Why Organic Chemistry Lab?

Yes, I know you are in this class because you have to be here, but why should you care about the class? Of course I would like you to enhance and deepen your understanding of chemistry. I also know that you are likely to forget most of the actual chemistry you learn within about five years after completing this class sequence. So the question becomes what do I hope you will carry with you throughout your life. I have designed specific aspects of the class around these skills that will benefit you in your future education, careers, and life in general.

• **Critical thinking:** the process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information to reach an answer or conclusion (dictionary.com). This skill set is one of the most important aspects of your education. Even if you forget every single fact you learned in college, the ability to think critically in any situation is something you should strive to achieve and hold on to throughout your life.

• **Evaluating evidence and assumptions.** What evidence do you...
have? Should any evidence be discounted? What can you conclude or not conclude with your this evidence? Learning to answer these questions will benefit you in future scientific endeavors and in making decisions about news articles, politics, and other aspects of life.

- **Thinking on your feet.** Even the most well-planned experiment can go wrong. When this happens, you should immediately begin assessing the situation and forming hypotheses (and tests for the hypotheses). This skill transfers beyond lab to daily life.

- **Communicating clearly and concisely.** One of the most frustrating parts of lab classes for students is writing a post-lab report or giving a presentation. While these are understandably challenging tasks, we have you do them for concrete reasons. Employers sight communication skills, both written and oral, as one of their top 10 desired skills in employees. No matter where you future takes you, the ability to communicate clearly will be essential. Additionally, the process of committing your thoughts to organized written or spoken word aids in the learning process.

- **General life skills.** As we move through the sequence of Chem 51L labs, we will begin to remove some of your supports one by one. For example, in Chem 51LB you will be told what data should be recorded for an experiment. By the time you reach Chem 51LC, you should be able to make these decisions for yourself. This parallels your progression from young adults into full adulthood. For those of you who are already full adults, this part should be easy!
TIPS FOR SUCCESS

• Keep a calendar. Use your smartphone or computer and set reminder!

• Think through experiments. Always consider WHY for each step.

• Always check your results BEFORE you leave lab.

HIERARCHY OF QUESTION-ASKING

1. Check to see if your question is answered on the syllabus, on the class website, on Piazza, or on another class document.

2. Ask a peer. This can be done many ways, including by posting on Piazza. PLEASE check to see if your question has been answered already before posting!

3. Ask a TA. Details specific to your lab section should be asked directly to your TA. More general questions or content questions can be asked of any TA.

4. Ask Dr. Link. There are MANY students but only one of me. I am happy to answer questions and help you learn, but please direct questions that can easily be answered by others to one of the three steps above. If you have a personal situation that needs my attention specifically, you can bypass the previous steps.

Course Description

The aim of the Organic Chemistry Laboratory Series (Chem 51L) is to provide you with an opportunity to learn about the synthesis, separation, purification, and identification of organic compounds. This course consists of weekly laboratory sections containing experiments designed to help students develop the observational and critical thinking skills that are essential prerequisites for a successful career in science (or any professional field). We will expect you not only to perform the experiments in the laboratory, but also to think about the principles behind the experiments. Please note that 51LC is the second in a sequence of lab classes and builds upon concepts learned in 51A/B/C lecture and 51LB lab. We will expect you to know and apply techniques and concepts from all prior organic lectures and labs. Detail regarding specific experiments can be found on the class website.

General Course Policies

Lab Absence Policy

If you must be absent from you lab section for a justifiable reason (and can provide evidence), you are allowed one, and only one, make-up lab maximum per quarter. If you miss an experiment, you must contact Dr. Link immediately, regardless of any statements made by a TA. Make-up labs allowed for religious holidays do not count for the one make-up lab per quarter IF arrangements are made with Dr. Link IN ADVANCE!

