



CHEM 2411L - Organic Chemistry I Laboratory

Course Syllabus - Fall 2017

Individuals with disabilities who need to request accommodations should contact the Disability Services Coordinator, Student Center 214, 678-466-5445, disabilityservices@mail.clayton.edu.

Course Description:

Number and Title:

CHEM 2411L (CRN 80148 and 80149)
Organic Chemistry I Laboratory

Credit Hours:

1.0 semester credit hours

Catalog Description:

A study of the common laboratory techniques used in synthesizing, purifying and analyzing organic compounds.

Course Prerequisite:

CHEM 1212, CHEM 1212L

Course Co-requisite:

Co-requisite: [CHEM 2411](#)

Note: Due to the co-requisite nature of CHEM 2411 and CHEM 2411L, students dropping one of the two courses must also drop the other.

Notebook Computer Requirement:

Each CSU student is required to have ready access throughout the semester to a notebook computer that meets faculty-approved hardware and software requirements for the student's academic program. Students will sign a statement attesting to such access. For further information on CSU's Official Notebook Computer Policy, please go to <http://itpchoice.clayton.edu/policy.htm>.

Computer Skill Prerequisites:

- Able to use the computer's operation system (Windows®)
- Able to access and send e-mail (Outlook® or Outlook Express®)
- Able to use a Web browser (Internet Explorer®) and search engine
- Able to download files from a web site to your computer
- Able to use a word processor system (Word®)
- Able to use a spread sheet system (Excel®)

In-class Use of Student Notebook Computers:

Student notebook computers will be used in the laboratory in this course. Computers will also be required to access course materials and to communicate with your instructor.

Desire2Learn (Online Classroom):

On-line activity will take place in Desire2Learn, the virtual classroom for the course. You can gain access to Desire2Learn by signing into the SWAN portal and selecting "D2L" on the top right side. If you experience any difficulties in Desire2Learn, please e-mail or call the HUB at TheHub@mail.clayton.edu or (678)466-HELP. You will need to provide the date and time of your problem, your SWAN username, the name of the course that you are attempting to access, and your instructor's name.

Course Objectives:

- A successful student will be able to:
 - demonstrate laboratory techniques used in organic chemistry.
 - perform and analyze the spectroscopic methods commonly used in an organic chemistry laboratory.
- Additional topics at the discretion of the instructor

Student Learning Outcomes:

General education outcomes:

- Communication: knowledge base. CHEM 2411L will provide knowledge base information necessary for communication of information concerning principles of organic chemistry.
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- Critical Thinking: Question/Issue, Method, Evidence, Conclusion. CHEM 2411L will provide problem solving skills needed in an organic chemistry laboratory. Students will be required to assess information obtain during laboratory experimentation and form a conclusion based on that information. In this process, students will be required to determine which given information is pertinent and if their conclusion is reasonable.

Chemistry Outcomes:

CHEM 2411L is a required course in the B.S. degree in chemistry. CHEM 2411L supports outcomes 1, 2, 3, 5, and 6 of the chemistry major.

- Outcome 1: demonstrate knowledge of the basic principles of major fields of chemistry.
- Outcome 2: demonstrate a broad range of basic laboratory skills applicable to chemistry, and improved chemical research skills.
- Outcome 3: demonstrate knowledge of technology related to chemistry, including laboratory instrumentation.
- Outcome 5: communicate scientific information in a clear and concise manner both orally and in writing.
- Outcome 6: Collect, evaluate and interpret scientific data, and employ critical thinking to solve problems in chemistry and supporting fields.

Biology Outcomes:

CHEM 2411L is a required course in the B.S. degree in biology. CHEM 2411L supports outcomes 2, 3, 4, 5, and 6 of the biology major.

- Outcome 2: Demonstrate a mastery of a broad range of basic lab and technology skills applicable to biology.
- Outcome 3: Apply knowledge of physical science, mathematics, and statistics to biological concepts.
- Outcome 4: Communicate scientific information in a clear, concise manner both orally and in writing.
- Outcome 5: Demonstrate the ability to collect, evaluate and interpret scientific data, and employ critical thinking to solve problems in biological science and supporting fields
- Outcome 6: Collaborate effectively on team-oriented projects.

