

University of Arkansas - Fort Smith
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General Syllabus

CHEM 30661 Organic Chemistry I Laboratory

Credit Hours: 1 Lecture Hours: 0 Laboratory or other types of Hours: 3

Prerequisite or Corequisite: CHEM 31663 Organic Chemistry I

Effective Catalog: 2026

I. Course Information

A. Catalog Description

Introduction to basic lab techniques common in organic chemistry including separation, purification and identification of organic compounds. Introduction to mass spectrometry, infrared, and nuclear magnetic resonance spectroscopy. Small molecule synthesis is introduced.

II. Student Learning Outcomes

A. Subject Matter

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

1. Identify mini and microscale glassware
2. Demonstrate and explain separation techniques and synthesis
3. Construct a lab report organizing experimental observations and relevant data
4. Interpret mass spectrometry, and infrared and nuclear magnetic resonance spectroscopy data to predict a reasonable organic structure

B. University Learning Outcomes

Organic Chemistry I Laboratory 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 using the vocabulary of organic chemistry.

III. Major Course Topics

- A. Preparing an organized laboratory notebook
- B. Common organic chemistry separation and purification techniques
- C. Small molecule synthesis
- C. Organic lab glassware
- D. Mass spectrometry
- E. Infrared and nuclear magnetic resonance spectroscopy technique and interpretation