

**CHM 265 / ORGANIC CHEMISTRY LAB I
SCHEDULE AND GENERAL INFORMATION**

FALL 2011

Instructor:

Dr. Catherine C. Neto, Associate Professor, Dept. of Chemistry and Biochemistry
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Office hours: Monday 1 - 2 pm, Tuesday 12 - 1 pm, Wednesday, 11 - 12 (or by appointment)
Lecture meets: Tuesdays, 8 - 8:50 AM, SENG 305. Attendance is **mandatory**.
Lab L1: Tuesdays, 9:00 AM - 12:00 noon **Lab L2:** Tuesdays, 1:00 - 4:00 PM, SENG 315

Teaching Assistant:

Brian Pereira, [u_b2pereira@umassd.edu](mailto:b2pereira@umassd.edu); Office: SENG-301
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Required books and supplies:

Textbook: Williamson, K. L. Macroscale and Microscale Organic Experiments, UMD custom edition (5th edition also OK)
Lab Manual -- UMD (this will be supplied to you)
Quadrille ruled research notebook (with carbon pages)
Safety glasses (required by state law)

Prerequisites: You must have passed the following courses: CHM155/156 or 151/152, and CHM163/164 or CHM161/162. Equivalent courses will be considered for transfer students.

Co-requisite: You must be enrolled in CHM251 or have already passed an equivalent organic chemistry lecture course. Those students not meeting the requirements cannot remain enrolled.

About this course:

Organic Chemistry Lab I is designed to introduce you to the techniques organic chemists use to separate, purify, analyze and identify the compounds you'll be learning about in CHM251 and to introduce some synthetic reactions. The second semester lab (CHM266) is a series of projects in synthesis, natural products chemistry and organic qualitative analysis which employ common organic reactions that you will learn about in CHM251/252. In CHM266 and in your future life as a chemist you will rely on the techniques that you have mastered this semester.

Each weekly session will include a 50-minute pre-lab lecture on the experiment to be performed and the theory behind the methods used, followed by a three-hour session in the laboratory. **Attendance at each pre-lab and each laboratory session is mandatory; no student who misses prelab will be allowed to perform the lab that day.** For reasons of safety and efficiency, you are expected to come to lab each week prepared, having read the material for the unit in the lab manual and textbook. Preparedness will greatly increase your chances for a successful experiment. From time to time there may be a need to contact you about scheduling and assignments, so each student should give me an email address that you use regularly, and **check your email the day before lab for messages.** You may email me with questions anytime.

You should bring your lab notebook and safety glasses each week and observe good safety practices at all times, including the proper disposal of waste. You will observe a safety film the first week of class and be responsible for abiding by the safety guidelines outlined on the attached pages. You will also be assigned your own drawer in the lab containing equipment that you will personally take responsibility for this semester. The drawers will be locked when lab is over and no other student should have access to your drawer. Shared equipment in the microscale kits and the cabinets must be returned clean and to the proper place at the end of lab.

SCHEDULE OF EXPERIMENTS

Date	Unit	Experiment	Lab Report Due
Sept. 13 th		Introduction, drawer check-in, view safety film	
Sept. 13 th	1	Extraction and Recrystallization: Isolating Components from a Mixture	
Sept. 20 th	1	Extraction and Recrystallization: Melting Points and Purity	
Sept. 27 th	2	Distillation and GC Analysis of a Mixture: Simple Distillation (Formal report)	Unit 1 formal report due
Oct. 4 th	2	Distillation and GC Analysis of a Mixture: Fractional Distillation	
Oct. 11 th		No lab, Monday schedule	
Oct. 18 th	3	Thin-Layer Chromatography of Analgesics Quiz #1	Unit 2 formal report due
Oct. 25 th	4	Column Chromatography of a Mixture and Analysis by TLC & HPLC (Formal Report)	
Nov. 1 st	4	Finish Column Chromatography & Analysis	Unit 3 short form due
Nov. 8 th	5	Dehydration of an Alcohol & GC Analysis of Reaction Products (Formal Report) Quiz #2	Unit 4 formal report due
Nov. 15 th	5/6	Enantiomers & Optical Rotation (set-up) Finish Unit 5	
Nov. 22 nd	6	Enantiomers & Optical Rotation (measurement)	Unit 5 formal report due
Nov. 29 th	7	Diels-Alder Reaction: Preparation on a Macroscale; Quiz #3	Unit 6 short form due
Dec. 6 th	8	Introduction to Spectroscopy: IR Complete Unit 8 short form in class	Unit 7 short form due
Dec. 13 th		Check out and Quiz #4 will be given	All lab reports due by today.

