CHEM 2412L - Organic Chemistry II Lab
Course Syllabus - Spring 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:

Chemistry 2412L (CRN 20302)
Organic Chemistry Lab II

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 2411 and CHEM 2411L

Course Co-requisite:

Co-requisite: CHEM 2412.

Note: Due to the co-requisite nature of CHEM 2412 and CHEM 2412L, students dropping one of the two courses must also drop the other.

Notebook Computer Requirement:

Each CCSU 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 CCSU'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 not be used in the classroom in this course. Computers will be required to access course materials and to communicate with your instructor.

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.

Program Learning Outcomes:

The content of this course syllabus correlates to education standards established by national and state education governing agencies, accrediting agencies and learned society/ professional education associations. Please refer to the course correlation matrices located at the following web site: http://a-s.clayton.edu/teachered/Standards%20and%20Outcomes.htm

General education outcomes:

The Clayton State University Core Curriculum outcomes (see Area D) are located on pages 107 and 108 of the Academic Catalog and Student Handbook.

Chemistry Outcomes:

CHEM 2412L is a required course in the B.S. degree in chemistry. CHEM 2412L 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 2412L is a required course in the B.S. degree in biology. CHEM 2412L 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:

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On Campus Office hours:	1:00 PM – 3:00 PM	M
	8:40 AM – 9:40 AM	T,Th
	12:40 PM – 2:40 PM	Th

Class Meetings:

CRN	Days	Times	Room
20302	T	12:40 PM - 3:30 PM	LDS 222

Textbook Information:

Text:

Making the Connections: A How-To Guide for Organic Chemistry Lab Techniques by Anne B. Padias, 1st Ed.,

Supplies:

You are required to supply your own **safety glasses** for the laboratory. These are available in the campus book store 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 CHEM 2412L will be based upon the following components:

Component		points
Laboratory Reports	5 x 100pts.	500
Laboratory Notebook	7 x 10pts.	35
Lab Exam	1 x 100pts.	100
Total		635

Grading:

The grade you receive in Chemistry 2412L 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%

Tentative Course Schedule*:

Date	Due at the start of lab	Due at the end of lab	Experiment	Pages
Jan 10	Intro		Introduction to Lab, Syllabus, Safety Lec.	
Jan 17	Safety Rules Liability Waiver		Experiment 1 Week 1: NMR Spectroscopy and Structure Determination - Lecture	p. 75-93
Jan 24	Spectral analysis worksheet due		Experiment 1 Week 2: NMR Spectroscopy and Structure Determination - Problems	p. 75-93
Jan 31	Exp. #1-Part 1 Report	Exp. #1 – Part 2 notes	Exp. #1 Part 2 - NMR Experiment	
Feb 7	Exp. #1 – Part 2 Report	Exp. #2 Week 1 notes	Experiment 2 Week 1: Properties of Hydrocarbons	handout
Feb 14		Exp. #2 Week 2 notes	Experiment 2 Week 2: Properties of Alcohols	handout
Feb 21	Exp. #2 Report		Experiment 3 Week 1: The Grignard Reaction	handout
Feb. 28		Exp. #3 notes	Experiment 3 Week 2: The Grignard Reaction continued plus MP, FTIR and GC/MS of product	
March 7			Spring Break	
March 14	Exp. #3 Report		NMR Lab Exam	
March 21		Exp. #4 Week 1 notes	Experiment 4 Week 1: Properties of Aldehydes, and Ketones	handout
March 28		Exp. #4 Week 2 notes	Experiment 4 Week 2: Esterification Reaction	handout
April 4	Exp. #4 Report		Study Day	
April 11			Experiment 5 Week 1: Qualitative Organic Analysis	handout
April 18		Exp. #5 notes	Experiment 5 Week 2: Qualitative Organic Analysis continued	handout
April 25	Exp. #5 Report		Lab Clean up and check out	

***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	**March 3rd**
Last day of classes	**May 1st**

Course Policies:

Laboratory Report:

There will be five laboratory reports worth 100 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/reactions must be drawn using CHEMDRAW, a chemical drawing program. Reports are to be turned in using the appropriate Dropbox at the class D2L site. Laboratory reports are due before the **start of class** (unless otherwise stated) on the assigned due dates. 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.

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.

Disruption of the Learning Environment:

Behavior which disrupts the teaching–learning process during class activities will not 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.
- Be aware of all policies and procedures.
- No extra credit work will be assigned.
- **Grades will not be communicated via email or telephone.**

Last update: June 18, 2011
