

# CHEM 331L Organic Chemistry Laboratory Syllabus

## Section 02, Spring 2019

**Lab Time: Mondays 1:00–4:50 pm**

**Lab Location: Keck 377**

**Instructor: Dr. Allegra Liberman-Martin**

Email: [libermanmartin@chapman.edu](mailto:libermanmartin@chapman.edu)

Phone (Office): (714) 516-5586

Office Location: Keck 236

**Office Hours: (in Keck 230)** Tuesday, Wednesday, Thursday 4:00–6:00pm

Prerequisite: 1 semester of Organic Chemistry (Chem 230) and Lab (Chem 230L)

### Required Materials

Pavia, D., & Lampman, G. *A microscale approach to organic laboratory techniques* (Sixth Edition ISBN-13: 978-1-305-96834-9 or Fifth ed. ISBN-13: 978-1-133-10652-4 (3 copies of Fifth ed. are available in the Chapman Library Reserve)

### Resources

As a resource for all students, the *CHEM 331L Student Resource Site* is available in Blackboard (<https://blackboard.chapman.edu>). This site will contain all handouts, documents, or announcements that are relevant to the lab. You are responsible for checking the course website on a regular basis.

### Description

CHEM 331L is the second semester of a two-semester laboratory sequence. It provides essential organic chemistry lab technique training and helps you learn materials from CHEM 331 lecture. This laboratory course is to develop skills of careful observation, interpretation, and recording of organic chemistry reaction phenomena. Basic organic chemistry synthesis technique development, handling chemical reagents, and more advanced instruments are the major goals of this lab. This course is primarily to develop organic chemistry lab technique, and secondarily to supplement CHEM 331.

### Success in CHEM 331L

Success in CHEM 331L requires significant investment of time and effort. Success in this course is not necessarily measured by a grade, per se, but rather by the knowledge and skills gained by the student about experimental lab techniques and how to apply them to real life situations. This will require hard work and dedication, but the benefits will last beyond your academic career at Chapman University.

### **CHEM 331L Specific Learning Objectives**

- Apply the hypothesis-driven scientific method to solve problems.
- Demonstrate competency and mastery of organic chemistry synthesis skills
- Understand and apply basic organic chemistry synthesis techniques to real life cases.
- Develop innovative and creative ideas using organic chemistry laboratory skills.

In addition to the above learning outcomes, CHEM 331L allows for introduction or reinforcement of the following Program Learning Outcomes for the B.S. in Chemistry.

### **Program Learning Outcomes for the B.S. Chemistry**

- Students will be able to use the scientific method to solve problems.
- Students will be able to demonstrate written, visual, and oral presentation skills to communicate scientific knowledge.
- Students will be able to apply critical thinking and analytical skills to design and execute a scientific experiment, analyze the results, and arrive at well-reasoned scientific conclusions.
- Students will be able to demonstrate an understanding of core knowledge of chemistry.

### **Attendance:**

Attendance at your regularly scheduled lab section is **mandatory**. Labs will begin promptly at designated start times. If you are late or miss a lab class, this will greatly hinder your ability to be successful in this course and you will receive 0 point for that lab.

All students must be present in all of the lab classes. **Missing more than 2 lab classes will result in the student receiving a failing grade. There are no makeup labs except required attendance at an official University event such as representing Chapman for a sport event.**

**If you miss a lab experiment due to illness, emergency or required attendance at an official University event you must notify your instructor and provide appropriate document (e.g. Doctor's note or letter from the Dean of Students) within three days.**

### **Assignments and Evaluation:**

- **Lab Reports (100 points per lab):** Formal reports for each lab are due one day after each experiment. See the sample lab report for more details on the content and formatting requirements. The reports will be submitted using Turnitin on Blackboard. There will be a 10-minute quiz at the beginning of lab every week. These quizzes are based on the pre-lab questions. The maximum number of points for all lab reports is 800 points (the lowest 2 reports will be dropped).
- **Lab midterm and final exams (100 points each)**
- Missing Experiment #11 will be counted as one drop lab although this lab does not require lab report and there will be no grade for it.
- For the Micro-Kit box: Dirty glassware will have 3 points deduction and missing glassware will have 5 points deduction from lab report, lab technique section.

**Grading Scale:**

Grade	Score	Grade	Score
A	92.5-100 %	C	72.0-74.9 %
A-	90.0-92.4 %	C-	69.0-71.9 %
B+	86.0-89.9 %	D+	66.0-68.9 %
B	82.0-85.9 %	D	63.0-65.9 %
B-	78.0-81.9 %	D-	60.0-62.9 %
C+	75.0-77.9 %	F	Below 60.0 %

**Late Work**

- Late work is any assignment not turned in at the end of the day it is due.
- Late work will be accepted – there is a 10 points deduction for each day late. Any assignment turned in greater than 1 week late will not be accepted.

**Safety Policies:**

Students are required to follow all safety rules and standards set forth by the Schmid College of Science and Technology. Students not following these standards may be asked to cease activities and/or leave the laboratory. Laboratory instructors have full discretion to assess penalties as they see fit, should students violate any of these policies. Students must wear long pants and shoes that completely cover their feet in the lab. Additional personal protection equipment (PPE) such as eye protection, gloves, and lab coats, will also be required.

**Safety Rules:**

Students are responsible for thoroughly reviewing the university's safety regulations and reading and signing the Safety Rule sheet when check in the Organic Chemistry lab. You **will not** be allowed to participate in any experimental procedure until you have completed this procedure.

**Cell Phones:**

The use of cell phones at any time during the lab will not be permitted. They are a distraction to your ability to complete the experimental procedure and may cause accidents. You will be asked to leave the experiment if you repeatedly violate this policy and receive a 0 on the experiment.

