

## CHM 2200L – Organic Chemistry Laboratory (1 credit)

Spring 2021

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<b>Websites</b>	Please see Canvas site ( <a href="http://lss.at.ufl.edu">http://lss.at.ufl.edu</a> ) for links to Zoom sessions
<b>Co-/Pre-Requisites</b>	CHM 2200 lecture is a co- or pre-requisite for CHM 2200L. In order to be enrolled in CHM 2200L, you must have already completed and passed CHM 2200 (or CHM2210 in some cases), or you must be currently registered for CHM 2200.
<b>Textbook</b>	This course will be participating in the UF All Access program. Login at the following website and Opt-In to gain access to your UF All Access course materials - <a href="https://www.bsd.ufl.edu/AllAccess">https://www.bsd.ufl.edu/AllAccess</a> – UF All Access will provide you with your required materials digitally at a reduced price, and the charge will be posted to your student account. This option will be available starting one week prior to the start of the semester and ends three weeks after the first day of class.
<b>Course Delivery</b>	This course will be delivered online/synchronously. Course content will be delivered through the Canvas course shell and required lab meetings will occur via the Zoom platform during your scheduled lab period.
<b>Meeting Times</b>	CHM2200L meets synchronously online via Zoom twice per week during your scheduled lab period (Tuesdays and Thursdays from 2-4:45pm). Students will be assigned to groups for Zoom meetings. The Zoom link will be provided on Canvas.
<b>Description/Goals</b>	The general objectives of this course are to introduce you to some common laboratory techniques and equipment used in an organic chemistry laboratory, to help you gain understanding and proficiency in their use, to help you explore the process of doing organic chemistry, and to illustrate some representative examples of the useful and important reactions you are learning in CHM 2200 lecture.
<b>Required Materials</b>	You will require a computer with an internet connection, a functional webcam and microphone, and a notebook to use to record your activities. You will also need to perform various at-home activities using common household/kitchen items such as glass jars, sugar, salt, vegetable oil, rubbing alcohol or ethanol, and paper coffee filters. More details will be given with each experiment.

Lab will start meeting synchronously online via Zoom on January 25. The first deadline for online assignments for all students is January 22 at 5:00pm – check Canvas for details. During your first Zoom lab meeting, you will meet your TA and fellow classmates, and discuss the first lab activity. Prior to attending each lab period, you must familiarize yourself with the lab background and procedure, and complete the pre-lab assignment online. These will be due at 1:00pm on your scheduled lab day. During the lab meeting, you will be assigned to work in groups to discuss procedures, answer questions and perform the calculations to finish the lab. You will be graded on attendance and participation during each lab period. In addition to the

lab zoom discussion, you will complete an at-home activity related to the material discussed during the lab, and you will complete a brief post-lab quiz. Deadlines for each of these activities are listed in the schedule at the end of this syllabus and are posted on the Canvas site.

## GRADING

Each laboratory activity consists of a pre-lab assignment, an at-home activity, a post-lab quiz, and an attendance/participation score. You will also be asked to design and report on an independent project. Although it is natural to worry about grades, please don't let it become an obsession that ruins your experience in the course. The average grade for this course is a B+, and any student who completes all of the assignments and shows a good attitude in the class will earn at least a C.

Grades will be determined using the weighting below:

Safety Quiz/Contract	5%
Pre-Lab Assignments	20%
At Home Activities	20%
Post-Lab Quizzes	20%
Attendance/Participation	10%
Independent Project	25%

The grading scale will be firmly set as follows: A  $\geq$  89.5%, A- = 86.5-89.4%, B+ = 83.5-86.4%, B = 76.5-83.4%, B- = 72.5-76.4%, C+ = 69.5-72.4%, C = 61.5-69.4%, C- = 58.5-61.4%, D+ = 54.5-58.4%, D = 50-55.4%, E < 50.0%. There will not be a curve beyond that already included in the scale above, and there is no rounding to scores in Canvas. UF grading policies are at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

### Explanation of Grade Breakdown:

The **Safety Quiz/Contract** must be completed on Canvas in order to unlock the rest of the course material. You are responsible for reviewing the safety information provided in the lab manual and on the Canvas site. Additionally, you should wear appropriate clothing and safety glasses while performing any at-home experiments.

The **Pre-Lab (PL)** grade consists of your Pre-Lab Assignments, which are found in Modules section on Canvas. See the schedule for specific dates. The pre-lab assignments will be graded on a 5 point scale, and should be completed at least 30 minutes prior to your lab meeting.

