Course Information Form (CIF)

Course Code: CHE 204 (IAI CHM 913)
Course Title: Organic Chemistry Lab I

Department: Natural Sciences
PCS Code: 1.1 - Baccalaureate/Transfer
CIP Code: 40.0504
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 1-3-2
Credit Hour Distribution:

Lecture: 1	Lab: 3	Clinical: 0	**Total: 2**

General Course Information

Catalog Description

Introduction to laboratory techniques relevant to organic chemistry, including synthesis, extraction, separations, and spectroscopy.

General Course Objectives

To introduce laboratory techniques relevant to organic chemistry such as synthesis, extraction, separations, and spectroscopy.

Minimum Placement Levels

English	Reading	Math
None	Placement out of CCS 098	None

Prerequisites

Credit or concurrent enrollment in CHE 203 or equivalent

Methods of Evaluation

9-13 laboratory reports, midterm, final, lab practical, and project (involves reading and writing applicable to lab).

Instructional Materials and Additional Supplies

Experiments for Organic Chemistry I, current edition, Hansen, Stipes Publishing.
The Organic Chem Lab Survival Manual, current edition, James W. Zubrick, Wiley.

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Introduction to Lab/Safety/Check-In	1. Explain lab policies; practice chemistry safely.	0	1	0
LAB: Melting Points	1. Perform the following technique: melting point.	1	2	0
LAB: Recrystallization	1. Perform the following techniques: melting point, recrystallization, and vacuum filtration.	1	3	0
LAB: Separation by Extraction	1. Perform an extraction. 2. Demonstrate the use of the rotary evaporator.	1	3	0
LAB: Thin Layer Chromatography	1. Characterize the components of a mixture by means of physical properties. 2. Perform the technique of thin-layer chromatography.	1	3	0
LAB: Column Chromatography	1. Prepare a column. 2. Use column chromatography to separate compounds in a mixture.	1	3	0
LAB: Distillation and Gas Chromatography	1. Perform a distillation (fractional or simple). 2. Demonstrate use of the gas chromatograph. 3. Discuss the principles of homogeneous distillation.	1	3	0
LAB: Natural Product Isolation	1. Perform the following techniques: extraction, thin-layer chromatography, IR spectroscopy, use of a rotary evaporator, and steam distillation.	1	3	0
LAB: Infrared Spectroscopy	1. Demonstrate the ability to take an infrared spectrum. 2. Interpret an IR spectrum.	1	3	0
LAB: Preparation of an Alkene	1. Synthesize and identify an alkene. 2. Perform heterogeneous distillation. 3. Interpret an IR spectrum.	1	3	0
LAB: Reaction of an Alkene	1. Perform an alkene reaction and identify the product. 2. Perform a reflux. 3. Perform the following techniques: thin-layer chromatography and IR spectroscopy.	1	3	0
LAB: Spectroscopy	1. Demonstrate the ability to interpret H NMR spectra.	1	3	0
LAB: Substitution Reaction	1. Perform a substitution reaction; identify product. 2. Perform the following techniques: distillation, IR spectroscopy.	1	3	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
LAB: Qualitative Analysis	1. Perform a modified qualitative analysis of an unknown organic compound. 2. Interpret IR and H NMR spectra. 3. Choose and synthesize a derivative. 4. Determine mp of derivative and identify unknown.	1	3	0
Project	1. Demonstrate ability to analyze chemical literature.	1	3	0
LAB: Practical	1. Assess knowledge of proper techniques to be used and ability to perform techniques.	1	3	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
15	45	0