Office Hours: Scheduled office hours will be determined during the 2nd week of classes to accommodate individuals or small groups and will be posted on CANVAS. If the scheduled times are not convenient, e-mail me with times that you are free so that we can set up an appointment. Open Door Policy: If the door is open, come on in!

Course meetings: Wednesdays, 2:45 – 6:35 p.m., at the USFSM Teaching Labs at Mote Marine.

Course Description: Lab 2 cr., Prereq: CHM 2200 or CHM 2210.
Laboratory portion of Organic Chemistry I. Introduction to organic laboratory principles and techniques. Emphasis in the laboratory portion is placed upon illustrating the physical properties involved with chemical reactivity and the isolation and characterization of organic compounds.

Student Learning Outcomes Applying the concepts learned from the lecture component of this course the student, by the end of the laboratory component, will be able to…
- Apply the IUPAC rules of nomenclature to determine names and/or structures for molecules
- Observe the effects of molecular structure on reactivity.
- Relate the role of acidity and basicity of organic compounds in mechanisms.
- Correlate the effects of electronic, steric, and orbital interactions to the behavior and properties of molecules.
- Perform stereochemical and conformational analyses of organic compounds and predict the effects of these properties on reactivity and reaction outcomes.
- Write reactions that show the preparation of molecules containing the functional groups: alkanes, alkenes, alkyenes, alcohols and alkyl halides.
- Understand chemical reactivity through thermodynamic and kinetic evaluation.
- Mechanistically illustrate substitution, elimination, addition, radical, and cyclization reactions.

By the end of this laboratory course, the student will have the ability to…
- Plan and carryout reactions utilizing the appropriate laboratory glassware and supplies.
- Safely work in a laboratory environment through awareness of the potential hazards.
- Utilize separation techniques to isolate and purify compounds.
- Interpret spectral data (GC, MS, IR, NMR) to characterize organic compounds.
- Maintain a detailed laboratory notebook and communicate their laboratory investigation through meaningful laboratory reports.

Additionally, students will be able to demonstrate…
- Problem solving skills in laboratory experiments
- Laboratory safety skills during collaborative laboratory experiments.
- Effective oral and written communication skills as evidenced through peer instruction, group meetings and laboratory reporting.
- Teamwork and interpersonal skills as displayed in laboratory experiments.
- Ethical responsibility and an awareness of the role of chemistry in contemporary societal and global issues.
- Collaboration with lab members to design and develop a method to communicate chemical concepts using various types of current technology methods.
**Course Text/Materials:** Required for successful completion of this course:
- Bound laboratory notebook (Stitched notebook style)
- Basic scientific calculator

**Canvas Use:** The class syllabus is posted in Canvas, an online course management system. In this class Canvas will be used as a repository for documents and powerpoint slides pertinent to the course. Information on how to use Canvas is available at: [http://usfsm.edu/e-learning-services/student-resources/](http://usfsm.edu/e-learning-services/student-resources/)

**Evaluation:** The course grade will be based upon a series of lab assignments, laboratory methods, laboratory reports and a lab final. Grades will be based upon the following point system:

- **Lab Assignments**: 200 pts
- **Laboratory Methods**: 100 pts
- **Laboratory Reports**: 800 pts
- **Laboratory Final**: 200 pts

Total: 1300 pts

Final letter grades for the course will be based upon the percentage of possible points earned as follows:  
- **A+** = 97-100%;  
- **A** = 93-96%;  
- **A-** = 90-92%;  
- **B+** = 87-89%;  
- **B** = 83-86%;  
- **B-** = 80-83%;  
- **C+** = 77-79%;  
- **C** = 73-76%;  
- **C-** = 70-72%;  
- **D+** = 67-69%;  
- **D** = 63-66%;  
- **D-** = 60-62%;  
- **F** = 59% or below.

**Assignments:** Laboratory assignments will be given for certain concept or skill building labs. They are to be completed individually although students are encouraged to collaborate on their understanding of the concept or skill.

**Laboratory Methods:** Throughout the laboratory sessions you will be observed on how you follow proper laboratory procedures in setting up and performing the labs in an efficient and safe manner. Collaboration is an integral part of the laboratory experience and will be developed throughout the semester.

**Laboratory Reports:** For specified labs a lab report will be prepared individually based upon your experimental record - your laboratory notebook. Various styles of reporting scientific findings will be utilized that include journal style written reports, video reports, powerpoint presentations and poster presentations.

**Laboratory Final:** At the last lab meeting a laboratory final examination (a.k.a. *Celebration of Your Knowledge*) will be given that covers the concepts and techniques learned throughout the laboratory course.

