

CHEM 2200L – Organic Chemistry Laboratory (1 credit)

Joseph Hernandez Hall, Room 210

Spring 2020

Teaching Assistant	to be assigned during first laboratory meeting
Faculty Coordinator	Dr. Tammy A. Davidson, Sisler 429B (352) 392-9134, davidson@chem.ufl.edu Please use email if you need to arrange an appointment
Websites	Please see Canvas site (http://lss.at.ufl.edu)
Co-/Pre-Requisites	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.

CHM 2200L meets once a week in Joseph Hernandez Hall, room 210. 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.

LABS BEGIN ON MONDAY, JANUARY 13 (ATTEND YOUR SCHEDULED SESSION)

On the first day of lab, you must have the following items with you in order to check in:

- Lab Manual, 2019-2020 edition (Hayden-McNeil, available at UF bookstores)
- Approved Safety Glasses/Goggles
- Proper Attire

You must be wearing department approved safety glasses or goggles and be properly attired to be admitted to the laboratory at all times, even on the first day of lab. Students should wear loose fitting pants and a shirt (with sleeves) that covers the entire torso. There can be no exposed skin at the waist or ankle area. Please refer to the lab manual and the links on the Canvas site for more information on attire and the types of eye protection approved for use in this lab. Anyone without the necessary materials (listed above), the proper safety glasses, or who is inappropriately attired will not be allowed in the lab.

FIRST DAY OF LAB – CHECKING IN

On the first day of lab, you will be assigned to a lab bay, meet your TA, and be assigned to your laboratory workstation. You will need to choose a PIN for the lock on your personal workstation drawer. Be careful and deliberate when entering the code to lock your drawer – you will need to use the same PIN to unlock your drawer, so be careful to enter the code correctly when you lock the drawer.

The Materials and Supplies fee that you pay for this course (\$45.50) covers all reagents/supplies and reasonable breakage/loss of glassware. You are responsible for maintaining all of the glassware and equipment in your personal workstation drawer for the entire semester. Check everything carefully during

check-in to make sure all of your equipment is in good working order. Look for star and hairline cracks in your glassware, and check your separatory funnel carefully to make sure there are no leaks. Complete and sign the Safety Form and workstation equipment sheet (found in the "Forms" section of the Lab Manual), and turn them in at the stockroom window to complete the check-in process.

******NOTE: No students will be permitted to check into the lab after January 27******

GRADING

Your grade will be determined primarily from two sources in this course. The first area is preparation/experimental work done in the laboratory – completion of your pre-lab assignments, your participation in lab discussions, the data and observations that you record in your notebook during lab, the notebook summaries you submit to your TA on completion of the experiment, and your TA's evaluation of your general work habits and attitude. This experimental portion of your grade will be combined with assessment of your understanding of the experiments as evaluated on quizzes. Although it is natural to worry about grades, please don't let it become an obsession that ruins your experience in the lab. 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:

Lab Notebook/Summaries	45%
Quizzes	40%
Pre-Labs	10%
Participation/TA evaluation	3%
Checkout Day	2%

The grading scale will be firmly set as follows: A ≥ 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 **Pre-Lab (PL)** grade consists of your Pre-Lab Assignments, which are found in the lab manual for each experiment. Turn in the pre-lab to your TA at the beginning of the lab session. Anyone who has not completed a pre-lab may not do the lab that day. The pre-lab (PL) grade from each experiment will be graded on a 5 point scale.

Lab Notebook/Summaries (NB) are to be submitted to your TA for each experiment done during the semester, and will consist of the notes you take during lab and your answers to the post-lab questions from the lab manual. The duplicate pages from your notebook are due to your TA at the beginning of the lab period that immediately follows completion of the experiment. See the schedule for specific dates. Each NB will be graded on a 10 point scale.

Quizzes will be given periodically during evening assembly exam slots (8:20pm) and will cover material both from the current and any previous experiments/activities. Your score on the

two quizzes (at 25 points each) will be added to your score on the online safety quiz (worth 10 points) to calculate your overall quiz grade. See schedule for specific dates. **Note: The online safety quiz must be completed on the Canvas site by 11:00pm on January 30th. No extensions.**

The Organic Teaching Laboratory is a hands-on learning environment. The **Participation/TA evaluation** portion of your grade will be determined based on your overall engagement in the laboratory and your contributions towards the discussion aspects of the lab.

The **Checkout Day** is an official class meeting, and we need everyone to be in attendance. We will hold 2% of your grade until you have completed the checkout process. Anyone who misses checkout for an unexcused absence or has not made prior arrangements with the stockroom will forfeit these points.

