Chem 445L Spring 2016

Laboratory for Synthesis and Analysis of Organic Compounds

Course meetings:	Section 1: Monday	12:30 -5:20 pm	Bilger Addition 217
	Section 2: Thursday	12:00 - 5:00 pm	Bilger Addition 217
Teaching Assistants:	David Gilles	dgilles@hawaii.edu	
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Instructor:	P. Williams	philipwi@hawaii.edu	
	Bilger 245A	808-956-5720	

Office hours by appointment.

Course Objective: The objective of Chemistry 445L is for students to develop a broader practical understanding of modern techniques and instrumentation used in a synthetic organic chemistry laboratory. CHEM 445L has WI classification, so expect to do a fair amount of writing, to have this writing critiqued and to revise your write-ups on the basis of that feedback before a final grade is assigned to your report. In keeping with the rules governing the assignment of the "WI" designation, the writing part of this course will earn you a significant portion of the final grade of the lab course. The purpose is to teach you to write technical reports accurately, concisely and to communicate your findings clearly. Shoddily produced documents, ridden with spelling and grammatical errors, will be returned without review (Note that scientific terms often are underlined in red by MS Word despite being spelt correctly).

Prerequisites: Chem 273 and Chem 273L; Declared Chemistry or Biochemistry Major

Corequisites: Chem 445

Grading:

2 Lab Reports (Chemical Literature/Characte rization)	**= 140 points**
Progress Draft – Multistep Synthesis	**= 100 points**
Final Lab Report - Multistep Synthesis	**= 200 points**
General Lab Techniques	**= 200 points**

One of the first two lab reports and the progress draft of the multistep synthesis may be reworked, and if the resubmitted report meets the critique then the score may increase up to 20 points for each. (Note: it does not pay to submit a lousy first draft). The first two reports and the progress draft should each be a minimum of five pages long (12 point, double spaced, standard 1 inch margins) excluding figures and supplementary materials and attachments. All reports should contain the fruits of your reading about the techniques used and by fully referenced. Failure to reference appropriately is plagiarism and will result in an automatic “F” in the course.

A report on the multi-step synthesis you will be performing (@ 200 points). This report should be about 10 pages long excluding supplementary materials and attachments. In this paper, you will document the characterization of the materials you have prepared and interpret the data to prove to me, the reader, that you have made the compounds you claim you made. The goal here is to be both succinct and comprehensive.

The remainder of the points (200 points) will be assessed based on:

1) level of preparation for the lab
2) effort and attitude
3) success in your laboratory work (yield, purity, number of times a reaction has to be repeated).

Writing Intensive: Attached to this syllabus is a "writing rubric" that will be used to evaluate the reports you will be submitting.

The general format for a full paper in Journal of Organic Chemistry is to be followed. A laboratory report has a brief *Introduction* into the problem you have been studying; a *Results* section in which you document your measurements and calculations; a *Discussion* section in which you document what you have learned from performing the experiment and place your results into the context of the background materials you have read; an *Experimental* section in which you describe how you performed the experiments in sufficient detail that somebody could reproduce your results. *Figures* are referenced in the text in order of appearance and figures have *Legends*, brief descriptions of what the figure is purported to show. Explain any symbols used. *Schemes* are similarly numbered in order of appearance in the text and have brief *Headers*, brief descriptions of what the scheme is about. *References* point the reader to material that you have consulted. References are numbered consecutively in the text. Use a consistent format: denote references by superscript numbers. In a separate reference section list these references. Please follow American Chemical Society format outlined in the ACS style guide (e.g., Clueless, I. M.; Knownot, I. M. *J. Irreproduc. Res.* **2009**, *10*, 176-178.)

Code of Conduct: Academic honesty policies can be found at the following website: http://www.studentaffairs.manoa.hawaii.edu/policies/ . Students are expected to familiarize themselves with these rules. ***Any student caught violating the policies on plagiarism or cheating will receive a grade of an "F" in the course.***

Disabilities: The University of Hawaii is an equal opportunity/affirmative action institution, dedicated to teaching all students and reaching all learners. It is our commitment to make our lectures and classrooms accessible to all students. If you have, or think you might have, a disability and have not voluntarily disclosed its nature and the support you need, you are invited to contact the UH KOKUA Program (http://www.hawaii.edu/kokua/ or (808) 956-7511), or talk with the instructor in order to get any accommodation you might need to take the course. This information will be kept confidential. Please do this as early in the course as possible.

Chem 445L Schedule Spring 2015

Lab	Section 1- Monday	Section 2- Thursday	Comments
Check-In & Safety Lecture	11-Jan	14-Jan	
Chemical Characterization	25-Jan	21-Jan	Holiday: Jan 18th
Unknown Determination	1-Feb	28-Jan	
Chemical Literature Assignment	8-Feb	4-Feb	Unknown lab report due
No labs	15-Feb	11-Feb	Holiday on Feb 15
Synthesis	22-Feb	18-Feb	Literature Assignment Due
Synthesis	1-Mar	25-Feb	
Synthesis	8-Mar	4-Mar	
Synthesis	15-Mar	11-Mar	
No labs	22-Mar	18-Mar	March 21-25 - Spring Break
Synthesis	29-Mar	25-Mar	
Synthesis	5-Apr	1-Apr	Draft Due
Synthesis	12-Apr	8-Apr	
Synthesis	19-Apr	15-Apr	
Synthesis - Checkout	26-Apr	22-Apr	Final Report Due May 4th