SOUTHERN CALIFORNIA UNIVERSITY OF HEALTH SCIENCES
Accelerated Sciences Division

Syllabus Table of Contents

COURSE INFORMATION

Course Number (Prefix Code): OCHM316L

Course Name: Organic Chemistry II laboratory

Course Description:
This laboratory course builds upon the concepts learned in Organic Chemistry I lecture and lab, and develops critical thinking and independent problem-solving. The course includes two sections of structural elucidation of organic compounds using analytical techniques Infrared (IR) and Nuclear Magnetic Resonance (NMR) spectroscopy. Knowledge from lecture will be used to aid the interpretation of quality tests (solubility, oxidation, coordination, reactivity, etc.) to determine functional groups present in unknown solutions. Students will prepare, purify, and characterize novel organic compounds while applying starting material, functional groups, and typical reaction conditions to predict outcomes.

Course Delivery Model(s): Online Interactive, On-Ground

Time Requirement:

Laboratory Hours per term:	30
Total Hours per term:	30
Course Duration (weeks):	5
Credits:	1

Credit Hour Verification:
This list represents the average amount of time a student is expected to spend to successfully complete this course.

	Activity Type	**Online-Interactive Hrs/wk**	**On-Ground Hrs/wk**
Course Time	Lecture	3	3
Academic Engagement	Participation	1.5	1.5
	Homework (Pre-labs and Reports)	2	2
Preparation and Study	Study (assessment prep)	2	2
Other	Exams (Midterm and Final)	0.5	0.5

Total	Total per week	9	9
	Total per block	45	45

Prerequisites: OCHM 311 and OCHM311L highly recommended

Co-requisites: OCHM 316 highly recommended.

This course may be taken again for credit the following number of times (repeatable): 5

LEARNING OUTCOMES, OBJECTIVES, & ALIGNMENT

Student Learning Outcomes
In successfully completing this course, students will be able to

SLO
1. Demonstrate proficiency in performing laboratory techniques, recording and interpreting the results.
2. Identify functional groups and organic molecules using spectroscopy techniques.
3. Identify alcohols with the help of basic diagnostic testing.
4. Identify aldehyde and ketone with the help of basic diagnostic testing.
5. Prepare and compare acid derivatives and esters.
6. Prepare several synthetic polymers and compare their properties.

TEXTBOOKS & MATERIALS

Required Textbook(s): SCU Organic Chemistry II Laboratory Manual (available on Canvas)

Required Materials: Lab Notebook: Students will be required to keep a laboratory notebook, and the instructor will grade notebook entries. The notebook allows students to accurately record experiment procedures and data, so students should write it so that someone else could repeat the experiments and get the same results. Among other things, this includes recording all spectroscopic and analytical data obtained from the experimental procedure. Further information about the lab notebook will be provided in class.

Required Materials: Working computer with a strong internet connection, camera, and a microphone. Scientific calculator.

Scientific Calculator*

*** Graphics or text-memory calculators are not allowed for use during quizzes or exams. If a student brings one, they will have to take the quiz without a calculator! Students are encouraged to obtain a scientific calculator with exponents and logarithms immediately, rather than the day before a quiz or an exam. It is important to be comfortable with the calculator being used, rather than to be struggling to locate the keys for certain mathematical operations. For example, a TI-30X IIS is acceptable.*

Provided Materials: Flame resistant Lab Coat/Apron, Nitrile gloves, Safety Goggles. Only approved safety goggles must be worn. Approved safety goggles will be provided by the lab instructor during the first lab session. Goggles are required during all lab sessions. No goggles, no experiment.

Required Attire: Attire for lab: Close-toed shoes, professional attire and lab coats are mandatory during all lab hours. No shorts, heels, or flip-flops will be allowed in the laboratory; hair longer than shoulder-length must be

pulled back and held with a clip or hair tie. Gloves, goggles and additional safety equipment will be required per experiment.

Technology Requirements

Learning Management System: Canvas. If a student is unfamiliar with the Canvas learning management system, please visit the manuals and learning guides available in the Canvas Student Guide. It is important that students are comfortable and competent in using this system, as all course material and communication will be done via Canvas.

Navigating Canvas – the Canvas site has a large set of Canvas tutorials and videos for students.