To request a make-up lab, email Dr. Link and include:

• Your name

• Your TA’s name or lab section course code

• Times that you can attend another section (minimum 2 possible times)

Lab Lecture Participation Policy

Lab lectures are conducted in an interactive manner, and you will need to participate to benefit from class. Participation counts as approximately three percent of your overall lab grade. Sections offered in a face-to-face setting will use iClickers.

Class Website: sites.uci.edu/chem51labs
EXPECTATIONS

**What We Expect From You**

- Be an active participant in your own learning.
- Be responsible for paying attention to due dates.
- Think through experiments before you get to lab.
- Use your resources wisely (reading, handouts, pre-lab videos, technique videos, etc).
- Ask questions when you don’t understand.
- Follow all safety rules.
- Conduct yourself honestly in all aspects of the class (see academic honesty policy).
- Treat yourself, each other, and us with respect.

**What You Can Expect From Us**

- Provide clear rules and expectations.
- Treat all students honestly and fairly.
- Support and facilitate your learning (but YOU still have to DO the learning).
- Grade fairly and provide formative feedback as promptly as possible.
- Treat you with respect.

Sections offered online meet at the time specified for the section using the online system Cisco WebEx (change from W15 51LB!). You may miss one lab lecture meeting with no grade penalty.

**Incomplete Pre-Lab Policy**

Pre-laboratory work is designed to ensure that you have thought through and understood the purpose of and procedures required for the experiment we will be conducting in the lab. Safety is a particular concern for us. For your education and your safety, you must complete all components of the pre-lab assignment before your lab period. Here are the rules.

- To be eligible to complete the experiment in the lab, you must complete all components of the pre-lab assignment. This includes pre-lab work in the ELN and Sapling Learning assignments.
- Sapling pre-lab assignments for an experiment open one week before that experiment. For example, a student with a Monday lab will have access to the Sapling pre-lab assignment the Monday before they perform that experiment. Unless otherwise stated by the instructor or the Head TA, Sapling pre-lab assignments for an experiment are due two hours before a student’s lab. For example, a student with a Monday 1:00pm lab section will have their Sapling assignment due Monday at 11:00am. For you assignment to be considered “complete”, you will need to either answer each question correctly (you can try multiple times) or have given up on that question.
- If you choose not to complete ANY part of the pre-lab assignment (ELN or Sapling) then you will not be allowed to conduct experiment and will receive a zero for the experiment score. You will be allowed to complete the post-lab assignment with a point deduction. If you find yourself in this situation, consult your TA to determine how to proceed. **Please note that there are no exceptions to this policy.**

**Late Work Policy**

If you chose to submit your post-lab assignments after the due date determined by your TA, 10 points will be deducted from the assignment score for every 24-hour period after the due date that they
are received by your TA.

**Academic Honesty Policy**

Academic dishonesty is a requirement for passing this class. While collaboration in lab is expected, written lab work is an individual effort. Copying from any portion of the written work from other students is not allowed and constitutes academic dishonesty. The turnitin.com service will be used to detect plagiarism in lab reports. Providing your work to another student who then copies your work is also considered act of academic dishonesty on your part even if you did not intend for the other student to copy your work. It is ok to ask whether something you are considering doing would be considered dishonest conduct in advance. There is no penalty for asking. If you choose to commit an act of academic dishonesty, you will receive an F grade for the course, and a letter will be sent to your Dean to be placed in your permanent academic file. For more information on Academic Honesty, see the university’s policy at: http://www.editor.uci.edu/catalogue/appx/appx.2.htm

**Lab Safety**

*Safety is extremely important in a laboratory settings, and safety rules will be strictly enforced!* Read the Safety Policies on the course website before your first lab section. This reading provides a solid foundation in lab safety. It is vitally important for you to read, understand, and abide by any safety concerns noted in experiment handouts. You will need to complete a safety quiz and sign a safety agreement on Sapling before working in lab. To participate in lab, follow all safety rules, wear safety equipment (goggles and lab apron) and wear proper clothing (NO shorts, miniskirts, or sleeveless tops; shoes must COMPLETELY cover feet) at all times. NO skin should be visible on your torso and lower body. If you choose not to follow safety rules, you will be required to leave your lab section for the experiment, and you will have a zero score for the pre-lab, in-lab work and written discussion of the week’s experiment.