**Safety Goggles/Lab Coats:**

**Safety goggles and lab coats must be worn at all times in the laboratory.** You can only remove your goggles when you are out of the lab or with the permission of your instructor. You will need to stop your lab work, notify your instructor, and excuse yourself from the room before removing the goggles. Most lab-related eye injuries result from a spill that was generated **not** by the injured person, but by someone else in the nearby vicinity. You will be asked to leave the lab and will receive a grade of zero for the experiment if you repeatedly violate this policy.

**Food and drink:**

**No food and drink (including water) is allowed in the lab.** There are serious repercussions to ingesting food that can be contaminated with chemicals present in the lab. Food and drinks can absorb volatile (vaporous) chemicals and be contaminated just by being in the lab. If you need to drink something or take a short break for a snack, always step outside the lab and leave the food outside.

**Emergency:**

In case of an emergency, the evacuation site is the Football stadium.

**Academic Integrity Policy:**

Chapman University is a community of scholars that emphasizes the mutual responsibility of all members to seek knowledge honestly and in good faith. Students are responsible for doing their own work and academic dishonesty of any kind will be subject to sanction by the instructor/administrator and referral to the university Academic Integrity Committee, which may impose additional sanctions including expulsion. Please see the full description of Chapman University's policy on Academic Integrity at:

<https://www.chapman.edu/academics/academic-integrity/index.aspx>

**Chapman University's Students with Disabilities Policy:**

In compliance with ADA guidelines, students who have any condition, either permanent or temporary, that might affect their ability to perform in this class are encouraged to contact the Disability Services Office. If you will need to utilize your approved accommodations in this class, please follow the proper notification procedure for informing your professor(s). This notification process must occur more than a week before any accommodation can be utilized. Please contact Disability Services at (714) 516-4520 or visit the following link:

[www.chapman.edu/students/student-health-services/disability-services](http://www.chapman.edu/students/student-health-services/disability-services)

Once formal approval of your need for an accommodation has been granted, you are encouraged to talk with your professor(s) about your accommodation options. The granting of any accommodation will not be retroactive and cannot jeopardize the academic standards or integrity of the course.

**Chapman University's Equity and Diversity Policy:**

Chapman University is committed to ensuring equality and valuing diversity. Students and professors are reminded to show respect at all times as outlined in Chapman's Harassment and Discrimination Policy. Please see the full description of this policy at <http://www.chapman.edu/faculty-staff/human-resources/eoo.aspx>

Any violations of this policy should be discussed with the professor, the dean of students and/or otherwise reported in accordance with this policy.

### **Student Support at Chapman University.**

Over the course of the semester, you may experience a range of challenges that interfere with your learning, such as problems with friend, family, and or significant other relationships; substance use; concerns about personal adequacy; feeling overwhelmed; or feeling sad or anxious without knowing why. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. You can learn more about the resources available through Chapman University's Student Psychological Counseling Services here:

<https://www.chapman.edu/students/health-and-safety/psychological-counseling/>

Fostering a community of care that supports the success of students is essential to the values of Chapman University. Occasionally, you may come across a student whose personal behavior concerns or worries you, either for the student's well-being or yours. In these instances, you are encouraged to contact the Chapman University Student Concern Intervention Team who can respond to these concerns and offer assistance:

<https://www.chapman.edu/students/health-and-safety/student-concern/index.aspx>

While it is preferred that you include your contact information so this team can follow up with you, you can submit a report anonymously. 24-hour emergency help is also available through Public Safety at 714-997-6763.

### **Additional Chapman Resources**

**Laptop Rental Program** An automated laptop rental kiosk is available in the Student Union, which is free to all Chapman students with a valid ID. You can swipe your ID card, take a laptop anywhere on campus, and return it within the 4-hour time limit. There are six Dell laptops and six Macbook Pro laptops available to rent.

**All Gender Restrooms** To find Chapman University's all-gender restrooms, click on Restrooms on the drop-down menu of the interactive campus map at <https://www.chapman.edu/about/maps-directions/campus-map/index.aspx>. All-gender restrooms are labeled and identified across campus.

**Food Pantry Assistance** If you or a student you know could benefit from access to the food pantry or would like more information on the food pantry program, contact the Dean of Students at (714) 997-6721.

## CHEM 331L Tentative Schedule Spring 2019

<b>Week (Date)</b>	<b>Experiment #</b>	<b>Experiment Title</b>
1 (Jan. 28)	-	Locker Check-In, Safety Training, Chem Draw Scifinder and Sample Lab Report
2 (Feb. 4)	Exp 1	Chromic Acid Oxidation of Alcohols
3 (Feb. 11)	Exp 2	#7 IR and Boiling Point Determination
4 (Feb. 18)	Exp 3	Unknown Identification Using IR and NMR
5 (Feb. 25)	Exp 4	IR & NMR Spectroscopy Presentation
6 (Mar. 4)	Exp 5	#35 Synthesis of Triphenylmethanol
7 (Mar. 11)	<b>Midterm</b>	<b>Midterm Exam</b>
8 (Mar. 18)	<b>Spring Break</b>	<b>Spring Break</b>
9 (Mar. 25)	Exp 6	#49 Benzocaine
10 (Apr. 1)	Exp 7	#50 N,N-Dimethyl-m-toluamide "Off" synthesis
11 (Apr. 8)	Exp 8	#33B NaBH <sub>4</sub> reduction of camphor
12 (Apr. 15)	Exp 9	#39 Aldol Condensation Reaction: Benzalacetophenones Synthesis
13 (Apr. 22)	Exp 10	Experimental Design & literature study
14 (Apr. 29)	Exp 11	#52A&B Polymer (No Report)
15 (May 6)	Final	<b>Final Exam and Check Out</b>

NOTE: 6<sup>th</sup> edition