed to acquaint students with specific methods of synthesis.

**CHEM 7520 Topics in Physical Chemistry 3 cr**

The topics will vary, depending on student needs and interests; they may include, but will not be limited to the following: electrochemistry, surface chemistry, electrochemical kinetics, or other specialized topics not available in regular course offerings.

**CHEM 7550 Design of Organic Synthesis 3 cr**

Conceptual methodology in the design of synthesis will be discussed with inclusion of computer-aided approaches. Examples from the current literature will be used to emphasize the conceptual aspects.

**CHEM 7560 Organometallic Chemistry 3 cr**

Recent advances in synthetic and structural organometallic chemistry.

**CHEM 7580 Chemical Crystallography 3 cr**

Theory and practice of crystal structure analysis with emphasis on single crystal x-ray diffractometry; structure-activity relationships in small organic and inorganic compounds; introduction to protein and nucleic acid crystal structure analysis.

**CHEM 7600 Topics in Inorganic Chemistry 3 cr**

Topics of current research interest in the area of inorganic chemistry including, but not limited to synthesis, structures, catalysis and reaction mechanisms.

**CHEM 7700 Topics in Analytical Chemistry 3 cr**

Topics of current research interest in analytical chemistry including, but not limited to, mass spectrometry of large molecules, separation techniques, analysis of metals, surface analytical techniques, analysis of environmental samples, analysis of 'real' samples, and sampling techniques.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisites: CHEM 4590 or permission of instructor.

**CHEM 7800 Topics in Theoretical Chemistry 3 cr**

Topics of current research interest in theoretical and computational chemistry from such areas as ab initio quantum chemistry, molecular simulations, nonlinear reaction dynamics, spectroscopy and statistical mechanics.

**CHEM 7900 Seminar in Current Research Issues in Chemistry 3 cr**

Student-led seminars covering areas of interest to the faculty and students in the graduate Chemistry program, and current research issues in the field of Chemistry (including biochemistry, spectroscopy, organic chemistry, physical chemistry, organic synthesis, organometallic chemistry, inorganic chemistry, analytical chemistry and theoretical chemistry).