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**Class Website:** sites.uci.edu/chem51labs

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**GRADING (Tentative)**

**Sapling Assignments**  
(pre-lab & beginning of term assignments)

- 43 points total, 2-5 points per assignment

**Lab Lecture Participation**

- 18 points (can miss 1 day with no point loss)

**Daily Experiment Score**

- Weeks 1, 2, 4-8; 15 points per day
- Includes ELN pre-lab, in-lab, TA points

**Lab Reports**

- 6 total reports, 280 points
- 35 points for reports for 1-week experiments
- 70 points for reports for multi-week experiments

**Group Presentation**

- 1 In your lab section in addition to report, 15 points

**Lab Practical**

- In lab section, 180 points
Massive Safety Violation Policy

If a massive safety violation occurs in a lab section, special sanctions apply. Massive safety violations include but are not limited to:

- Glass, needles, or other sharps in trash cans
- Chemicals poured in sinks or otherwise disposed of inappropriately
- Extensive glassware or equipment breakage

If the responsible party or parties within a lab section can be identified, they will lose all points associated with the experiment. If the responsible party or parties within a lab section cannot be identified, the mean for the entire lab section will be lowered by a letter grade. Details regarding this policy can be found on the class website.

While this policy may seem harsh, it is necessary to ensure that these extremely important safety rules are taken seriously.

Email Etiquette

Dr. Link and the Head TA will answer questions by email as often as possible, but due to the number of students in the class, please check this syllabus, the class website first to see if the answer to your question is readily available. There are only so many hours in a day, so it's best for everyone of us are not answering questions for which you can easily find your own answers! When writing your email, remember, we are people too! Please use a salutation in your email (e.g. Hi, Dr Link . . .) and include your name, student ID and lab section course code. You can generally expect a response in 24-48 hours. For the promptest possible response, include all relevant details in your original email. If you do not get a response within about 48 hours, it is possible that your email was not received or was just missed in a VERY full inbox. In this case, please send your email again.

About Letter Grades

Letter grades are determined on a curve based on the mean and standard deviation for each section and the mean and standard deviation for the class as a whole. This means that the standard 90/80/70/60 percentage scale DOES NOT apply. The cutoff for an A might be above 90%, depending on the statistics for your section and the class. This method of determining letter grades is necessary to
account for grading differences amongst TAs. To give you a general sense of where you stand, the overall average for each section usually approximates a B- letter grade. Only final course grades have a corresponding letter. There are no letter grades for individual assignments.

**Obligatory Enrollment Information from the Chemistry Undergraduate Office**

**ENROLLMENT FOR CHEMISTRY COURSES S15**—Use WebReg (http://www.reg.uci.edu/registrar/soc/webreg.html) to add, drop, or change the grade option in your classes.

Enrollment Deadlines: ADD/DROP/CHANGE: The deadline is the end of Week 2 by 5:00PM (April 10, 2015). *Submit an Enrollment Exception via StudentAccess for Add/Drop/Change requests after the deadline.

You are strongly encouraged to consult the Chemistry Undergraduate Office website at http://www.chem.uci.edu/undergrad. You will find the answers to your most Frequently Asked Questions on this site.

The Chemistry Undergraduate Program Office is located in NS2 1101. Email: undergrad@chem.ps.uci.edu; Phone: (949) 824-2895; Fax: 949.824.8571. **Open Hours:** Monday through Friday from 9:00AM-11:30AM & 1:00PM-3:30PM. Closed 12-1pm. Subject to change and listed on the Chemistry Undergraduate Office website.

