

**Department of Chemistry**  
**CHEM 3110**  
**Intermediate Organic Chemistry Lab II**  
**Spring 2020 Minimester 1**

Dates: January 14 to February 25, 2020

Lectures: TR 8:00 am – 8:50 am, 362 PSC; Read assignments before lecture

Lab: TR, 9:00 am -12:50 pm., 357 PSC, Note: The lab meets immediately after the lecture

**Texts**

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

Optional: Experimental Organic Chemistry, By Wilcox and Wilcox.

**Instructor:** Dr. Suazette Mooring

**Office:** 519A Science Annex

**Tel:** 404-413-5527

**E-mail:** smooring@gsu.edu

**Office hours:** by appointment – **email or in-person**

**Course Outcomes:**

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 methods to purify a crude organic compound
- Describe methods to characterize the identity and purity of a synthesized organic compound
- Perform a literature search when conducting organic synthesis
- Analyze proton and carbon NMR spectra
- Effectively communicate scientific results by writing a comprehensive final report

**Grading:**

Final Exam\* - 100 points

Final Report\* - 100 points

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

Total Points: 300

**Letter Grades:**

**A+** = > 96%

**A** = 90% - 96%

**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. **A bound lab notebooks is required on the first day of class**
3. Entries in the lab notebooks must be recorded 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**

**Students who are successful in this course:**

1. Review material after and before lab so they are prepared for the upcoming experiment
2. Attend the pre-lab lecture
3. Ask questions for clarity from other student, the TAs and the instructor

### **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#**

<b>Date</b>	<b>Tentative Lecture topics</b>	<b>Lab work</b>	<b>Reading Assignments (Please read before lecture -Wilcox &amp; Wilcox)</b>
Jan 14	Safety Video, Objectives of course, Chalcone preparation	Check-in; begin lab: chalcone preparation	3-24 (read before lecture)
Jan 16	Safety Exam, Recrystallization, purity, melting point, yield, Lit. Search; Naming chalcone	Recrystallization of chalcone	84-102 and <u>lab manual</u>
Jan 21	Overview of synthetic routes	Epoxide and/or dibromide preparation	
Jan 23	Overview continued; structure proof NMR, IR	Epoxide and/or dibromide preparation	234-253 (IR)
Jan 28	Structure proof continued IR, NMR Format of Final Report 1	Isoxazole preparation	263-288 (NMR)

Jan 30	UV spectroscopy	Complete preparations and purifications or begin optional procedures	254-262 Draft of Chalcone Synthesis Lab Report due for feedback
Feb 4	Optional procedures	Continue additional procedures	
Feb 6	Optional procedures continued Isoxazolene, etc.		
Feb 11	<sup>13</sup> C NMR	Continue additional preparations	263-288
Feb 13	<sup>13</sup> C NMR continued	Final day to begin new synthesis	7-8 (lab manual)
Feb 18	Format of Final Report 2		
Feb 20	Format of Final exam	Complete lab work	
Feb 25	Final Exam Submit Final Report and Notebook		

# Deviations from this schedule and the syllabus may be required

\*There will be a quiz at least once per week.

Students with Disabilities: Students who wish to request accommodation for a disability may do so by registering with the Office of Disability Services. Students may only be accommodated upon issuance by the Office of Disability Services of a signed Accommodation Plan and are responsible for providing a copy of that plan to instructors of all classes in which an accommodation is sought.

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent for the observance of a religious holy day shall be allowed to take an exam or complete an assignment scheduled for that day within a reasonable time after the absence.

Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take time to fill out the online course evaluation.