Browser and Computer Requirements for Canvas: This course requires that students have access to Google Chrome or Microsoft Edge.

Examination System: Proctorio. We will be using the Proctorio Online Exam Proctoring Service in this course. Proctorio is a software extension in Chrome that uses your computer's screen, web cam, and microphone to create a remote proctored environment, and enables students to take exams via Canvas from any remote location. *Students must have a strong and stable internet connection for Proctorio to work well.* During exams, students, the computer, and all surrounding environments may be recorded.

In addition to the instructor(s) and Teaching Assistants(s) of this course, Proctorio and SCU Proctorio administrators are the only ones who will have access to the recordings. The Chrome browser extension must be installed before students can take any exam, and it can be removed once an exam is complete.

There will be an initial practice exam for students to become familiar with using Proctorio, which allows students to identify any potential issues prior to using this examination system.

Suggestions for completing online coursework: Save work often; this includes backing it up on multiple devices or cloud applications. When submitting final papers on the Canvas learning management system (LMS), ensure that all files have been uploaded properly. Also make sure to keep a hard copy of all papers/projects in case of an unforeseen technological failure or outage.

EVALUATION OF STUDENT LEARNING

Grading scale:

Letter grade
A = 90% - 100%
B = 80% - 89.99%
C = 70% - 79.99%
D = 60% - 69.99%
F = 0.0% - 59.99%

Assessments:

Assessment Name	# of assignments	Points Each	Weight	SLO Linkage
Lab Exams	2	150	40%	1-6
Lab Notebooks	7	10	15%	1-6
Pre-labs	7	5	10%	1-6
Labs reports	7	15	25%	1-6
Participation (discussions, worksheets, etc)	10	9	10%	1-6

Course Topics:

Module	Module Title	Topic	Assessment Activity	SLO Linkage
1	Infrared Spectroscopy	Infrared Spectroscopy	Prelab, Lab notebook, Participation and Lab report -	1-2
2	NMR and Alcohols Phenols	Nuclear Magnetic Resonance Alcohols and Phenols	Prelab, Lab notebook, Participation and Lab report	1-3
3	Organic Functional Groups	Organic Functional Groups	Prelab, Lab notebook, Participation and Lab report	1-2
Midterm Exam				1-3
4	Properties of Acids and Regioselective Nitration	Properties of Carboxylic Acids and Esters Regioselective Nitration of Methyl Benzoate	Prelab, Lab notebook, Participation and Lab report	1, 4-5
5	Synthetic Polymers	Synthetic Polymers	Prelab, Lab notebook, Participation and Lab report	1, 6
Final Lab Exam				1, 4-6

UNIVERSITY POLICIES

All university policies apply to this course and all others. For full policy information please consult the SCU Catalog. Additionally, program policies apply to students in each program as described in the Catalog and in SCU Health Handbook for clinical courses.

Drop Date: It is a student's responsibility to understand when to consider unenrolling from a course. Refer to the SCU Academic Calendar for dates and deadlines for registration. Refer to SCU Academic Policies for information about the drop period.

Incomplete Policy: Under emergency/exceptional circumstances, students may petition for an incomplete grade. See the SCU Catalog for Policies about Incomplete Grades

Academic Integrity: Students at this university are expected to maintain the highest degrees of professionalism, a commitment to active learning, and display integrity both in and out of the classroom. See the SCU. SCU Academic Integrity Code.

Accessibility Services and Accommodations: The Office of Student Services provides support to students with disabilities requiring accommodation in concert with the lead faculty for this course. All students are encouraged to request accommodation as far in advance of when the accommodation will be required as possible to allow the University to process the request and provide approved accommodation. To begin the process please request a consultation with the designated Accessibility Services Officer as soon as possible. Once the Office of Student Services approves the request, the letter of accommodation will be provided to the student and lead faculty member via email. The student should be certain to follow-up with the lead faculty member to plan for the specific accommodation needs for the course. Program requirements cannot be modified to accommodate a disability. Please see the catalog for details regarding Accessibility Services and Accommodations.

A complete list of University Services is available through MySCU, including:

- Tech Support information
- Veterans Support Services
- Resources for Title IX support though the Campus Safety tab
- Student Advocacy and Accountability resources

Learning Resource Center: Students can use the library's resources which provide students with an excellent collection of books, journals, electronic databases, and websites as well as consult with the librarian to help with the course.

