

# CHEMISTRY (CHEM)

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## **CHEM 413 - ADVANCED ORGANIC CHEMISTRY**

Spectrometric methods for determining the structures of organic compounds. Mass spectrometry, proton and carbon FT-NMR, infrared, ultraviolet, and visible spectroscopy. Laboratory includes synthesis of organic compounds and applied spectroscopic methods.

Credits: 2,3

Attributes: Lab Course

Course Notes: Lecture and Lab course. Should have the equivalent of CHEM 202 with a min of C- and CHEM 212 with a min grade of C-.

## **CHEM 436 - ANALYTICAL CHEMISTRY**

Overview of analytical chemistry including classical methods for quantitative chemical analysis and instrumental analysis. Topics include statistical treatment of data and mathematical treatment of acid-base, solubility, complexometric, and electrochemical equilibria. Also covered are theories and techniques of instrumental methods of analysis including ultraviolet-visible and fluorescence spectroscopy, atomic absorption, gas and liquid chromatography, and mass spectrometry. Required laboratory provides experience in all of these techniques to analyze a variety of samples.

Credits: 2,3

Course Notes: Lecture and Lab course. Should have the equivalent of CHEM 201 with a minimum grade of C- and CHEM 202 with a minimum grade of C- and CHEM with a minimum grade of C-.

## **CHEM 452 - MEDICINAL CHEMISTRY**

Chemistry and pharmacology of the principal classes of drugs; history of the development of medicinal chemistry; mechanisms of drug action; relationships between molecular structure and biological activity; the literature of medicinal chemistry; evaluation of potential drugs; perspective on the design of new drugs.

Credits: 3

Course Notes: Graduate standing

## **CHEM 492 - RESEARCH IN CHEMISTRY**

Independent field- or laboratory-based research experience under the supervision of a faculty sponsor. A minimum of 3 completed semester hours will fulfill the research requirement for the MS degree. Up to 3 semester hours may be applied toward thesis requirements. Students may register in consecutive semesters.

Credits: 1-4

Course Notes: Consent of instructor. \$100 per semester hour. Students must arrange for independent laboratory research experience with a science faculty member prior to registration.

## **CHEM 495 - INDEPENDENT STUDY**

Credits: 1-6

Course Notes: Consent of instructor