GRADING DISPUTES AND REQUESTS FOR REGRADES

Any grading disputes or requests for re-grades of quizzes must be submitted in writing directly to your TA no later than one week after your TA returns your graded items. No requests for re-grades will be honored after the deadline has passed. **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.**

LAB CLEANLINESS AND LATE PENALTIES

You are expected to attend your scheduled lab session, complete the scheduled activity, clean up your work area, and leave the lab when your lab period ends. Everyone in this course is given the same amount of time to complete the experiments. If you are well prepared, you should have no problem finishing the experiments within the allotted time. **You may not stay late or come in during another lab section to do your experiments.**

You will find a schedule at the end of this syllabus that shows this semester's experiments, along with the dates of quizzes and due dates for assignments. The following late penalties will be assessed as needed:

Late leaving the lab or messy workstation.....0.5 point deduction from Participation grade per occurrence
Any assignment turned in late.....10% deduction on item for each day late

ATTENDANCE, MISSING LAB, AND DROPPING THE COURSE

Requirements for class attendance and make-up exams, 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>.

This is a hands-on course, and regular attendance in the organic lab is critical to your understanding and overall success. Each laboratory period, you will learn techniques and concepts that will continue to be

important throughout the semester. It is essential that you arrive at the lab on time and prepared for the activity each time that lab meets. Due to space and time constraints, **there are no makeup labs in this course.** **You may not come in during a different lab period to do any experiments.** Therefore, it is important for you to attend your regularly scheduled lab session. Your TA will be taking attendance during each lab period.

Students who must miss lab due to **extreme circumstances beyond their control** may submit a Request for Excused Absence. In general, acceptable reasons for absence from class include illness, serious family emergencies, court-imposed legal obligations (e.g., jury duty or subpoena), special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays, and participation in official university activities such as music performances, athletic competition or debate. Please understand that personal issues with scheduling conflicts, such as work, non-emergency dentist or doctor appointments, extracurricular activities, family vacations, etc., do not justify an excused absence. To have a request considered for approval, you must provide written, verifiable documentation (a doctor's note, University excuse, funeral program, etc.) along with a completed request form (available on the Canvas site) to the stockroom window. The stockroom will forward your request on to Dr. Davidson for review. Please do not email Dr. Davidson to "preview" if your absence will be approved or not. All requests for excused absences must be made no later than 1 week after the absence – after one week, the absence will be considered unexcused. Unexcused absences from lab will result in a grade of zero for the work missed. You are responsible for any information presented in the lab even if you are absent. If you know in advance that you will have to miss a lab session, for instance due to a UF-sponsored activity or observation of a religious holiday, please submit your paperwork as soon as possible.

Please note: If you miss a quiz for an excused absence, you should contact your TA as soon as possible about scheduling a makeup quiz.

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 pre-lab discussions will be done in small teams, and many of our experiments are conducted while working with a partner. 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 lab. 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.

PRE-LAB ASSIGNMENTS AND LABORATORY NOTEBOOK/SUMMARIES

Before you come to lab, carefully read through the scheduled experiment and complete your Pre-Lab Assignment (the colored sheet found after each experiment in the lab manual). These Pre-Lab Assignments are designed to ask you to think about the lab procedure to be performed, understand how it relates to other aspects of chemistry, and guide you in your preparation for the experiment. You may need to refer to your

lecture text to help you answer some of the questions. Don't wait until just before lab to get prepared – instead, work on your Pre-Lab ahead of time so you can ask your TA for help if you are confused about anything. Turn your pre-lab assignment in to your TA at the beginning of the lab period. No one will be permitted to do the lab without a completed Pre-Lab assignment – your TA will ask you to leave the lab. Additionally, you will find that the labs will go much smoother if you have read through everything ahead of time, so be sure to do a good job in getting organized. (Please don't sit in the hallway outside the lab and copy the pre-lab from your classmates. It just makes you look extremely unprepared and not very serious about your coursework.)

Your laboratory notebook is meant to be an accurate, legible, permanent record of everything that you do in the laboratory. Use the carbonless duplicate sets at the back of your manual, and start each new experiment on a fresh page. 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 – does not need to be complete sentences) and all data (weights, volumes, 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. Also, be sure to answer the post-lab questions in your notebook. You will turn in the duplicate pages from your notebook to your TA at the beginning of the lab period immediately following completion 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
- Include the names of your teammates (if applicable)
- 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 the duplicate pages must be turned in to the TA for grading after completion of the experiment – see the schedule for due dates

CELL PHONES, CALCULATORS, AND OTHER ELECTRONIC DEVICES

Cell phones and other personal electronic devices are not permitted for use in the laboratory at any time. All cell phones and other devices must be silenced and stored in your storage locker in your bay. If you must make an emergency call during the lab period, please take your phone into the hallway outside of the lab. When you finish, please return your phone to your locker. **NOTE:** You will need to use a calculator many times during this course. You should bring a calculator with you to class – we will not let you use the calculator on your cell phone.