Online Etiquette: In general, behavior in an online classroom should emulate the professional behavior expected in an on-ground classroom with a few additional requirements:

- Avoid using text slang and abbreviations such as "u" (instead of "you"), "TLDR" (Too Long, Didn't Read) or "TBH" (To Be Honest) - not everyone knows what they are. Do not use ALL CAPS for entire sentences or posts - this is seen as yelling at someone.
- Any form of personal attack or inappropriate response with other students or faculty is unacceptable. We will remove any discussion posts showing this and warn the author.
- If a student disagrees with someone's comments, they should do so respectfully and collegially and provide legitimate examples to support their side.
- Before pressing the submit button review comments, making sure nothing is coming across as defensive, too "know-it-all" or critical, or academically inappropriate. It is easy for someone to misinterpret the meaning when they cannot see facial expressions or hear the tone of voice.
- Avoid short, generic replies such as "I agree!", "I like it!" or "Funny!" – explain why, add another point in support of the idea, or raise a question to continue constructive dialogue.

Attendance: SCU policy defines attendance for all courses and specifies online courses as active, weekly participation in the course as described in the syllabus. Examples of activities could include, but are not limited to:

- Participating in weekly online chats or discussions
- Submitting or completing assignments
- Commenting on other student contributions
- Actively logged on and participating in class at least three times per week

See the Academic Policies page in the SCU Catalog for more details on Attendance Policy.

Accelerated Sciences Course Recommendations

- Read before and after each class. Skim the chapter before it is covered in lecture to become comfortable with some of the terms associated with each topic. Review each chapter after it is covered in class to enhance understanding of the material.

- Do not wait until the night before homework is due to start the assignment. Understanding of concepts will be enhanced if the time is taken to learn them beforehand and later review the material without being rushed.
- Stay focused by finding an environment to study with few distractions.
- Participate during class by taking notes and looking over them afterwards.
- Any topics covered in the course could be presented in subsequent examinations, so it is critical to prepare and learn all presented material.
- Remember that procrastination in an accelerated course can quickly prove disastrous! Failure to learn foundational principles can make all future material seem nearly incomprehensible, so make sure to budget time wisely over the next five weeks.

Specifically for On-ground courses:

- Ask questions for clarification when not understanding the material being covered.
- *Do not skip class, arrive late, or leave early.* Given the accelerated nature of our courses, every minute of class missed can have a real impact on student success in a course.
- Work on assigned problems as close to the time as when the topic is covered in class to increase understanding of specific concepts.
- Find a group of students to study with. This makes studying more fun and helps learning of the material by teaching to and learning from peers. Explaining these concepts to other students aids in mastery of what is covered.

Teaching Methods & Instruction

Evaluation of Experimental Technique: Students will be assessed on their overall performance and regards for the rules of the laboratory and safety procedures.

Attendance and Participation: Because experiments are the main point of this class, attendance and participation are mandatory and will be incentivized through grades. For each lab period students will receive points for participation grade. Showing up prepared and on time is one part of this grade, the other is doing the lab work. Students should check with the lab instructor before leaving the laboratory after completing each experiment. *Students are expected to attend all scheduled lab meetings.*

Lab Notebook: Students will be required to keep a laboratory notebook, and the instructor will grade notebook entries. The notebook allows students to accurately record experiment procedures and data, so it should be written so that someone else could repeat the experiments and obtain the same results. This includes recording all spectroscopic and analytical data obtained from the experimental procedure. Further information about the lab notebook will be provided in class.

Pre-labs: Pre-labs contain content questions that are intended to help students prepare for lab procedures. Pre-labs can be found in the lab manual and must be completed before each lab class.

Post-labs: Post-labs, or lab reports will consist of the report sheet(s), answers to post-lab questions and sometimes Excel plots of data analysis when appropriate. While the lab activity may be group-based, lab reports must be completed individually (lab reports are not group assignments).

Exams: There are two exams, a mid-term, and a final exam. The midterm exam will be based on the first half of the course. The final exam will be based on the entire course. The types of questions asked will be the same as that of the midterm.

The exams are all on Canvas. Please pay attention to the due dates. They are final and will not be extended. Proctoring is required by the instructor for all exams.