

# Syllabus for Organic Chemistry Laboratory 1

CHEM 129A, Fall 2020 (Virtual Classroom)

Coordinator: Hubert Muchalski, Ph.D.

## Virtual classroom policies and statements

### Intellectual Property

As part of your participation in virtual/online instruction, please remember that the same student conduct rules that are used for in-person classrooms instruction also apply for virtual/online classrooms. Students are prohibited from any unauthorized recording, dissemination, or publication of any academic presentation, including any online classroom instruction, for any commercial purpose. In addition, students may not record or use virtual/online instruction in any manner that would violate copyright law. Students are to use all online/virtual instruction exclusively for the educational purpose of the online class in which the instruction is being provided. Students may not re-record any online recordings or post any online recordings on any other format (e.g., electronic, video, social media, audio recording, web page, internet, hard paper copy, etc.) for any purpose without the explicit written permission of the faculty member providing the instruction. Exceptions for disability-related accommodations will be addressed by Services for Students with Disabilities (SSD) working in conjunction with the student and faculty member.

In addition to course policies, you are expected to be familiar with Academic Regulations described in the [University Catalog](#) as well as policies listed below.

### Health screening

Students who come to campus for face-to-face classes will be required to complete a daily health screening which will include temperature checks. If you have experienced COVID-19 symptoms and/or have tested positive within the past 10 days; or if you have had close contact (less than 6 feet for longer than 15 minutes while unmasked) with a suspected or confirmed COVID-19 patient within the past 14 days, you are not allowed to come to campus. Please complete the campus [online reporting form](#). A campus official will reply to provide guidance and information.

### Safety Measures

Consistent with the Governor's order and updated state public-health guidelines, face masks or cloth face coverings are required to be worn in public spaces on-campus and during in-person classes to reduce possible exposure to COVID-19 and prevent the spread of the virus. Physical distancing must be practiced by maintaining 6 feet of distance between individuals. Good hygiene

of hand washing for a minimum of 20 seconds or using hand sanitizer is required. Please avoid touching your face with unclean hands. Disposable face masks will be provided to anyone who arrives to campus without one. Please see university website for the most updated information: [www.fresnostate.edu/coronavirus](http://www.fresnostate.edu/coronavirus)

### **Contact information for course coordinator, department chair and college dean**

If there are questions or concerns that you have about this course that you and I are not able to resolve, please feel free to contact the course coordinator Dr. Hubert Muchalski. If the issue cannot be resolved with the lab coordinator, please contact the department and/or college administrators:

- Dr. Joy Goto (Chair, Chemistry Department): [jgoto@mail.fresnostate.edu](mailto:jgoto@mail.fresnostate.edu)
- Chemistry Department Office: (559) 278-2103
- Dr. Christopher Meyer (Dean, College of Science and Mathematics): [cmeyer@mail.fresnostate.edu](mailto:cmeyer@mail.fresnostate.edu)

### **Changelog**

This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent. Changes and corrections are listed in the changelog below and will be announced on Canvas.

- 2020-08-17: Published on Canvas; added COVID-19 policies
- 2020-08-11: Draft sent for to instructors for review

## Introduction

Welcome to CHEM 129A, Organic Chemistry Laboratory! This course will introduce you to one of the richest and most beautiful areas of modern chemistry: *chemistry of carbon compounds*. In CHEM 129A, we will learn skills that are essential for performing experiments in organic chemistry laboratory.

*Read the syllabus carefully.* Almost all questions about the course that you might ask can be answered by referencing the syllabus. If you are uncertain that you understand all rules and regulations, please contact the instructor. Also, the syllabus for my sections differs slightly from those used in other sections

- **Course name and number:** CHEM 129A (2 Units)
- **Prerequisites:** CHEM 128A with a grade of C or better. CHEM 128A can be taken concurrently.
- **Instructor:** Hubert Muchalski, PhD
- **Contact:** phone (559) 278-2711, or email [hmuchalski@mail.fresnostate.edu](mailto:hmuchalski@mail.fresnostate.edu)
- **Office Hours:** Appointments can be scheduled through calendar function "Find Appointments" on Canvas.

## What is CHEM 129A

CHEM 129A is a two-unit introductory laboratory course in organic chemistry. It is primarily concerned with introducing the tools and techniques that chemists use to synthesize and investigate the properties of organic compounds (see the [list below](#)). Some of these techniques are the same or similar to those you learned in general chemistry courses but may be modified because the experiments use very small amounts of material (micro-scale techniques). Students who successfully complete CHEM 129A generally enroll in CHEM 129B, which further develops students' laboratory skills. Some students then continue with CHEM 190, undergraduate research or independent study.

