CHEM 2310 ORGANIC CHEMISTRY I (4 credit hours)

Elmira College

SPRING 2025

Required Text:
Organic Chemistry, 7th edition, by Loudon and Parise.

Pre-requisites: CHEM 1400 Fundamentals of General Chemistry.

Course Description

Organic Chemistry I serves as an introduction to the foundational principles of organic chemistry. The course focuses on the structures, properties, and chemical reactivity of carbon atoms in different hybridization states, particularly in alkanes (including cycloalkanes), alkenes, and alkynes. Additionally, various aspects of isomerism in organic compounds and reaction mechanisms (substitution, elimination, and addition) will be covered with an emphasis on electron flow.

Course Objectives and Goals

- Understand the relationship between molecular shape and current bonding models in organic chemistry.
- Apply the basic mechanisms to rationalize the conditions and derive the outcomes of the reactions of alkanes, alkyl halides, alkenes, dienes, alkynes, alcohols, ethers, epoxides, and organometallic compounds.
- Explain the mechanisms of substitution, elimination, and addition reactions in terms of electron flow.
- Appreciate the relevance of organic chemistry in biological processes and daily life.

Evaluation of Performance

Your grade will be based upon your performance on exams, assignments, and participation.

6 Labs and Lab Reports	30%
2 Quizzes	20%
Midterm Exam	20%
Final Exam	30%
Total	100%

Grades will be assigned as follows:

A	93% and above	B-	80 - 82%	D+	67 - 69%
A-	90 - 92%	C+	77 - 79%	D	63 - 66%
B+	87 - 89%	C	73 - 76%	D-	60 - 62%
B	83 - 86%	C-	70 - 72%	F	59% or below

Withdrawal Policy: Please see Elmira College Bulletin for information on this policy.

Academic Honesty: Please read the section on Academic Honesty in the **Code of Conduct**. Briefly, academic dishonesty includes: cheating, fabrication, facilitating academic dishonesty, and plagiarism. Ask if you have any questions on whether something constitutes as academic dishonesty. All work must be original and new. Past assignments from current or other courses will not be accepted. Academic dishonesty will not be tolerated. It will result in zero on the assignment, and a report will be filed with the school. Continued practice will result in failure of the class. Institutional penalties may also apply with repeated acts of academic honesty.

Student Responsibility:

- It is your responsibility to keep track of assignments and due dates.
- You should ask questions concerning assignments and lectures, if you need any clarifications.
- If you are struggling in class, have concerns, and/or unsure about expectations, please stop by during office hours or make an appointment for another time.

Tentative Schedule of Topics

Topic	Materials	Tasks & Evaluations
Chemical Bonding and Chemical Structure	Chapter 1	
Alkanes and Organic Nomenclature Lab #1	Chapter 2	Lab Report #1
The Curved-Arrow Notation, Resonane, Acids and Bases, and Chemical Equilibrium	Chapter 3	
Introduction to Alkenes and Alkynes	Chapter 4	Quiz 1
Addition Reactions of Alkenes and Alkynes Lab #2	Chapter 5	Lab Report #2
Principles of Stereochemistry	Chapter 6	
Cyclic Compounds and Reaction Stereochemistry Lab #3	Chapter 7	Lab Report #3
Nomenclature and Noncovalent Intermolecular Interactions	Chapter 8	Midterm Exam
The Chemistry of Alkyl Halides	Chapter 9	
Substitution and Elimation Reactions Lab #4	Chapter 10	Lab Report #4
Free-Radical Reactions, Main-Group Organometallic Compounds, and Carbenes	Chapter 11	
The Chemistry of Alcohols and Thiols The Chemistry of Ethers, Epoxides, Glycols, and Sulfides Lab #5	Chapter 12	Lab Report #5
The Chemistry of Ethers, Epoxides, Glycols, and Sulfides	Chapter 13	Quiz 2
Introduction to Spectroscopy: Infrared Spectroscopy and Mass Spectrometry Lab #6	Chapter 14	Lab Report #6
Nuclear Magnetic Resonance Spectroscopy	Chapter 15	Final Exam