

**Chemistry 235 Syllabus
Organic Chemistry I Laboratory
West Virginia University
Summer 2019**

REQUIRED LAB MATERIALS:

- Spiral Bound Organic Chemistry Lab Notebook with Carbonless Duplicate Pages
- Sapling Labs Subscription. If you purchase the lab notebook from the WVU Bookstore, it has a Sapling access code printed inside.

COREQUISITE: Chemistry 233

GENERAL INSTRUCTIONS:

- Laboratory Room: You can find your lab room assignment by going to the Chem 235 eCampus page. You will also find your Sapling Key Code on eCampus.
- Experimental Procedure: A pdf file for each experiment can be accessed and downloaded on Sapling. **You are responsible for printing out and bringing the experimental procedure to lab with you each period.**
- Safety and Laboratory Rules: Before any laboratory work is permitted, you must read the WVU "Safety and Laboratory Rules for Organic Chemistry" and then sign a statement that you will abide by these rules.
- Clothing: **Safety goggles and a laboratory apron is required for lab.** Proper lab attire is the equivalent of a t-shirt, pants that cover from the waist to the ankles, and shoes that cover the entire foot. Tank tops, muscle shirts, spaghetti strap tops, tube tops, backless shirts, & calf length yoga pants are all unacceptable. Slip on shoes that leave the top of the feet or the heel area exposed are also unacceptable.
- Attendance: If you are forced to miss a laboratory period due to illness or an emergency, contact your instructor and teaching assistant. There are no makeup labs for Chemistry 235 for any reason. Your one lowest laboratory grade is dropped. This effectively allows any student to miss one laboratory without penalty.
- Pre-Lab Assignments: You are responsible for completing an online pre-lab assignment prior to each laboratory period. The pre-lab assignments are available on Sapling. You should read over the entire experiment and complete the pre-lab prior to coming to lab. Each pre-lab assignment will close at the start of the laboratory period (9:30 am). You will not have the opportunity to complete the pre-lab after that time.
- Quiz: A quiz will be given each Thursday on the experiments from that week including the experiment that you will be performing that day. For example, quiz 1 will cover experiments 1, 2, and 3.
- Final Exam: The laboratory final exam will cover material from the first lab to the last lab. Study your old quizzes and the pre- and post-lab questions to help prepare for the lab final. There is no makeup lab final exam and missing the final exam counts as a grade of zero.
- Your Teaching Assistant is in charge of your laboratory section. Follow instructions made by your TA concerning lab safety, keeping the lab clean, procedures, handing in assignments, etc. Do not be hesitant about asking your TA questions-- he/she is there to help you.

**Chemistry 235 Schedule of Experiments
Summer 2018**

Week	Date	Experiment	Subject	Quiz
1	May 14		No Lab	
	May 15		No Lab	
	May 16		Check-In Laboratory Safety Discussion Laboratory Notebook Discussion	
2	May 21	1	Melting Points	
	May 22	2	Crystallization	
	May 23	3	Distillation	Quiz 1
3	May 28	4	Gas Chromatography	
		5	Thin Layer Chromatography	
	May 29	6	Extraction	
	May 30	7	Stereochemistry	Quiz 2
4	June 4	8	Infrared Spectroscopy	
	June 5	9	Hydroboration-Oxidation of Alkenes	
	June 6	10	Synthesis of Diphenylacetylene	Quiz 3
5	June 11	11	SN1 and SN2 Reactions	
	June 12	12	The Williamson Ether Synthesis	
	June 13	13	NMR Spectroscopy	Quiz 4
6	June 18		Lab Final Exam TA Evaluations Checkout	
	June 19		No Lab	
	June 20		No Lab	

Grade Calculation	
Pre-Lab Assessments (on Sapling)	15%
Notebook (9, 10, 11, 12)*	20%
Experimental Report Sheets (1, 2, 3, 4, 5, 6, 7, 8, 13)*	30%
Quizzes	10%
Lab Final	15%
TA Subjective Grade (neatness, attitude, etc.)	10%

*Your TA is the authority when it comes to the due dates for experimental report sheets and experimental write-ups in your lab notebook. Lab work that is turned in late will be subject to a 10% (1-7 days late) or 25% (more than 7 days late) penalty.

Fill in your TAs contact information in case you need to get in touch with him or her.

Lab TA: _____

Email: _____

Mailbox: 217 Clark Hall

Grading: You grade for experiments 1-8 and 13 will be based on data report sheets that you complete and turn in. You must still record observations for these experiments in your notebook, however, notebooks will not be graded for these experiments. Experiments 9, 10, 11, and 12 all involve performing reactions in the laboratory. You will be required to keep a detailed laboratory

notebook for these experiments. Your TA will grade your laboratory notebook for these four experiments.

Expected Learning Outcomes

The organic chemistry laboratory course is designed to enhance the understanding of organic chemistry through experimentation. The skills acquired in the first semester organic chemistry laboratory course will provide a fundamental background for continuation into more advanced synthetic chemistry laboratory courses and eventual careers involving a laboratory science.

Upon successful completion of the Chemistry 235 laboratory course, students are expected to have the following proficiencies:

- **Effective Scientific Communication Skills** – Students in the Chem 235 laboratory are expected to maintain an accurate laboratory notebook documenting exactly what was done in the laboratory and when it was completed. Students should be able to competently explain and discuss organic chemistry laboratory techniques and effectively disseminate scientific information.
- **An Understanding Laboratory Safety** – Students will gain a general knowledge of the safety protocols for working with organic chemicals and performing organic reactions. Students will be able to assess a potentially hazardous chemical, access its safety data sheet, then devise a plan to handle that substance in accordance with proper protocol. A specific emphasis will be placed on handling organic chemicals, which can be flammable, potentially explosive, and highly toxic.
- **Synthesis of Molecules** – Students will be able to set up a variety of chemical reactions in accordance to safe and proper protocols. Students will be able to monitor the progress of a chemical reaction, isolate and purify organic products, and use both physical and spectroscopic data to characterize and identify these reaction products.
- **Operation of Scientific Equipment** – Students will learn both the theoretical basis and hands-on operation of various scientific instrumentation including: the operation of a gas chromatograph, mel-temp apparatus, refractometer, and infrared spectrometer.

Academic Integrity: *The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at the Student Conduct Code at http://studentlife.wvu.edu/office_of_student_conduct.*

Inclusivity Statement: *“The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Accessibility Services (293-6700). For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see <http://diversity.wvu.edu>.”*