Instructor Information:

Dr. Susan F. Hornbuckle

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Internet: www.susanhornbuckle.com

Office: LDS 235B

Office hours:	9:50 AM - 11:05 AM	T	LDS235B
	11:30 AM - 12:30 PM by appointment*	Th	LDS222
	1:10 PM - 2:10 PM	T	LDS235B
	2:30 PM - 3:30 PM by appointment*	Th	LDS222
	3:00 PM - 4:00 PM by appointment*	T	LDS235B
	8:00 PM - 9:00 PM	M,W	Online

*You may phone, email or talk to me in person to make an appointment.

Class Meetings:

Day	CRN	Time	Room
Th	80148	9:50 AM - 12:40 PM	LDS 222
Th	80149	1:00 PM - 3:50 PM	LDS 222

Textbook Information:

Text:

MAKING THE CONNECTIONS: A HOW TO GUIDE FOR
ORGANIC CHEM LAB TECHNIQUES (Required)

by PADIAS
2nd Edition
Copyright 2011

Supplies:

You are required to supply your own **safety glasses** for the laboratory. These are available in the campus bookstore but may be purchased elsewhere. Safety glasses **MUST** be worn in the laboratory at all times. ***If necessary, the instructor will deduct points from lab reports for not wearing safety glasses while in the laboratory. You will not be allowed to continue to work in the laboratory without safety glasses or your notebook.***

Evaluation:

Your evaluation in CHEM2411L will be based upon the following components:

Component	points
Laboratory Reports (7 x 100 points each)	700
Laboratory Notebook (9 x 5 points each)	45
Lab Exam (100 points)	100
Total	845

Grading:

The grade you receive in Chemistry 2411L will be based upon the following distribution:

letter grade	percentage range
A	90% or greater
B	80% - 89%

C	70% - 79%
D	60% - 69%
F	< 60%

Mid-term Progress Report

Due to the relatively small number of laboratory reports that will have been returned by mid-term, mid-term grades may not be reported for this course. If a mid-term grade is submitted, it will reflect approximately 30% of the entire course grade. Based upon this grade, students may choose to withdraw from the course and receive a grade of "W." Students pursuing this option must fill out an official withdrawal form, available in the Office of the Registrar, by mid-term, October 6, 2017. Please note that if you withdraw from the laboratory, you must also withdraw from the lecture course.

Tentative Course Schedule*:

Date	Turn in at start of lab	Turn in at end of lab	Lecture Topic/Experiment Title	Required Reading
Aug. 18	Download CHEMDRAW software (required) Bring your computer to lab (required)	Safety Rules (D2L quiz) Liability Waiver CHEMDRAW Activity	Syllabus Introduction to Lab Equipment and Safety CHEMDRAW	pp. 1-44
Aug. 25		No notes today	Exp. #1 - Literature of Organic Chemistry	pp. 45-46
Aug. 31	Exp. #1 Report (due date extended to September 5th)	Exp. #2 Part 1 Lab notes	Exp. #2 Part 1- Melting Points	pp. 47-53 handout
Sept. 7		Exp. #2 Part 2 Lab notes	Exp. #2 Part 2 - Recrystallization	pp. 119-127 handout

Sept . 14	Exp. #2 Report	No notes due	IR Spectroscopy Lecture Exp. #3 Part 1 IR Spectroscopy Lecture and Lab	pp. 65-76 (also Klein, pp. 683-706) handout
Sept . 21		Exp. #3 Part 2 Lab notes	Exp. #3 Part 2 - Extraction	pp. 128-140 handout
Sept . 28	Exp. #3 Report	Exp. #4 Part 1 Lab notes	Chromatography Lecture Exp. #4 Part 1 - Thin Layer Chromatography	pp.162-172 handout
Oct. 5			LAB EXAM	
Oct. 12		Exp. #4 Part 2 Lab notes	Exp. #4 Part 2 - Column Chromatography	p. 172-179 handout
Oct. 19	Exp. #4 Report	Exp. #5 Lab notes	Exp. #5 - Steam Distillation of Essential Oils - Week 1	p. 141-157 handout
Oct 26		No notes today	Mass Spectrometry Lecture Exp. #5 - Steam Distillation of Essential Oils - Week 2	pp. 106-114, 179-187 (also Klein, pp. 707-720)
Nov. 2	Exp. #5 Report	Exp. #7 Lab notes	Exp. #7 – Polarimetry Note - #7 is before #6 on purpose/	p. 56-60 handout
Nov. 9	Exp. #7 Report	Exp. #6 Part 1 Lab notes	Exp. #6 Part 1 - Nucleophilic Substitution of Alkyl halides	handout
Nov. 16		Exp. #6 Part 2 Lab notes	Exp. #6 Part 2 - Dehydration of Alcohols	handout

