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
Office: 519A Science Annex
Tel: 404-413-5527
E-mail: smooring@gsu.edu
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:
**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 **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 no 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

<table>
<thead>
<tr>
<th>Date</th>
<th>Tentative Pre-lab topics</th>
<th>Lab work</th>
<th>Reading Assignments pages (Please read before lecture)</th>
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</thead>
<tbody>
<tr>
<td>August 20</td>
<td>Safety quiz, Course Objectives, Chalcone preparation</td>
<td>Check-in; begin lab: chalcone preparation</td>
<td>3-24</td>
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<tr>
<td>August 27</td>
<td>Recrystallization, purity, melting point, yield, Lit. Search; Naming chalcone</td>
<td>Recrystallization of chalcone</td>
<td>84-102 and lab manual</td>
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<tr>
<td>September 3</td>
<td>Labor Day Holiday</td>
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<tr>
<td>September 10</td>
<td>Overview of synthetic routes</td>
<td>Epoxide and/or dibromide preparation</td>
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<tr>
<td>September 17</td>
<td>Overview continued; structure proof NMR, IR</td>
<td>Epoxide and/or dibromide preparation</td>
<td>234-253 (IR)</td>
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<tr>
<td>September 24</td>
<td>Structure proof continued IR, NMR</td>
<td>Isoxazole preparation</td>
<td>263-288 (NMR) Draft of Chalcone Synthesis Lab Report due for feedback</td>
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<tr>
<td>October 1</td>
<td>UV spectroscopy</td>
<td>Complete preparations and purifications or begin optional procedures</td>
<td>254-262</td>
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<tr>
<td>October 8</td>
<td>Optional procedures</td>
<td>Continue additional procedures</td>
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<tr>
<td>October 22</td>
<td>Optional procedures continued Isoxazolene, etc.</td>
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<tr>
<td>Date</td>
<td>Activity</td>
<td>Notes</td>
<td>Page</td>
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<tr>
<td>October 29</td>
<td>13C NMR</td>
<td>Continue additional preparations</td>
<td>263-288</td>
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<tr>
<td>November 5</td>
<td>13C NMR continued</td>
<td>Final day to begin new synthesis</td>
<td>7-8 (lab manual)</td>
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<td>November 12</td>
<td>Format of Final Report and Final Exam</td>
<td>Complete lab work</td>
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<td><strong>Thanksgiving Break November 19 - 24</strong></td>
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<tr>
<td>November 26</td>
<td>Additional topics and lab work</td>
<td>Clean-up and check out</td>
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<tr>
<td>December 3</td>
<td>Final Exam</td>
<td>Final Report and Notebook due</td>
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# Deviations from this schedule and the syllabus may be required