## Student Learning Outcomes

Students who successfully complete CHEM 129A should be able to:

- understand how to work safely in the laboratory, including the disposal of chemical wastes
- communicate the structure and properties of organic molecules using common drawing and naming conventions
- analyze chemical structures and reaction conditions to make and defend predictions about chemical transformations
- maintain an accurate laboratory notebook that would allow a trained organic chemist to repeat the experimental and reproduce the results
- use drawing software such as ChemDraw to draw chemical structures and reactions
- plan an experiment by evaluating the information found in online databases and research articles
- conduct experiments that involve laboratory techniques such as extraction, crystallization, distillation, and chromatography

- measure physical properties of organic compounds including melting and boiling points
- analyze purity and chemical identity of organic compounds using TLC, GC, and IR
- analyze the results of an experiment and be able to identify sources of error and suggest improvements
- communicate the results of experiments to the instructor and peers in a written form (lab report)

## Course materials and technology

- **Textbook:** “A Micro-scale Approach to Organic Laboratory Techniques” by Donald Pavia et al. published by Thompson/Brooks Cole. All page/section/experiment numbers refer to the 6th edition. Previous editions will also be sufficient to learn the material, but page/section/experiment numbers may differ.
- **Canvas:** The central repository for all course materials and information is our Canvas site, accessible through <https://fresnostate.instructure.com/courses/3782>. The Canvas site will house your grades, links to handouts, videos, and other materials.
- **Zoom:** Virtual class meetings will be held via Zoom. Links and passwords to zoom meetings will be published on Canvas.
- **Document scanning:** Many assignments in this course are designed to be prepared by hand on paper. Few people own document scanners nowadays, but a mobile device with a scanning app can do a sufficient job at converting paper documents into PDFs. There are number of options available for both iOS and Android. Find one that you like and learn how to use it.

## Laboratory Code of Safe Practices

1. NO food or drink in the laboratory.
2. Wear clothing appropriate for laboratory work.
3. Select and correctly use appropriate Personal Protective Equipment (PPE).
4. Know what to do and who to contact in an emergency in the laboratory.
5. Avoid distractions and be alert to and aware of your surroundings and potential hazards in your area.
6. Maintain a safe and clean work area.
7. Only conduct experiments or procedures approved by your lab instructor or research advisor.
8. Understand the common chemical hazards and hazards specific to the chemicals and procedures with which you are working.
9. Understand and follow best practices on how to handle, transport, store, and dispose of chemicals safely.
10. If any equipment, glassware, or procedures are not working properly or as expected, notify your instructor before proceeding.
11. Notify your instructor if you have, develop, or may develop any medical conditions (e.g. severe asthma, limited mobility, vision impairment, pregnancy, etc) that may affect your safety in the laboratory or sensitivity to chemicals, so that your instructor can properly advise or accommodate you on minimizing the risks associated with laboratory work.

These principles will be discussed in detail during the first week of class. More information can be found here: <https://goo.gl/1UFRbo>. Also, refer to *Guidelines for Chemical Laboratory Safety in Academic Institutions* published by American Chemical Society.

## Expectations

Due to the ongoing coronavirus pandemic this class is delivered virtually in a blended mode, as a combination of synchronous and asynchronous activities. Activities planned for synchronous meetings will rely on breakout rooms. Although the sessions may be recorded, activities within breakout rooms are not being recorded.

I expect that you will be present during virtual class sessions equipped with a basic understanding of the concepts that will allow you to fully participate in discussions. Preparing for the class means making honest effort to learn on your own. This is done by:

- reading the assigned material related to the experiment;
- preparing the pre-lab assignment;
- reviewing the relevant techniques for each experiment (listed in the introduction section for each experiment);
- watching videos demonstrating laboratory techniques; and
- reviewing safety data sheets (SDS) for chemicals you will be working with.

## Grading

Grade	Total Score
A	90–100%
B	80–89%
C	70–79%
D	60–69%
F	<60%

Graded assignments are organized into 11 assignment groups. Ten content-driven groups contribute 8% of the final grade. Four exams contribute the remaining 20%.