Nov. 23	No Lab - Thanksgiving		No Lab - Thanksgiving	
Nov 30	Exp. #6 Report		Lab Clean up day	

*The instructor reserves the right to alter the course schedule at any time during the semester.

Important Dates	
Last day to withdraw without academic penalty	October 6th

Course Policies:

Laboratory Reports:

There will be eleven laboratory reports worth 50 points each. Laboratory reports are to be typed using the forms supplied to you at the course website in D2L. These reports are to be typed and structures are to be drawn using CHEMDRAW software.

Laboratory reports are due before the **start of lab class** (unless otherwise stated) on the assigned due dates. Laboratory reports should be turned in the correct dropbox in D2L. Reports turned in after the start of class will be treated as a day late (i.e. grade – 10%). Late reports will have 10% deducted for each school day it is past due. Reports over nine days late will not be accepted. Remember, you work in a group in lab but your lab report is your work. Please do not turn in identical reports. Do not copy.

Pre-Lab Quizzes:

Pre-lab quizzes are to be completed after reading the required reading and the experimental procedure and before the **start of lab class**. Pre-lab quizzes are to be completed in D2L.

Lab Notes:

Lab notes should be submitted in the correct dropbox in D2L within one hour of completing the laboratory experiment. Include as many details about the procedure (in your own words), observations (including pictures if appropriate), and data (with units).

Attendance:

Attendance is required. Students missing a laboratory period will be assigned a grade of zero for assignment done that day. Make up laboratory experiences will be offered at the instructor's convenience and are only available to those students having valid excuses. **Students should contact the instructor via telephone or e-mail within 24 hours of the missed lab to schedule a make up lab.** After that time, no make up labs will be scheduled..

Laboratory Accidents:

Participation in laboratory activities involves an inherent risk of injury. In the event of injury, the student should immediately inform the instructor or laboratory technician who will file an accident report. The injured party will be given first aid through the Campus Public Safety Officer and be referred to the appropriate medical facility for follow-up.

Academic Irregularity:

Cheating in any form will not be tolerated. Consequences may include a zero grade on the assessment instrument, or possible action by the College Judicial Board of Review. Remember, you work in a group in lab but your lab report is your work. Please do not turn in identical reports. Do not copy.

Disruption of the Learning Environment:

Behavior which disrupts the teaching–learning process during class activities will not be tolerated. While a variety of behaviors can be disruptive in a classroom setting, more serious examples include belligerent, abusive, profane, and/or threatening behavior. A student who fails to respond to reasonable faculty direction regarding classroom behavior and/or behavior while participating in classroom activities may be dismissed from class. A student who is dismissed is entitled to due process and will be afforded such rights as soon as possible following dismissal. If found in violation, a student may be administratively withdrawn and may receive a grade of WF. A more detailed description of examples of disruptive behavior and appeal procedures is provided at:

<http://a-s.clayton.edu/DisruptiveClassroomBehavior.htm>

Other Class Policies:

"Students must abide by policies in the [Clayton State University Student Handbook](#), and the [Basic Undergraduate Student Responsibilities](#)."

- Arrive to lab **on time** and **stay until the exercise is complete**.
- No children or visitors are allowed in the Laboratory.
- Turn off phones, radios and other electronic devices.
- No eating, smoking or drinking in the laboratory. No food is allowed in the laboratory.
- No exposed feet or legs.
- Long hair needs to be pulled back to prevent accidents.
- Be aware of all policies and procedures.
- No extra credit work will be assigned.
- **Grades will not be communicated via email or telephone.**
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Last update: September 12, 2011
