

CHEMISTRY 211 Honors –(Chem 211 - Section 400) Investigations in Chemistry - Isolation of Organic Molecules from Natural Sources

Instructor: Prof. John Wolfe,
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NOTE: be careful about using e-mail name autofill – if you don't use this e-mail address you are not contacting me! If you just type "John Wolfe" your e-mail will likely go to an undergraduate Engineering student.

GSIs and UIAs: Ahlam Armaly
(amarmaly)

Will Walker (wawalke)
Samantha Kelly
(kellysam) Sara Alektiar
(saraalek) Jenna
Manske (jlmansk) Ri
Harris (riahh)

Lecture: Wednesday, 1pm-2pm, room 1640
Chem.

Laboratory: Monday, 9am-12pm (2500
Chem)

Wednesday, 2pm-5pm (2411 Chem and 2500
Chem) Thursday, 11am-2pm (2411 Chem)
Friday, 11am-2pm (2411 Chem) Friday,
2pm-5pm (2500 Chem)

Office Hours: Thursdays 9:30-10:30am, room 3811
(Wolfe)

Course Description This course is a technique-based first-semester organic chemistry laboratory class that builds off of the knowledge gained concurrently in Chem 210. Students will learn laboratory techniques used in the synthesis, isolation, and purification of organic molecules, will learn how to interpret NMR and IR spectra to determine the structure and purity of organic molecules, and will be exposed to aspects of chemistry research including searching scientific literature and planning an experiment.

Required Materials 1. A laboratory notebook that includes carbon copy pages, such as the Student Lab Notebook, Publisher: Hayden-McNeil, ISBN: 9781930882461 (available from Amazon and other online vendors – the UM Barnes and Noble site has one too).

Recommended Materials 1. **The Organic Chem Lab Survival Manual: A Student's Guide to Techniques**, by James Zubrick ISBN: 9780470494370. Any edition is fine and used copies are usually available online.

2. **Chemistry 210/215 Organic Chemistry** text by Ege - any edition. Desk copies are available at the Science Learning Center.

Canvas (<https://umich.instructure.com/>) The CHEM 211H Canvas site is used by your instructor to post course-related material, including supplemental information about lab procedures, assignments, and lectures, etc. *You should check Canvas often, and you should read the e-mail messages that come from the Canvas system.*

Attendance Attendance at lab sessions is critical. Students are expected to attend the lab each day and complete all experiments. There is not a regular make up lab session scheduled. *An unexcused absence will result in a maximum score of 50% of possible points for the experiment.*

Coursework Course grades will be based on participation points, handouts, lab notebook pages, and post-lab write ups. Specific descriptions of assignments will be posted in the resources folder on Canvas. **A schedule of due dates for all assignments is posted on Canvas.** Your GSI and course instructor will make due-date reminder announcements in class/lab, however *it is your responsibility to keep track of upcoming assignments and due dates.*

1. Participation Points. Participation points will be assessed and awarded by your GSI for each lab session. The purpose of GSI-assigned participation points is to ensure that all students come to lab prepared and follow safety rules and guidelines. **All students may receive a maximum of 2 points for each lab session, but 1-2 points will be deducted for safety infractions, failure to complete the prelab assignment, or arriving late to the lab session.**

2. Worksheets. Short worksheets of experiment-related questions will be attached to the experiment description/procedure for experiments 1, 2, and 4, and will be due at the beginning of your next lab period. These should take approximately 15-30 minutes to complete and will be graded with a focus on completeness. You are encouraged to work with your group members on these, but *each group member should turn in their own worksheet that is written in their own words – do not copy your labmates work!!!* You will complete a fourth worksheet in-lab during the experiment 3 (scavenger hunt) lab period.

