

University of Arkansas – Fort Smith
5210 Grand Avenue
P. O. Box 3649
Fort Smith, AR 72913–3649
479–788–7000

General Syllabus

CHEM 27163 Organic Chemistry I

Credit Hours: 3

Lecture Hours: 3

Laboratory Hours: 0

Prerequisite: CHEM 14203 College Chemistry II

Effective: 2018~2019

I. Course Information

A. Catalog Description

Covers the structural, stereochemical, physical, and chemical properties of hydrocarbons and alkyl halides. Mechanisms of substitution, elimination, and additional reactions will be used to explain trends in chemical reactivity.

B. Additional Information – None

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Assign names to hydrocarbons, and alkyl halides.
2. Demonstrate and explain the principles of chemical kinetics and chemical equilibrium and apply them to the mechanisms of substitution, addition, and elimination reactions.
3. Predict the physical properties and chemical reactivity of a substance based on its molecular structure.
4. Assign stereochemistry to Alkanes and Alkenes.

B. University Learning Outcomes

Organic Chemistry I enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students will identify a problem or issue and will research, evaluate, and compare information from varying sources in order to evaluate authority, accuracy, recency, and bias relevant to the problems/issues. Students will generate

solutions/analysis of problems/issues evaluated and will assess and justify the solutions and/or analysis.

Communication Skills (written and oral)

Students will communicate proficiently. Students will compose coherent documents appropriate to the intended audience and effectively communicate orally in a public setting.

Ethical Decision Making

Students will model ethical decision-making processes. Students will identify ethical dilemmas and affected parties and will apply ethical frameworks to resolve a variety of ethical dilemmas.

Global & Cultural Perspectives

Students will reflect upon cultural differences and their implications for interacting with people from cultures other than their own. Students will demonstrate understanding or application of their discipline in a global environment and will demonstrate how their discipline impacts or is impacted by different cultures.

III. Major Course Topics

- A. Structure and Properties of Molecules
- B. Alkanes: Preparation, Properties, and Reactions
- C. Stereochemistry
- D. Cycloalkanes: Properties, Conformations, and Reactions
- E. Alkyl Halides: Nucleophilic Aliphatic Substitution
- F. Alkenes: Preparation, Properties, Conformations, and Reactions
- G. Alkynes: Preparation, Properties, and Reactions