Module	%Weight
Solubility	8%
Crystallization	8%
Extraction	8%
Chromatography	8%

Module	%Weight
Distillation & GC	8%
Fischer Esterification	8%
Nucleophilic Substitution	8%
Synthesis of Acetaminophen	8%
Steam distillation of eugenol	8%
Miscellaneous	8%
Exams (5% each)	20%
Total	100%

## Course policies

### Technology issues when submitting work

For assignments submitted electronically, it is your responsibility to make sure they are submitted on time, through any means necessary, even if technology issues arise. If a tech issue arises, it is your responsibility to find another way to get it to me (for example, via an email attachment). Technology issues that are avoidable or resolved with a simple work-around will not be considered valid grounds for a deadline extension. For example, if you are trying to upload a Lab to Canvas and Canvas won't accept the file, you should try again later or send the file as an email attachment until you can upload it successfully.

### Respondus Lockdown Browser

Respondus Lockdown Browser is a custom browser that locks down the testing environment within Canvas. When students use the Respondus Lockdown Browser they are unable to print, copy, go to a URL, or access other applications. When an assessment is started, students are locked into it until they submit it for grading. Available for both Windows and Mac. Respondus Lockdown Browser does not work on a Chromebook.

Respondus Lockdown Browser uses a standard Windows or Mac installer that can be downloaded by faculty or students from the following link (note: this link is unique for Fresno State):

<http://www.respondus.com/lockdown/download.php?id=749643058>

### Academic Dishonesty

For most assignments you are allowed and encouraged to work with others. However, the final product that you submit for feedback must be the result of your own efforts. Therefore you may share ideas and strategies with others, but collaboration on the actual finished product you submit is not allowed. Your work is expected to be the product of your own thinking, written and explained in your own words with no parts of the work copied from external sources such as books or

websites, and done clearly enough in your own mind that you could explain the work from start to finish if asked. Specifically, this excludes:

- copying work from another student;
- copying work from a website;
- paraphrasing work done by another student or from print or internet resources—i.e. putting it in your own words—without coming up with the main ideas and strategies yourself; and
- *allowing or enabling* another student to copy or paraphrase work that you did, even if you did the original work yourself.

Violation of this policy is considered “academic dishonesty” and carries with it strong punitive measures mandated by Fresno State, including possible automatic failure of the course or suspension from the university. For details, please see APM 235 by going to <http://www.fresnostate.edu/aps/documents/apm/235.pdf>.

You may feel tempted to academic dishonesty at some point in the semester. The work can be difficult, and many of you are under a lot of stress. If you are considering academic dishonesty, please STOP, take a breath, and remember that your classmates and I want you to succeed in the course. You are not alone, and you have a strong network in the class for getting help. The revision and resubmission policies mean that it's OK to turn in work that isn't perfect. There is no need to be academically dishonest! Just do your best on the work, and you'll have the chance to revise it later.

### **Dropping the course after the census date**

A *serious and compelling reason* is defined as an unexpected condition that is not present prior to enrollment in the course that unexpectedly arises and interferes with a student's ability to attend class meetings and/or complete course requirements. The reason must be acceptable to and verified by the instructor of record and the department chair. The condition must be stated in writing on the appropriate form. The student must provide documentation that substantiates the condition.

Failing or performing poorly in a class is not an acceptable “serious and compelling reason” within the University policy, nor is dissatisfaction with the subject matter, class or instructor.

## **University policies and disclaimers**

**Students with Disabilities:** Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the Henry Madden Library, Room 1202 (278-2811).

- Class Schedule Policies: <http://fresnostate.edu/studentaffairs/classsschedule/policy/>
- Copyright Policy: <http://libguides.csufresno.edu/copyright>
- Students with Disabilities: <http://fresnostate.edu/studentaffairs/careers/students/interests/disabilities.html>
- Academic Integrity and Honor Code: <http://www.fresnostate.edu/academics/facultyaffairs/documents/apm/236.pdf>

- Policy on Cheating and Plagiarism: <http://fresnostate.edu/studentaffairs/studentconduct/policies/cheating-plagiarism.html>
- Add/Drop Course: <http://www.fresnostate.edu/studentaffairs/registrar/registration/>
- Computer requirements: <https://www.fresnostate.edu/catalog/academic-regulations/index.html#computerreq>
- Disruptive classroom behavior: <http://www.fresnostate.edu/academics/facultyaffairs/documents/apm/419.pdf>

## University Services

- Associated Students, Inc.
- Dream Success Center
- Learning Center Information
- Student Health and Counseling Center
- Writing Center