GRADING POLICY

Course grades are calculated on the basis of lab reports, quizzes, notebook/work habits as broken down below.

Plagiarism and cheating will not be tolerated. See the University policy on academic integrity and dishonesty at: <http://www.umassd.edu/studenthandbook/academicregs/ethicalstandards.cfm>

Breakdown of grades:

Lab Reports (60%)

Each student must submit individual lab reports for every experiment. Lab reports should be well-organized and follow the format provided in the attached guidelines. You are expected to turn in individual, original work - plagiarism or "group effort" on reports will not be tolerated. Reports should be written up primarily by word-processing program, although you may leave space to hand-write chemical structures/equations if you are not proficient with ChemDraw, ACD ChemsSketch or other such programs. There will be four formal lab reports assigned over the semester; the remaining reports will use a short format.

Reports must be turned in on the specified due dates to receive full credit. Late reports will have points deducted from a possible 100 pts as follows: Up to 1 week late = - 5 points; 1 - 2 weeks late = - 10 pts; over 2 weeks late = -20 points. Reports will not be accepted after 3 weeks past due; the report grade will be zero. The last day to withdraw from the course is November 13th. If no reports are turned in by this date you will be advised to withdraw. If you anticipate a problem getting a report in on time, speak with me about it.

Reports will be graded on the following aspects:

- 1) **Accuracy** and **quality** of results: yield and purity of product for preparative labs; completeness of data and technique for non-preparative labs
- 2) Understanding of the **purpose** of the experiment
- 3) Accuracy and completeness of procedure, especially any changes made
- 4) **Organization** of data
- 5) **Calculations** (all calculations must be shown, including equations used)
- 6) Inclusion of correct **chemical equations** and **structures** for all reactions performed or compounds tested, mechanisms should be given when discussed in prelab lecture
- 7) A discussion which demonstrates student's **understanding** of the lab and **thoughtful** conclusions about your results
- 8) Answers to the **questions** assigned in the manual. These also demonstrate your comprehension of the chemistry behind each experiment.

Quizzes (30%)

There will be **four quizzes given** over the semester. The best three of the four quiz grades will count toward your final course grade. There are no make-up quizzes; a missed quiz will be your dropped quiz grade. Quizzes will cover material from the textbook, handouts and prelab lectures. I will announce beforehand the topics/experiments covered on each quiz.

Lab Notebook and Work Habits (10%)

You are expected to keep a **detailed account of what you do** in the laboratory in a research notebook, since these accounts will be used to write your lab reports. All data must be recorded in the notebook. The proper way to keep a lab notebook is described in the attached guidelines. You should come to each session having read the references for the experiment, and the title and chemical equations or structures (but no procedure) should be written in your notebook before starting. Your T.A. will check over your notebook pages. It's OK to use a notebook from last year as long as it is the correct type of notebook and there's enough pages left.

10% of your total grade will be based subjectively on:

- The completeness and organization of notebook entries. Be thorough and organized.
- Cleanup of work area. Points will be deducted for any lab bench area or equipment which has not been cleaned up at the end of the day, at our discretion.
- Proper laboratory practice including waste disposal and use of safety glasses.
- Attendance and punctuality. Students who repeatedly arrive late for prelab or miss lab sessions without a valid excuse will lose credit in this portion of the grade.

Policy on course withdrawal:

Because the Organic lab and lecture material are closely related, **students must remain enrolled in CHM251 at least through mid-semester to remain enrolled in CHM265**. If you withdraw from the lecture course earlier than October 26th, you will also need to withdraw from lab. If you are struggling with either class and considering withdrawing, please speak to your instructors about the situation. The last day to withdraw from either CHM251 or CHM265 is November 16th.

Policy on Incompletes:

A grade of incomplete will only be given to students who have completed at least 75% of the work required for this course. Students who have **more than two outstanding lab reports** at the end of the semester will NOT be eligible for an incomplete, and will receive the calculated grade.