Organic Chemistry I Laboratory – 1021
CHEM 2462 Section 1
Summer Quarter, 2020

Welcome to Organic Chemistry II Lab! This is the second of a three-quarter series lab series that is vital for understanding organic chemistry. Students will learn proper lab technique including chemical reaction setup, workup, purification, and analysis. The details of instrumental methods available to organic chemists will also be covered. Having established core lab skills and knowledge of literature searching and computational chemistry, students will engage in experimentation designed to hone such skills and bolster fundamental understanding of organic chemistry.

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Lab: MTWR 12:00 p.m. – 3:30 p.m. in F.W. Olin Hall, Room 232

Office Hours: By appointment through Zoom. Please e-mail me at least one day in advance.

Textbook: *Laboratory Techniques in Organic Chemistry, Fourth Edition*
Mohrig, et. al., W.H. Freeman and Co., © 2014, ISBN 978-1-4641-3422-7 (Techniques - Required)

CATALYST Organic Chemistry Lab, CHEM 2461, 2462, 2463 by J. Hornback (some labs – not required)

Personal Protective Equipment (PPE): Students will be required to wear safety goggles and a lab coat during lab. Both are available in the lab.

Laboratory Notebook: A lab notebook is required for the course.

Useful Website: https://www.organicdivision.org/links/

Canvas: The University of Denver uses Canvas as its learning management system. You may log in to https://du.instructure.com with your DU ID number and PioneerWeb password to access the course. Please ensure your settings allow for e-mail announcement notifications. I will post laboratory worksheets routinely on Canvas. Here are some helpful Canvas resources to get you started:

Canvas Student Quickstart Guide: http://guides.instructure.com/m/8470
Canvas Student Guide: http://guides.instructure.com/m/4212

Academic Integrity: I have high expectations for each and every one of you as students at the University of Denver. While I encourage group study sessions outside of class, I expect you to work independently during in class examinations. Any deviations from this policy will not be tolerated. For more information, please see the University of Denver's official Honor Code at: http://www.du.edu/studentlife/studentconduct/

Science and Engineering Center: Need extra help? The Science and Engineering Learning Center is a collaborative space staffed by undergraduate and graduate learning assistants (LAs) trained to assist students with some first and second year biology, chemistry, physics, computer science and engineering courses. We offer support for both lecture and laboratory courses for chemistry, physics, and engineering courses and lecture only for computer science and biology. Our goal is to help students grow as problem solvers by assisting with homework sets, lab reports, and preparing for exams. The Science and Engineering Learning Center is **not** a one-on-one tutoring center, but is rather a support system where students can get guidance from LAs as well as their peers. This center is open to all DU students. All services are free. Located through Zoom. See http://portfolio.du.edu/sec for a complete schedule.

Parts of a Lab Assessment:

Pre-lab assignments
Each lab will have a pre-lab assignment completed in a laboratory notebook. The laboratory notebook handout provides the structure for what is required of pre-lab assignments. These assignments are designed to help you with the following: understand new lab techniques, complete lab in a timely fashion, and to ensure safety. Therefore, pre-lab question assignments will be due at the **beginning** of the assigned lab period. No credit will be given for late work.

Lab Performance
This part reflects your preparedness for lab, attention to lab techniques, safety, cleanliness, condition of the area surrounding the student's space, and completing the lab in a timely manner. You will lose points for behaviors that violate safety rules and/or demonstrate poor lab skills. For example, not having a lab procedure ready, use of cell phone in lab, spilled chemicals, unlocked drawers, inappropriate conduct, using equipment incorrectly, or equipment left out will result in a loss of points. Please see the lab performance rubric for more details. In addition, the instructor reserves the right to ask any student who creates a serious safety hazard to leave with zero credit for that lab.

Post-lab assignments (Reports)
Each lab will have a post-lab assignment due at the **beginning** of a lab period according to the schedule. Post-labs should be typed unless noted. Late lab reports will lose points according to the following guidelines: One day late = minus five points, a week late = minus 30 points.

Course Grading
Your score in the course will be determined using a point system listed below [Subject to change]:

Areas Evaluated	**Frequency x Points**	**Total Points in Area**	**~% of Grade**
Pre-lab	7 x 20	140	18
Lab performance	7 x 40	280	35
Post-lab or Report	7 x 40	280	35
Safety Monitor	50	50	6
Lab Final – Structure Determination	50	50	6
Total Points		**800**	**100**

Letter Grades will be assigned based on this rubric and overall class performance.

Laboratory Safety
The mastery of Chemistry requires the student to master laboratory skills and the handling of chemicals with various levels of associated hazards. The University has taken the necessary steps to minimize student risks by equipping Chemistry labs with modern equipment that lower student exposure to hazardous chemicals as well choosing safe labs and procedures. Nevertheless, the students need to embrace and follow all safety procedures outlined for each laboratory. Failure to comply can result in the student receiving a zero for that particular lab and repeated problems can result in an **F** on the course.

Attendance
Regular attendance is required. You must be in the lab on time to receive full credit for the lab. **There will be no make-up lab** – No points will be awarded for any missed lab.

Preliminary Course Schedule – Subject to Change

Start Date	Day: Lab	Assignment Due	Reading
07/13/20	Monday: Introduction to organic chemistry lab, check-in, safety, syllabus, functional groups and computational IR		*Chapter 1–3; 21*
	Tuesday: Lab 1 Distillation and GC	Pre-lab 1	*See Pre-lab*
	Wednesday: Lab 2 IR Spectroscopy	Pre-lab 2; Post-lab 1	*See Pre-lab*
07/20/20	Monday: Lab 3 Distillation - Eugenol	Pre-lab 3; Post-lab 2	*See Pre-lab*
	Tuesday: Lab 4 Grignard Reaction	Pre-lab 4; Post-lab 3	*See Pre-lab*
	Wednesday: Lab 5 Two Step Reaction	Pre-lab 5; Post-lab 4	*See Pre-lab*
07/27/20	Monday: Lab 6 Hydrogenation of Curcumin	Pre-lab-6; Post-lab 5	*See Pre-lab*
	Tuesday: Lab 7 Synthesis or Diels–Alder	Pre-lab 7; Post-lab 6	*See Pre-lab*
	Wednesday: Check-out and Lab Final	Post-lab 7	