CHEM 2310

Division: Natural Science and Mathematics
Department: Chemistry
Course: CHEM 2310
Title: Organic Chemistry I
Catalog Description:

This course is a study of the principles of the chemistry of carbon compounds. Emphasis is on functional group approach devoted to mechanisms and application of principles. Biochemical application is stressed in the lecture. (Designed for chemistry, chemical engineering, pre-medical, pre-pharmacy, pre-veterinary, pre-dental, medical technology, and many biological and agriculture majors.) This is a standard pre-professional course as commonly taught in the sophomore and junior years.

General Education Requirements: N/A
Semesters Offered: Fall
Credit/Time Requirement: Credit: 4; Lecture: 4; Lab: 0
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: CHEM 1210 and CHEM 1220 (successful completion of both)

Corequisites: CHEM 2330

Justification:

This course is offered by Chemistry departments at most institutions in the state and will transfer to all of them. It is required of most science related majors in the sophomore year. It will provide students majoring in Chemistry or other pre-professional areas a detailed course in organic structure, synthesis, and reaction mechanisms. Although this course is sometimes considered an upper division course at transfer institutions, for Chemistry Majors and pre-professional students it is expected to be taken in the the sophomore year.

Student Learning Outcomes:

Students will know basic organic functional groups, organic nomenclature and basic reactions and mechanisms. They will have a working knowledge of chemical reactivity, physical properties, preparation, nomenclature, and synthesis of organic compounds.

Content:

Chemistry 2310 is the first semester of a full year Organic Chemistry course. It includes the following major topics: Structures and Properties, Alkanes and Cycloalkanes, Acids and Bases, Stereochemistry, Alkenes I, Alkenes II, Alkyl Halides and Radical Reactions, Nucleophilic Substitution and _-Elimination, Alcohols and Thiols, Alkynes, Ethers, Sulfides and Epoxides, Mass Spectrometry, NMR, and IR / UV Analysis.

General Education Outcomes:

7) Apply scientific reasoning to a variety of contexts.
Students will be able to approach problems logically and come to a solution based on chemical principles. This will include their ability to apply nomenclature rules to compounds with several functional groups, to predict major and minor products of organic reactions, and to solve multi-step organic synthesis problems.

Key Performance Indicators:
Students will be assessed on a weekly basis through in class quizzes and tests. Homework will be assigned on a regular basis to give students the opportunity to check their own progress. GRADING POLICIES: TESTS (about 4) 65 % (final counts as two) QUIZZES (about 10) 20 % HOMEWORK 15 % (almost daily)

Representative Text and/or Supplies:
Bruice, Organic Chemistry, 3rd Edition, Prentice Hall Publishing, Philadelphia, Pa., 2001 (or current edition)

Optimum Class Size: 30
Maximum Class Size: 46

Signatures:

I hereby submit this course syllabus:

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I hereby find this course consistent with the goals and resources of the Chemistry Department:

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Mark Wathen, PhD, Assistant Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

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Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)