The **At-Home Activities (AHA)** are to be uploaded as a PDF to Canvas, and will consist of the notes you take while you perform the activity and your answers to the post-lab questions. See the schedule for specific dates. Each At-Home Activity (AHA) will be graded on a 10 point scale.

**Post-Lab Quizzes** will be given after completion of each lab activity. See schedule for specific dates.

The **Attendance/Participation** portion of your grade will be determined based on your attendance at the Zoom meetings and your contributions towards the discussion aspects of the lab. Each session will be graded on a 5 point scale.

The **Independent Project** is an opportunity for you to explore an interesting concept of organic chemistry in a way that you will design. More details, ideas, and target deadlines will be provided on the Canvas site.

## GRADING DISPUTES AND REQUESTS FOR REGRADES

All lab assignments are graded by your TA, so you should address any grading disputes directly to your TA no later than three days after your TA returns your graded items. **Requests for re-grades will not be accepted after the deadline has passed**. Please note that the purpose of regrading is to make sure all papers were graded according to the same standard – it is not a means to negotiate for more points. To insure fairness, the entire assignment will be regraded based on the grading key, and grades may go up or down with the regrade. **All re-grade decisions are final.**

## ATTENDANCE

Regular attendance is critical to your understanding and overall success in organic chemistry. You are required to attend lab discussions online via Zoom during your scheduled meeting time. It is essential that you are on time and prepared for the activity each time that we meet. Your TA will be taking attendance during each lab meeting. If you are more than five minutes late, you will forfeit your attendance and participation points for the day. You are still responsible for completing the lab activities and turning in assignments even if you are absent from the Zoom discussion. To account for technical issues, one day of attendance/participation points will be dropped for all students. Any further absences will be marked as zero.

Students who must miss lab due to **extreme circumstances beyond their control** may submit a request for a deadline extension within 3 days of the missed deadline. Please understand that personal issues with scheduling conflicts, such as volunteering, work, non-emergency dentist or doctor appointments, extracurricular activities, personal travel, etc., do not justify an excused absence. To have a request considered for approval, you must provide verifiable documentation (a doctor's note, screenshot of Return to Campus status, University excuse, funeral program, etc.) along with a completed request form (available on the Canvas site), and upload these to Canvas as a PDF through the Weekly modules section.

Requirements for class attendance and make-up quizzes, assignments, and other work in this course are consistent with university policies that can be found in the Undergraduate Catalog at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

## A NOTE ON TEAMWORK AND PARTICIPATION

Teamwork is an integral component of doing science. In today's world, researchers depend on collaboration with their colleagues to share ideas, spark creativity, maximize strengths, troubleshoot problems, and share limited resources. The days of lone scientists toiling away in lab by themselves are over. Teaching labs are no exception. The organic lab is an ideal place to exemplify the benefits of working together towards a common goal. Teamwork allows us to explore more sophisticated chemistry and develop a deeper understanding of what is happening in our experiments through active discussion.

You will see that our Zoom discussions will involve activities done in small teams. The goal of this approach is that everyone participates in the process, and that can only happen if you are prepared when you come to the discussion. Members of the team are expected to contribute equally, and your TA will be evaluating your participation and that of your teammates throughout the course. Since the pedagogical approach of this course depends heavily on student engagement and interaction, you are required, at a minimum, to participate in class activities through the audio function of Zoom. Your video presence is invited as well.

## **PRE-ZOOM PREP AND AT-HOME ACTIVITIES**

Before you come to your Zoom session, carefully read through the scheduled experiment in the lab manual, view the experimental information presented on Canvas, and complete the Pre-Lab Assignment. These Pre-Lab Assignments are designed to ask you to think about the lab procedure, understand how it relates to other aspects of chemistry, and guide you in your preparation for discussing the experiment. You may need to refer to your lecture text or the internet to help you answer some of the questions.

You will use a notebook to record your at-home activities throughout this course. Your laboratory notebook is meant to be an accurate, legible, permanent record of everything that you do during an experiment. Start each new experiment on a fresh page, and be sure to include the title of the experiment, the chemical reaction that is being performed (if applicable), any physical data that is needed in the experiment (such as molar masses, melting points, boiling points, and densities), and any important safety alerts. While you are conducting an experiment, write everything in your notebook. Record your activities (a brief procedure written as you go) and all data (amounts, reaction times, melting or boiling points, calculations, etc.) and observations (colors, textures, odors, visual indications of reaction, etc.) directly into your notebook as you do your experiment. When you have finished the experiment, you should include a brief summary of your results and make any conclusions that can be drawn from your data. You will upload a PDF scan of your notebook to Canvas following completion of the at-home portion of the experiment.

