straighterline

Syllabus

CHEM250L | **Organic Chemistry I Lab**

Course Texts

Custom Lab Kit from Science Interactive. Access https://esciencelabs.com/have/code to search for Kit LP-5006-OC-01 which is $189 (plus shipping).

Course Description

This lab-only course is designed as a standalone addition to the Organic Chemistry I course. Students will complete at-home laboratory experiments, track and record results, answer lab-based questions reflected in graded lab reports, and complete lab-based assessments to meet the lab requirement. The labs are provided by eScience Labs, a leading provider of at-home lab kits and online lab instructional materials and resources. Labs will cover the following topics: drawing organic compounds, melting points, naming organic compounds, hydrocarbons, stereochemistry I & II, column chromatography to separate dyes, polymers and the Synthesis and Analysis of Soap.

Learning Outcomes

After completing this course, students will be able to:

1. Illustrate organic compound structural isomers based on molecular formulas
2. Calculate the melting point of tetracosane and 1-tetradecanol
3. Predict the names of organic compounds based on their structure
4. Contrast hydrocarbons based on their melting points and solubility properties
5. Construct models of simple hydrocarbons, aromatics, aldehydes, and ketones using a molecular modeling kit
6. Construct models of geometric and optical isomers with a molecular modeling kit
7. Extract two food dyes in grape soda using column chromatography
8. Synthesize a polymer from polyvinyl acetate glue and sodium tetraborate
9. Synthesize four soaps from plant oils

Course Prerequisites

There are no prerequisites to take Organic Chemistry I lab, though we highly recommend concurrent enrollment in Organic Chemistry I (CHEM250).

Academic Integrity Statement

Academic integrity is the pursuit of scholarly activity in an honest, truthful and responsible manner. Violations of academic integrity include, but are not limited to, plagiarism, cheating, fabrication and academic

misconduct. Failure to comply with the Academic Integrity Policy can result in a failure and/or zero on the attempted assignment/examination, a removal from the course, disqualification to enroll in future courses, and/or revocation of an academic transcript.

Course Completion Policy

In order for a course to be considered complete, **all required coursework must be attempted, submitted, and graded.** Required coursework consists of graded assignments. Any Academic Integrity Policy violations may prevent a course from being considered complete.

Assessment Types

StraighterLine courses may include any combination of the assessment types described below. Review the descriptions to learn about each type, then review the Course Evaluation Criteria to understand how your learning will be measured in this course.

Benchmarks
Benchmarks test your mastery of course concepts. You have 3 attempts, and your highest score counts.
Note: Cumulative Benchmarks (final exams) only allow 1 attempt.

Capstones
Capstones are project-based assessments that help you apply concepts to real-world scenarios. You have 2 attempts, and your highest score counts.

Checkpoints
Checkpoints are quick knowledge checks on important course concepts. All are open-book, and most have 1-3 attempts.

AI Use-Case Policies

StraighterLine Capstone assessments operate under one of three AI Use-Case Policies. These designations are selected intentionally to support learners in developing digital literacy, ethical reasoning, and authentic communication skills. Each model requires students to engage meaningfully with the course outcomes while adhering to academic standards.

Independent Work Requirement: Capstones with this designation must be completed independently without using AI tools. The goal is for learners to showcase their own understanding and skills without AI assistance. Students are expected to generate and submit original work developed solely through their own reasoning and effort.

AI-Assisted Planning Option: Capstones with this designation may allow AI tools to support brainstorming and assessment planning. If allowed, students will be asked to document any AI assistance by noting how it informed their work. Documentation must be included within the assignment or in a designated reflection field. Examples include describing how an AI tool helped organize an outline, generate ideas, or surface sources for further exploration.

AI-Integration Requirement: Capstones with this designation require AI tools as part of the learning process. Students will be asked to reflect upon their AI interactions and AI contributions to the assessment.

Reflections must include which tools were used, how they were used, and what insights students gained from the process. This promotes transparency, ethical use, and metacognitive skill-building.

Course Evaluation Criteria

Your score provides a percentage score and letter grade for each course. A passing percentage is 70% or higher.

There are a total of 1000 points in the course:

Assessment	Points
Checkpoint 0: Lab Kit Photos	10
Checkpoint 1: Drawing Organic Compounds	15
Capstone 1: Drawing Organic Compounds	101
Checkpoint 2: Melting Points	15
Capstone 2: Melting Points	75
Checkpoint 3: Naming Organic Compounds	15
Capstone 3: Naming Organic Compounds	69
Checkpoint 4: Hydrocarbons	15
Capstone 4: Hydrocarbons	40
Checkpoint 5: Stereochemistry I	15
Capstone 5: Stereochemistry I	114
Checkpoint 6: Stereochemistry II	15
Capstone 6: Stereochemistry II	104
Checkpoint 7: Chromatography	15
Capstone 7: Chromatography	190
Checkpoint 8: Polymers	15
Capstone 8: Polymers	71
Checkpoint 9: Analysis of Soap	15
Capstone 9: Analysis of Soap	91
Total	1000

Course Roadmap

This roadmap provides an overview of the checkpoints and lessons covered in this course.

Checkpoint 0: Lab Kit Photos

- Checkpoint 0: Lab Kit Photos

Checkpoint 1: Drawing Organic Compounds

- Checkpoint 1: Drawing Organic Compounds Lecture & Instructions

Checkpoint 2: Melting Points

- Checkpoint 2: Melting Points Lecture & Instructions

Checkpoint 3: Naming Organic Compounds

- Checkpoint 3: Naming Organic Compounds Lecture & Instructions

Checkpoint 4: Hydrocarbons

- Checkpoint 4: Hydrocarbons Lecture & Instructions

Checkpoint 5: Stereochemistry I

- Checkpoint 5: Stereochemistry I Lecture & Instructions

Checkpoint 6: Stereochemistry II

- Checkpoint 6: Stereochemistry II Lecture & Instructions

Checkpoint 7: Chromatography

- Checkpoint 7: Column Chromatography to Separate Dyes Lecture & Instructions

Checkpoint 8: Polymers

- Checkpoint 8: Polymers Lecture & Instructions

Checkpoint 9: Analysis of Soap

- Checkpoint 9: Synthesis and Analysis of Soap Lecture & Instructions

Related Courses

CHEM250
Organic Chemistry I

MAT250
General Calculus I

BIO101
Introduction to Biology

View Course →

View Course →

View Course →