

Global Learning Semesters

Course Syllabus

Course: CHEM-250 Organic Chemistry I

Department: Biomedical Sciences

Host Institution: University of Nicosia, Nicosia, Cyprus



Course Summary		
Course Code	Course Title	Recommended Credit Hours
CHEM-250	Organic Chemistry I	5
Semester Offered	Contact Hours	Prerequisites
Please contact us	42-45	CHEM-160
Department	Level of Course	Language of Instruction
Biomedical Sciences	Lower Division	English

Course Description

Introduction to the structure and chemical reactivity of organic compounds. Topics include alkenes and cycloalkanes, an overview of the principal types of organic reactions, the structure and reactivity of alkenes and alkynes, and stereochemistry. The course includes a rigorous laboratory program that emphasizes the synthesis and analysis of organic compounds, as well as the extraction and isolation of organic products from natural substances. The format of the course is 3h/week lectures, 3h/week laboratory session and 1h/week tutorial session.

Prerequisites

CHEM-160

Topic Areas

1. Structure and Bonding, Acidity
2. Polar Bonds and their Consequences
3. Alkanes and Cycloalkanes
4. Stereochemistry of Alkanes and Cycloalkanes, Cyclohexane conformers
5. Organic Reactions: Additions, Substitutions, Eliminations, Rearrangements
6. Structure and Reactivity of Alkenes
7. Reactions and Synthesis of Alkenes
8. Organic Synthesis and Alkynes
9. Stereochemistry: Enantiomers, Optical Activity, Fischer projections

Laboratory

1. Basic Organic Laboratory Techniques
2. Functional Group Analysis I
3. Functional Group Analysis II
4. Dibenzalacetone by the Aldol Condensation
5. Fractional Distillation
6. Extraction of Caffeine from Tea Leaves
7. Purification of Caffeine by Sublimation / Preparation of a Caffeine Derivative
8. Bromination and Debromination: Purification of Cholesterol
9. Thin layer chromatography: A study of several analgesics
10. Column Chromatography: Separating a Mixture of Ferrocene and Acetylferrocene

Readings and Resources

Required Textbooks

1. Organic Chemistry, 5th Edition, by McMurry, Brooks/Cole Publishing Company, 2000. (ISBN: 0-534-37366-6)
2. Organic Experiments, 8th Edition by L.F. Fieser and K.L. Williamson, Houghton Mifflin Company, 1998. (ISBN: 0-395-86519-0)