Be sure to consider the following items when preparing your notebook:

- The notebook must be kept in non-erasable, waterproof ink (preferably ballpoint)
- All errors must be crossed out with a single line – no scribbles or white-out!
- Do not skip or tear out pages – cross out with an X if the entire page is incorrect
- Experiments must have titles and include the dates that they are performed
- There should be enough detail so that someone with a reasonable understanding of organic chemistry (like your TA) could repeat your work using only your notebook
- Accuracy and truth are more important than a “pristine” entry
- All entries must be made while the experiment is conducted and a PDF scan of your results must be uploaded to Canvas for grading after completion of the experiment – see the schedule for due dates

## **ACADEMIC HONESTY GUIDELINES**

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida. The following pledge is either required or implied: “On my honor, I

have neither given nor received unauthorized aid in doing this assignment.” It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>. If you have any questions or concerns, please consult with the instructor or TAs in this class.

## **INFORMATION FOR STUDENTS WITH DISABILITIES**

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <http://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester. Note that DRC accommodations cannot be applied retroactively.

## **EVALUATIONS**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## **UF RESOURCES AND LINKS**

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit <https://umatter.ufl.edu/> to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* Visit <https://counseling.ufl.edu/> or call 352-392-1575 for information on crisis services as well as non-crisis services.

*E-learning technical support:* Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

**SCHEDULE OF EXPERIMENTS – CHM2200L – SPRING 2021<sup>†</sup>**

<b>Week</b>	<b>Date</b>	<b>Activity</b>	<b>Quizzes/Items Due/Notes</b>
1	January 11-15	<i>Drop/Add week – no activities scheduled</i>	
2	January 18-22	<i>Safety Review (on own in Canvas)</i>	<ul style="list-style-type: none"> <li>• Safety Quiz/Contract due on January 22 at 5:00pm</li> </ul>
3	January 25-29	TA/Student Introductions <i>Chapter 2: Introduction to Melting Point</i>	<ul style="list-style-type: none"> <li>• Melting Point Pre-Lab (PL) due</li> <li>• Post-Lab Quiz – due on January 27 by 5pm</li> </ul>
4	February 1-5	Synthesis and Purification <i>Chapter 4: Synthesis of Acetophenetidin, part 1</i> Discussion of Independent Project ideas	<ul style="list-style-type: none"> <li>• Acetophenetidin PL due</li> <li>• Post-Lab Quiz – due February 3 by 5pm</li> </ul>
5	February 8-12	Recrystallization <i>Chapter 4: Synthesis of Acetophenetidin, parts 3 and 4</i>	<ul style="list-style-type: none"> <li>• Recrystallization PL due</li> <li>• Post-Lab Quiz – due February 10 by 5pm</li> </ul>
6	February 15-19	Lady Tasting Coffee: A Case Study in Experimental Design	
7	February 22-26	Independent Project: Topic and Initial Experimental Design Discussion	<ul style="list-style-type: none"> <li>• Recrystallization AHA due February 26</li> </ul>
8	March 1-5	Extraction <i>Chapter 5: Extraction, parts 1, 2, and 3</i>	<ul style="list-style-type: none"> <li>• Extraction PL due</li> <li>• Post-Lab Quiz – due March 3 by 5pm</li> </ul>
9	March 8-12	Chromatography <i>Chapter 9: Extraction and TLC of Pigments in Spinach</i>	<ul style="list-style-type: none"> <li>• Chromatography PL due</li> <li>• Post-Lab Quiz – due March 19 by 5pm</li> </ul>
10	March 15-19	Case Study: Cancer Cure or Conservation: A Question of Health for Humans and the Ecosystem	<ul style="list-style-type: none"> <li>• Independent Project: Status Update – due March 17 by 5pm</li> <li>• Extraction AHA due March 19</li> </ul>
11	March 22-26	Exploring Polymers <i>Chapter 12: Making Polymers</i>	<ul style="list-style-type: none"> <li>• Polymers PL due</li> <li>• Post-Lab Quiz – due March 25 by 5pm</li> </ul>
12	March 29-April 2	Independent Project: Discussions	<ul style="list-style-type: none"> <li>• Chromatography AHA due March 29</li> </ul>
13	April 5-9	No meetings scheduled.	<ul style="list-style-type: none"> <li>• Polymers AHA due April 6</li> <li>• Independent Project: Final Report – due in Canvas by 5pm on Friday, April 9</li> </ul>
14	April 12-16	No meetings scheduled.	
15	April 19-21	No meetings scheduled.	

<sup>†</sup>Schedule may change due to unforeseen events – see course Canvas site for any updates.