3. Lab Notebook. Throughout the term you will be required to maintain a detailed lab notebook in which you will document your experiments, your results, and the analysis of your results. **You are strongly encouraged to submit your notebook pages immediately after**

your lab period (everything you do in the lab you should be recorded in your notebook in real-time) **by scanning and uploading to Canvas, and the firm deadline for submission is 11pm the night of your lab period.** Specific guidelines for writing in your notebook will be provided in a handout in the resources folder on the Canvas site. *Note: some of the writing you do in your lab notebook must be completed prior to the start of each experiment. You will not be allowed to proceed with a new experiment if this portion is not complete and you will lose GSI participation points for coming to lab unprepared. The remainder of each laboratory notebook assignment can, and should be, completed in the lab.*

4. Short Post-Lab Writeups. Following experiments 3 (NMR/IR), 5, and 6 you will be required to turn in a short post-lab writeup (1-2 pages maximum). In addition, you will be required to turn in a planned procedure after the first lab session for experiment 6. With the exception of the planned procedure, which will be due 48 h after that lab session, the other writeups will be due one week from the end of the lab session in which the experiment was performed (due at the start of the following week's lab period). A description of what should be included in each writeup will be provided in the experiment description/procedure document.

6. Extra Credit for Completing Surveys. Two brief surveys will be administered to help us assess the effectiveness of this course and its impact on students. Each survey should only take a few minutes to complete. All students that complete *both* surveys will receive 4 points of extra credit, which will be added to their point total for the term. The first survey may be completed between September 11th and September 20th, and the second survey may be completed between December 4th and December 11th. You will receive an e-mail with information about how to complete the surveys near the time they become available.

Policy on Late Assignments Any assignment that is turned in late will be penalized according to the following scale:

1 minute late to end of day (12 midnight) = 10% penalty
1 day late (day following due date) = 25% penalty
2 days late = 50% penalty
3 or more days late = 100% penalty (no credit given for assignment)

Grading Policy A number of factors will be considered when determining your semester grade. Your grade will be assigned in one of two ways (whichever gives you the higher grade): (a) based on the average score in your lab section, with that score set as the A-/B+ border; OR (b) assigned based on a fixed scale where >90% = A+/A/A-; 80–89.99% = B+/B/B-; 70–79.99% = C+/C/C-; <70% = < C-. Your semester grade will be based on the point scheme below:

Assignment Type Subtotal

Participation Points GSI points 11 lab sessions @ 2 pts. each = 22 pts 22 pts

Worksheets 4 worksheets @ 30 pts. each = 120 pts. 120 pts.

Lab Notebook 5 Experiments @ 30 pts. each = 150 pts. 150 pts.

	Writeups
Short	pts. Each = 120 pts 120 pts.
Post-Lab	

Total 412 pts.

Reminder – you can earn 4 points of extra credit by completing both surveys. Survey 1 will run from 9/11 to 9/20, and survey 2 will run from 12/4 to 12/11. You may complete each survey at any time in those windows. as such, the total maximum points that could be earned are 416/412 (101%) with extra credit factored in.

Note: Departmental policy indicates that the first step in inquiring about the accuracy of a final grade should be directed to the lead instructor of the course. The initial inquiry should take place within the first fifteen University business days of the first full term following the term in which the disputed grade was issued. If, after this inquiry, the student is not satisfied with the instructor's response, the student may choose to initiate a formal grade grievance. To initiate a formal grade grievance, the student should contact the Associate Chair of Undergraduate Studies (ACUS) of the home department of the course in question before the end of the fifth week of classes in the first full term following the term in which the disputed grade was issued.

Academic Integrity Collaboration in the laboratory setting is encouraged; however, the majority of assignments and written work are to be completed individually. If an assignment is to be completed as a group effort it will be clearly stated in the assignment description. Sharing of data is ok on these assignments, **but the short-answer portions of assignments should be written in your own words, not copied from your partner(s).** Unauthorized collaboration on individual assignments will result in a zero for the assignment. *If you are unclear about whether something should be completed individually please check with your GSI or the course instructor.* Academic misconduct will result in a grade of zero on the assignment for which it takes place. Cheating on a quiz may result in failing the course. For more information please read the information at the LSA Site for Academic Integrity for examples of academic misconduct and other information.