

Department of Chemistry
CHEM 3110
Fall 2018

Dates: August 20 to November 27, 2018

Lectures: M 1:00 pm – 1:50 am, 362 PSC

Lab: M, 2:00 pm -5:50 pm., 357 PSC, Note: lab meets after the lecture

Texts

Experimental Organic Chemistry, By Wilcox and Wilcox.

GSU Chemistry 3110 Lab. Manual (included in the price of your card).

Instructor: Dr. Suazette Mooring

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Office hours: Monday 10:00 am to 12:00 pm

Course Objectives:

At the end of the course students should be able to:

- Demonstrate proper safety procedures when working in the laboratory
- Demonstrate accurate and appropriate notebook keeping practices
- Apply techniques to perform the synthesis of an organic compound
- Describe and apply methods to purify a crude organic compound
- Describe methods to characterize the identity and purity of a synthesized organic compound
- Do a literature search when conducting organic synthesis
- Demonstrate problem solving and decision making in the laboratory
- Develop independence in the laboratory
- Write a comprehensive laboratory report

Grading:

Final Exam* - 100 points

Final Report* - 100 points

Preparation, HW, Quizzes and Lab Notebook** - 100 points

Total Points: 300

Note: There will be a quiz for each of lab sessions 2 through 11

Tentative letter grade cutoffs:

A+ = > 95%

A = 90% - 94%

A- = 86% - 89%

B+ = 82% - 85%

B = 78% - 81%

B- = 74% - 77%

C+ = 70% - 73%

C = 66% - 69%

C- = 62% - 65%

D = 54% - 61%

F = < 54%

*Must be submitted to receive a passing grade

Notebooks must be picked up within **TWO weeks after final grade deadline (after which time they will be discarded)

Important Notes:

1. Department of Chemistry Statement on Student Integrity applies to this course (see statement below).
2. **Bound** lab notebook are required on the **first** day of class
3. Lab books must be recorded **i** at the time the measurements are made to be graded!
4. Attendance to **lecture** and **lab** will be recorded. Absences can result in loss of points and lower grades (Sign-in/out of lab required).
5. **Safety glasses/goggles:** These may be purchased at the GSU bookstore, the Georgia Bookstore, and most hardware stores. Students who are unable or forget to bring their glasses may buy a pair from the Lab Coordinator by filling out a breakage form in the lab. Students who obtain glasses in this manner will pay for them at the time they check-out of the lab. Safety glasses/goggles must be worn at all times. Students will not be allowed into the lab without their glasses/goggles.
6. Students must bring safety glasses/goggles and closed toe shoes on the first day as synthesis will begin immediately after check-in
7. Failure to follow safety procedures will result in expulsion from that lab session with o make-up allowed and loss of credit.
8. **No make-up Final Exam**

Chemistry Departments Student Integrity Policy:

The Department of Chemistry follows the University policy on academic honesty published in the "Faculty Affairs Handbook" and the "On Campus: The Undergraduate Co-Curricular Affairs Handbook". All tests taken must represent the student's individual, unaided effort. Any suspected offense may be referred to the Department's Chairman for appropriate action.

All tests taken must represent your individual, unaided efforts. To receive or offer information during any examination is cheating. The use of unauthorized supplementary materials during tests is also cheating. All laboratory work performed during this course must reflect your individual effort. Only original data obtained by your own laboratory experimentation are permitted to be used, except when specifically authorized by your laboratory professor. Data from supplementary sources (handbooks, reference literature, etc) must be clearly referenced (title, author, volume, page(s), etc). Falsification or

destruction of data constitutes cheating.

POLICY FOR WORKING IN THE LABORATORY:

Students in 3110 lab classes have permission to be in the laboratory other than their regularly scheduled lab period only when the lab is officially open and only to perform IR or Melting Point Determinations. No experiments are to be done outside of the scheduled lab time. Experiments that require over-night heating may be turned off, allowed to cool and then secured [work-up (lab work) will not be allowed].

Tentative Schedule[#]

Date	Tentative Pre-lab topics	Lab work	Reading Assignments pages (Please read before lecture)
August 20	Safety quiz, Course Objectives, Chalcone preparation	Check-in; begin lab: chalcone preparation	3-24
August 27	Recrystallization, purity, melting point, yield, Lit. Search; Naming chalcone	Recrystallization of chalcone	84-102 and <u>lab manual</u>
September 3 -Labor Day Holiday			
September 10	Overview of synthetic routes	Epoxide and/or dibromide preparation	
September 17	Overview continued; structure proof NMR, IR	Epoxide and/or dibromide preparation	234-253 (IR)
September 24	Structure proof continued IR, NMR	Isoxazole preparation	263-288 (NMR) Draft of Chalcone Synthesis Lab Report due for feedback
October 1	UV spectroscopy	Complete preparations and purifications or begin optional procedures	254-262
October 8	Optional procedures	Continue additional procedures	
October 22	Optional procedures continued Isoxazolene, etc.		

	Decision making		
October 29	¹³ C NMR	Continue additional preparations	263-288
November 5	¹³ C NMR continued	Final day to begin new synthesis	7-8 (lab manual)
November 12	Format of Final Report and Final Exam	Complete lab work	
Thanksgiving Break November 19 - 24			
November 26	Additional topics and lab work	Clean-up and check out	
December 3	Final Exam Final Report and Notebook due		

Deviations from this schedule and the syllabus may be required