**Attendance:** Attendance is expected for all scheduled laboratory sessions. Due to logistical and safety concerns labs cannot be made up. When absences are unavoidable the student will consult with the instructor about an alternative assignment and will be responsible for all material covered in the missed lab.
Academic Dishonesty
The University considers any form of plagiarism or cheating on exams, projects, or papers to be unacceptable behavior. Please be sure to review the university's policy in the USFSM Catalog and the USF Student Code of Conduct. Current and archived catalogs may be found at: http://usfsm.edu/academics/ and the USF Student Code of Conduct can be found at http://www.sa.usf.edu/srr/page.asp?id=88

Academic Disruption
The University does not tolerate behavior that disrupts the learning process. The policy for addressing academic disruption is included with Academic Dishonesty in the USFSM Catalog and the USF Student Code of Conduct. Current and archived catalogs may be found at: http://usfsm.edu/academics/ and the USF Student Code of Conduct can be found at http://www.sa.usf.edu/srr/page.asp?id=88

Contingency Plans
In the event of an emergency, it may be necessary for USFSM to suspend normal operations. During this time, USFSM may opt to continue delivery of instruction through methods that include but are not limited to: Canvas, Elluminate, Skype, and email messaging and/or an alternate schedule. It’s the responsibility of the student to monitor Canvas site for each class for course specific communication, and the main USFSM and College websites, emails, and MoBull messages for important general information. The USF hotline at 1 (800) 992-4231 is updated with pre-recorded information during an emergency. See the Campus Police Website for further information. The USF hotline at 1 (800) 992-4231 is updated with pre-recorded information during an emergency.

Disabilities Accommodation
Students are responsible for registering with the Office of Students with Disabilities Services (SDS) in order to receive academic accommodations. Reasonable notice must be given to the SDS office (typically 5 working days) for accommodations to be arranged. It is the responsibility of the student to provide each instructor with a copy of the official Memo of Accommodation. Contact Information: Disability Coordinator: 359-4714; email: disabilityservices@sar.usf.edu and website: http://usfsm.edu/disability-services/

Fire Alarm Instructions
At the beginning of each semester please note the emergency exit maps posted in each classroom. These signs are marked with the primary evacuation route (red) and secondary evacuation route (orange) in case the building needs to be evacuated. See information available on the USFSM student and faculty webpages at www.usfsm.edu

Religious Observances
The University recognizes the right of students and faculty to observe major religious holidays. Students who anticipate the necessity of being absent from class for a major religious observance must provide notice of the date(s) to the instructor, in writing, by the second week of classes. http://generalcounsel.usf.edu/policies-and-procedures/pdfs/policy-10-045.pdf

Emergency Preparedness
It is strongly recommended that you become familiar with the USF Sarasota-Manatee Emergency Action Plan on the Safety Preparedness. See information available on the USFSM student and faculty webpages at www.usfsm.edu

Web Portal Information
Every newly enrolled USF student receives an official USF e-mail account. Students receive official USF correspondence and Canvas course information via that address. Therefore it is the student’s responsibility to check their USF email regularly.

Instructor Copyright
Students may not sell notes or other course materials.
Laboratory Content: Laboratory experiences will be conducted utilizing a research style format with pre-lab group meetings to be held at the beginning of the lab period to discuss the topic/technique to be explored and results from the previous lab. You will gain hands on experience in techniques and reactions encountered in organic chemistry research that will provide an understanding of the underlying concepts and principles of organic chemistry.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Aug. 27</td>
<td>Lab 0: Intro, Lab Safety, Lab Methods</td>
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<tr>
<td>Sept. 3</td>
<td>Lab 1: Green Chemistry Introduction, Biosynthesis</td>
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<td>Sept. 10</td>
<td>Lab 2: A Melting Point Study via a Solvent-less Aldol Reaction</td>
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<td>Sept. 17</td>
<td>Lab 3: Analysis of Analgesics and Synthesis of Aspirin</td>
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<td>Sept. 24</td>
<td>Lab 4: Biosynthesis of Ethanol from Molasses</td>
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<td>Oct. 1</td>
<td>Lab 5: Acid-Base Reactions and Extractions</td>
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<td>Oct. 8</td>
<td>Lab 6: Stereochemistry of Organic Compounds (Re: Ch. 5 in Text)</td>
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<td>Oct. 15</td>
<td>Lab 7: Isolation of Natural Products (Caffeine and Limonene)</td>
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<td>Molecular Characterization: Infrared Spectroscopy (Re: Ch. 15 in text)</td>
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<td>Oct. 22</td>
<td>Lab 8: Preparation of Cyclohexene and Electrophilic Addition of Bromine</td>
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<td>Molecular Characterization: Mass Spectroscopy (Re: Ch. 15 in text)</td>
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<tr>
<td>Oct. 29</td>
<td>Lab 9: Substitution Reactions with Alkyl Halides</td>
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<td>November 1, 2014 Last day to drop with a “W”</td>
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<td>Nov. 5</td>
<td>Lab 10: Relative Rates of Radical Reactions (Re: Ch. 11 in Text)</td>
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<td>Nov. 12</td>
<td>Lab 11: Diels Alder Reaction in Water</td>
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<td>Nov. 19</td>
<td>Lab 12: Molecular Characterization: Nuclear Magnetic Resonance (NMR)</td>
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<td>(Re: Ch. 16 in text)</td>
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<td>Nov. 26</td>
<td>Review Week: NMR skills</td>
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<td>Thanksgiving Holidays 27-28</td>
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<td>Dec. 3</td>
<td>Lab 13: Lab “Celebration of Knowledge” and Check Out</td>
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