**Dance Chemistry Study**

This quarter, we will be participating in a study to determine the efficacy of education videos, called DanceChemistry, in aiding in your understanding of different chemistry topics. More information about this study is provided in the study info sheet at the end of this document. If you have any questions about this study, please email Gidget Tay at tayg@uci.edu. Opting out of the study will not affect your grade in any way. Directions for how to opt out of the study are listed on the study info sheet.

**Who to Contact for... (continued)**

**...questions about your score for a specific assignment?**

Your TA is the person grading your assignment, so you should ask your TA first. Remember to be polite and respectful. Ask for clarification if you don’t understand why deductions were made or why your answer is wrong.

If you still have concerns after consulting your TA, then talk to Dr. Link.

**...questions about your final letter grade for the class?**

The calculation of final letter grades for this class is complex, takes time, and involves statistics to adjust for differences between TAs’ grading. You will get to see your letter grade before it is submitted to the registrar. If you have a question about your grade, email Dr. Link from your UCI email address (to protect your privacy) and include the following

- Name and ID
- Lab section course code OR TA name & day/time

Class Website: sites.uci.edu/chem51labs
University of California, Irvine
Study Information Sheet

Assessing the Effectiveness of Educational DanceChemistry Videos to Teach Chemistry Concepts

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• You are being asked to participate in a research study. To determine the efficacy of these new educational videos, DanceChemistry, in aiding students’ understanding of chemistry topics, we will be gathering information from in-class pre- and post-surveys.

• You are automatically enrolled in this study as a student in Spring 2015 Chem 1LC or Chem 51LC Chemistry laboratories (Course Code: 40301, 40303, 40305, 40306, 40309, 40311, 40312, 40313, 40315, 40316, 40317, 40319, 40322, 40323, 40325, 40326, 40328, 40329, 40331, 40332, 40334, 40335, 40337, 40338, 40341, 40342, 40343, 40344, 40346, 40347, 40349, 40350, 40352, 40353, 40355, 40356, 40359, 40361, 40363, 40364, 40365, 40367, 40369, 40370, 40373, 40375, 40376, 40377, 40378, 40379, 40380, 40383, 40385, 40388, 40390, 40771–40840) taught by Dr. Kimberly Edwards and Dr. Renee Link. You must be at least 18 years old in order to participate in this study.

• The research procedures involve analyzing data obtained from an in-class pre- and post-survey. The data collected in this study will only be reported in aggregate as the average of a large group of students. No personal or identifiable information will be published or be available outside of this research project, and all research data collected will be stored securely and confidentially. The research data will be maintained for 1 year for future research in a de-identified form.

• All students enrolled in this course are automatically enrolled in the study. By participating in this study, you authorize the lead and co-researchers above to obtain and analyze your pre- and post-surveys. You have the option to opt out which will remove your data from the analysis at the end of the quarter. If you would prefer your data not be used in our analysis, please let your laboratory TA know you would prefer to not participate. You will still be asked to take the pre- and post-surveys but they will not be included in the data analysis at the end of the quarter. Opting out will not affect your grade. To opt out, let your TA know when handing in your surveys.
• You must be 18 years old in order to participate in this project. If you are under 18 as of today, please contact your laboratory TA and ask that your data not be used because you do not meet the eligibility requirements.

• You will not be compensated nor is there any cost to you for your participation in this research. There are no direct benefits to you from participation in the study, but the goal of the study is to improve instruction for future students.

• The research team, authorized UCI personnel and the study sponsor may have access to your study records to protect your safety and welfare. Any information derived from this research project that personally identifies you will not be voluntarily released or disclosed by these entities without your separate consent, except as specifically required by law.

• If you have any comments, concerns, or questions regarding the conduct of this research please contact the researchers listed at the top of this form.

• Please contact UCI’s Office of Research by phone, (949) 824-6662, by e-mail at IRB@research.uci.edu or at 5171 California Avenue, Suite 150, Irvine, CA 92617 if you are unable to reach the researchers listed at the top of the form and have general questions; have concerns or complaints about the research; have questions about your rights as a research subject; or have general comments or suggestions.