Chemistry 3310L Course Syllabus

Instructor: Dr. Terry Fernando

Office: 0757 Gilman

Office Hours: M, W 2:15-3:15 pm or by appointment

email for Instructor terry@iastate.edu

Chem 3310 and 3310L are co-requisite courses, i.e., students in Chem 3310L are required to take Chem 3310 at the same time or to have already received credit in 3310. Co-requisite course requirements are strictly enforced: Students who do not meet the co-requisite should drop the course or add the co-requisite as soon as possible or **they will receive an F in the course.** Students who drop or audit Chem 3310 will be required to drop 3310L.

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Learning Objectives

At the end of this course, you will be able to

- Understand and follow current lawful and safe chemical handling practices (e.g., personal protective devices) and the hazards associated with the use of common organic reagents.
- Carry out and understand many common organic chemistry tasks, including percent yield calculations, thin layer chromatography, recrystallization, distillation, extractions, solvent removal, and temperature control of reactions (reflux, ice-baths, etc.).
- Carry out key organic syntheses along with purifying and characterizing obtained product.
- Understand the mechanism for each synthesis as well as underlying fundamental patterns.

Required Personal Protective Equipment (PPE)

- Safety Eyewear: UVEX — Model S040C Safety Glasses or Jones & Co. Visorgogs or Magid Glove and Safety Manufacturing "Sapphire" safety glasses. Other types of protective eyewear require approval from course instructor.
- Lab coat: A mid-thigh or longer lab coat must be purchased. These are available at the bookstore, chemstores in 1400 Gilman Hall (credit card), and various online stores such as Amazon.

Course Materials

- You will use Microsoft Word and provided Lab Report templates for your lab reports.
- All required lab readings, lab report templates and tutorials are posted on Canvas. Submission links for your lab reports are also on Canvas.

Assessments

	Points Each	Number	Total Points
Safety			
Signed Safety Contract	100	1	**100**
EHS Online Training: Lab Safety-Core Concepts.	200	1	**200**
Normal Lab Reports			
Pre-lab Questions	100		
In Lab Notes	50		
Analysis and Application Questions	100		
TA Points	100		
Total Points for Normal Labs	350	10	**3500**
Dry Lab Reports			
Lab Questions	200		
Total Points for Dry Labs	200	2	**400**
Checkout			**100**
Total Points for Course			**4300**

Grading

Grading scale for final grades: A ≥ 93%, A– ≥ 90%, B+ ≥ 87%, B ≥ 83%, B– ≥ 80%, C+ ≥ 77%, C ≥ 73%, C– ≥ 70%, D+ ≥ 67%, D ≥ 63%, and D– ≥ 60%, and F < 60%.
Grades are rounded up at the end of the semester. (e.g. 92.5% => 93%)

Important Course Policies:

- You must arrive to class on time in order to be permitted to attend the in-lab portion of class. Important aspects of the experiment are covered during the pre-lab discussion including safety. You may not submit a lab report if you do not perform the experiment and will receive a zero for the lab report. Arriving late to class is not a legitimate reason to request an online makeup. If you have extenuating circumstances which regularly prevent you from arriving to class on time, please contact the instructor before your first class.
- Late lab report submissions are generally not accepted. Rare exceptions are made for serious reasons such as technical difficulties, severe illness, family emergencies, or similar circumstances beyond your control. If such is the case, email your instructor at terry@iastate.edu by the morning after the due date or you will receive a zero on your lab report.
- Since online makeup labs are available, there are generally no dropped labs.
- You are allowed two online makeup labs for legitimate reasons such as ISU sponsored events, serious illness, and family emergencies and other similar reasons beyond your control. You must receive permission for and must do a Webex pre-lab check before submitting an online makeup lab. See instructions in FAQ on Canvas for details. If you require additional makeup labs for legitimate reasons beyond your control, contact your instructor at terry@iastate.edu before your third makeup request or as soon as humanly possible to discuss alternatives.
- You must attend your assigned section unless you receive permission for your instructor or head TA to attend another section.
- It is your responsibility to make sure that lab reports are properly submitted by the deadline. Accidentally submitting the wrong document is not a legitimate reason for a deadline extension or a regrade.
- Any complaint regarding a grade MUST be brought up within 1 week of receiving the grade to have any issue addressed. DO NOT WAIT UNTIL THE END OF THE SEMESTER.
- Presence at Lab Check-out is mandatory unless you have an excused absence. Lab Check-out must be done during the scheduled checkout time. Check-out is worth 100 points.
- Grade concerns brought up after final grades are submitted will not be considered unless there is a demonstrable error on the part of instructor or TA involved.
- Use of personal electronic devices of any type (e.g., laptops and cell phones) is strongly discouraged in the lab. If you choose to use your own personal device in the lab, you do so at your own risk since it is a lab environment.

Academic Misconduct

Academic Misconduct in any form is in violation of ISU Student Disciplinary Regulations and will not be tolerated. This includes but is not limited to: COPYING AND PASTING FROM ANYTHING WHICH YOU DID NOT AUTHOR, SUBMITTING LAB-NOTES AND/OR ANALYSIS AND APPLICATION QUESTIONS FOR EXPERIMENTS YOU DID NOT PERFORM, OR SUBMITTING WORK IDENTICAL OR NEARLY IDENTICAL TO ANOTHER STUDENT'S OR WEBSITES SUCH AS CHEGG. Depending on the act, a student will receive an F grade on all submissions associated with the experiment, could receive an F grade for the course, and could be suspended or expelled from the University. See the Conduct Code at http://www.dso.iastate.edu/ja for more details and a full explanation of the ISU Academic Misconduct policies. In any case, the student will be reported to the Dean of the Students Office.

Accessibility and Mental Health Support

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. Students requesting accommodations for a documented disability are required to work directly with staff in Student Accessibility Services (SAS) to establish eligibility and learn about related processes before accommodations will be identified. After eligibility is established, SAS staff will create and issue a Notification Letter for each course listing approved reasonable accommodations. This document will be made available to the student and instructor electronically every semester. Students and instructors are encouraged to review contents of the Notification Letters as early in the semester as possible to identify a specific, timely plan to deliver/receive the indicated accommodations. Reasonable accommodations are not retroactive in nature and are not intended to be an unfair advantage. Additional information or assistance is available online at www.sas.dso.iastate.edu..

University Required Freedom Expression Statement

Iowa State University supports and upholds the First Amendment protection of freedom of speech and the principle of academic freedom in order to foster a learning environment where open inquiry and the vigorous debate of a diversity of ideas are

encouraged. Students will not be penalized for the content or viewpoints of their speech as long as student expression in a class context is germane to the subject matter of the class and conveyed in an appropriate manner.

No employee, student, applicant, or campus visitor is compelled to disclose their pronouns. Anyone may voluntarily disclose their own pronouns.

Experiment Schedule

Week #	Week of	Experiment
1	8/26/24	Safety Contract and EHS Safety Training (online)
2	9/2/24	No labs due to holiday
3	9/9/24	Intro
4	9/16/24	Extraction
5	9/23/24	Separations (Dry Lab)
6	9/30/24	TLC, FTIR, and MP
7	10/7/24	NMR (Dry Lab)
8	10/14/24	Intro to Nucleophilic Substitution
9	10/21/24	Elimination
10	10/28/24	Alkene Addition
11	11/4/24	Multistep 1: Cyclohexanol and Acid
12	11/11/24	Multistep 2: Epoxide
13	11/18/24	Multistep 3: Ring Opening
14	11/25/24	No labs due to holiday
15	12/2/24	Bibenzyl and NBS
16	12/9/24	Check out