ASSEMBLY EXAM CONFLICTS

Some students enrolled in evening laboratory sections may experience conflicts with their scheduled laboratory session and assembly exams in other courses. The official timeslot for assembly exams during the fall/spring term is for periods E2-E3 (8:20-10:10 pm)**. You are expected to attend your organic lab until 8:00 pm on the evening of an assembly exam. (Many times, you may be able to finish what you need to do that day without any trouble.) Please let your TA know if you have an assembly exam coming up so he or she can assist you with planning your activities in the lab. The lab instructors for the evening sessions will discuss this further with you during check-in day. Please do not complete a request for approved absence form for an assembly exam given periods E2-E3.

**Any other exams that are scheduled for outside of their normal class time, but not in an official assembly exam block, are not considered to be assembly exams by the university. We are not required to accommodate test conflicts if they are not official assembly exams as scheduled through the registrar's office. Please discuss makeup exam options with your instructor in the other course before requesting accommodations for this lab.

ACADEMIC HONESTY GUIDELINES

The University of Florida holds its students to the highest standards, and we encourage students to read the University of Florida Student Honor Code and Student Conduct Code (Regulation 4.040), so they are aware of our standards. Any violation of the Student Honor Code will result in a referral the Student Conduct and Conflict Resolution and may result in academic sanctions and further student conduct action. The two greatest threats to the academic integrity of the University of Florida are cheating and plagiarism. Students should be aware of their faculty's policy on collaboration, should understand how to properly cite sources, and should not give nor receive an improper academic advantage in any manner through any medium. You can find more information about UF's Academic Honesty Policy from the Dean of Students Office website at <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>.

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/>.

SCHEDULE OF EXPERIMENTS – CHM2200L – SPRING 2020[†]

Date	Activity	Quizzes/Items Due/Notes
January 13, 14, 16	Check-in, First Day Activities (read pgs. v-xv and Chapter 1 in manual and watch Lock Operations videos in Modules area on Canvas before coming to lab) <i>Chapter 2: Introduction to Melting Point – view video in “Modules” tab before lab</i>	
January 20	<i>Martin Luther King, Jr. Day Holiday – no labs</i>	
January 21, 23, 27	<i>Chapter 4: Synthesis of Acetophenetidin, Part 1 (omit part 2)</i> <i>**No students will be permitted to check in after this session**</i>	Acetophenetidin Pre-Lab (PL) due **Watch Glassware Cleaning and Support Rod/Clamps videos in Module area on Canvas**
January 27	†Online Safety Quiz Due at 11:00 pm	
January 28, 30, February 3	Acetophenetidin, cont., Parts 3 and 4	
February 4, 6, 10	<i>Chapter 5: Extraction (Parts 1 and 3)</i>	Extraction PL due Acetophenetidin Notebook (NB) due
February 11, 13, 17	Extraction, cont. (Part 2)	
February 18, 20, 24	Extraction, cont. (Parts 4 and 5)	
February 25, 8:20pm	QUIZ #2 – all sections – see Canvas for room locations	
February 25 through March 3	<i>No Labs (Spring Break)</i>	
March 9, 10, 12	<i>Chapter 9: Extraction and TLC of Pigments in Spinach</i>	Spinach PL due Extraction NB due
March 16, 17, 19	<i>Chapter 8: Electrophilic Aromatic Substitution</i> <i>Chapter 6: Synthesis and Testing of Biodiesel (Part 1)</i>	EAS PL due Biodiesel PL Due Spinach NB due
March 23, 24, 26	Biodiesel, cont. (Part 2)	EAS NB due
March 30, 31, April 1	<i>Chapter 12: Making Polymers</i>	Polymers PL Due Biodiesel NB due
April 6, 7, 9	Checkout – Note: If you arrive late and your bay has already finished the checkout process, you will be assessed a 2% grade penalty.	Polymers NB due
April 13, 8:20pm	QUIZ #2 – all sections – see Canvas for room locations	

[†]Schedule may change due to unforeseen events – see course Canvas site for any updates.

[‡] Available on the Canvas website beginning January 13. You must complete this quiz no later than **11:00pm on January 27.** No extensions.