

I. COURSE INFORMATION

- A. Chemistry 265 Organic Chemistry I
- B. 5 credit hours
- C. Brown, Iverson, Anslyn, and Foote. *Organic Chemistry*. 8th ed. Cengage Learning, 2018
- D. Prerequisites: CHE 125 College Chemistry I & CHE 136 College Chemistry II or the equivalent

II. COURSE DESCRIPTION

Organic Chemistry I is an integrated lecture and laboratory course for chemistry and pre-Health Science students. This course covers the nomenclature, structures, and reactions of hydrocarbons, alcohols, and alkyl halides. Also, the stereochemistry and conformations of hydrocarbons, alcohols, and alkyl halides will be studied.

III. LEARNING OUTCOMES

- A. To review basic chemical and physical properties and concepts, such as bonding, geometric arrangement, acid-base definitions, melting and boiling points, intermolecular forces, densities; and to investigate how they apply to organic compounds
- B. To identify and distinguish organic compounds based on the functional group arrangement within the compound
- C. To correctly name organic compounds based on the following information: IUPAC rules, functional groups, stereochemistry, isomeric structure
- D. To investigate and establish the following reaction mechanisms: S_N1 , S_N2 , E_1 , E_2 , Free Radical, Electrophilic Addition: for the preparation and reactions of organic compounds
- E. To investigate the area of stereochemistry, and study how stereoisomers affect reactions, preparations, mechanisms, and physical and chemical properties in organic molecules
- F. To investigate and develop syntheses for the preparation of organic compounds
- G. To study proper laboratory techniques for the preparation and reactions of many of the organic compounds seen in lecture discussions

IV. MAJOR CONTENT AREAS

- A. Alkanes and Cycloalkanes: Structure, Conformation, and Stereochemistry
- B. Alcohols and Alkyl Halides: Structure, Nomenclature, Reactions and Mechanisms
- C. Nucleophilic Substitution Reactions and Mechanisms
- D. Alkenes: Structure, Nomenclature, Elimination and Addition Reactions
- E. Alkyne, Alkadienes, and Allylic Systems

V. ASSIGNMENTS (may include but are not limited to)

- A. Homework assignments
- B. Chapter quizzes and unit exams
- C. Laboratory exercises
- D. Final exam

VI. EVALUATION METHODS (may include but are not limited to)

- A. Attendance and participation
- B. Lab exercises
- C. Assignments
- D. Quizzes and exams