Chemistry 36H: Organic Chemistry Lab, Honors Option
Spring 2007

Course Times:
Section 1: Mon/Wed 1:25 – 4:25 pm  TA: Ron Davis
Section 2: Tues/Thurs 1:25 – 4:25 pm  TA: Chris Morgan

Course Location:  215 Whitmore Lab, Desks 60 – 76

Faculty in charge:
Dr. Katie Masters
Director, Organic Chemistry Labs
Office: 218 Whitmore
Phone: 863-3319
Email: kmasters@psu.edu
Office Hours: Wed 3 to 5 pm

Dr. Jackie Bortiatynski
Director of Instrumentation
211D Whitmore
865-2772
jackie@chem.psu.edu

Course Website:  http://courses.chem.psu.edu/chem36, click on 36H link

Required Materials:
3. Eye Protection - Eye Protection is required at all times in the Organic Laboratory! See Information on Eye Protection in Chapter 2
4. Organic Lab Equipment Kit of expendable items including 2 NMR tubes, 15 TLC plates, 12 vials, etc. This kit is available at the Penn State Bookstore.
5. Combination or key lock

If you wear shorts or a top that exposes your midriff, you must purchase and wear a plastic lab apron to protect your midriff and legs. You CANNOT wear open-toe shoes in the lab!

Course Objective: To learn and master fundamental organic chemistry laboratory techniques, to perform synthetic reactions, work-ups, and purifications, to learn how to operate instrumentation and analyze spectral data, learn and use a molecular modeling program, and to write original lab reports in a professional manner.

Registrar Dates:
Late Registration & Drop/Add: Ends January 30th
Late Drop Deadline: Ends April 13th

Catch-Up Day Policy: If you are not able to attend a lab for an excusable reason (e.g. sickness, family emergency), you can use the Catch-Up day to make up any missed lab work. The final report will be due one week after that Catch-Up day if the original due date was before this.
Lab Assignments:
The curriculum during the first half of the semester focuses on introducing experiments that involve mastering certain techniques that are needed for performing organic chemistry synthetic reactions. Once these techniques are learned, synthetic experiments will be assigned and carried out.

Technique Experiments (PreLabs & Final Reports):
- Recrystallization & Melting Point of an Unknown* (Chapter 4 of Lab Guide)
- Extraction (Chapter 5 of Lab Guide)
- Distillation & Boiling Point (Chapter 6 of Lab Guide)
- Thin-Layer Chromatography (Chapter 7 of Lab Guide)
- Salicylic Acid Chemistry: Synthesis & Column Chromatography (Website download)

*PreLab and Final Report do not count towards final grade; they serve as practice, but are mandatory.

Synthetic Experiments (Experimental Outlines & ACS-Style Final Reports):
- Two Synthetic Reaction Experiments of Your Choice (pick from website)
- Team Project: Proposal, Synthesis, and Poster Presentation (see website for details)

Spectral Unknown (Only Final Report): Determine the structure of an unknown compound using spectroscopy (Chapter 12 of Lab Guide)

Quizzes/Exam:
- Quiz 1: Recrystallization/MP (50 points)
- Quiz 2: Extraction (50 points)
- Quiz 3: Distillation/BP (50 points)
- Quiz 4: Thin-Layer Chromatography (50 points)
- Quiz 5: Column Chromatography & Salicylic Acid Reactions (50 points)
- Final Exam: Comprehensive – Lab Techniques/Concepts, Synthesis, Spectroscopy (100 points)

Article Review: A two-page, computer generated, double-spaced summary on the “Chemical Highlights of 2006” publication published by ACS in the December 18, 2006 issue of *Chemical & Engineering News* (see the ACS website to download article). Indicate what interested you most and why. (50 points)

Molecular Modeling (Spartan) Tutorial Worksheet: Learn the basics of Spartan Molecular Modeling (20 points)

TA Evaluation Points:
Your TA will also evaluate your laboratory performance; this evaluation is worth 100 points. The TAs are asked to consider your attitude towards work and others, work ethic, technical skill, independence, and overall ability. (100 points)

Report Writing:
Technique Experiments: You will be required to write a PreLab and Final Report for each of the technique experiments. Details on how to write these reports are given in Chapter 3 of the Lab Guide. Each PreLab is worth 30 points, and each Final Report is worth 100 points. Please go to the Chem 36H website to download the PreLab grade sheets.

Synthetic Experiments & Team Project: You will be required to write Experimental Outlines and ACS-style Final Reports for the synthetic and team project experiments. Information on these formats can be found on the course website; access the 36H supplemental link. Each Experimental Outline is worth 30 points, and each ACS-style Final Report is worth 100 points. Grade sheets for all assignments are found on the course website; go to the 36H link.
Points:
Techniques Experiments: 4 PreLabs & 4 Final Reports = 520 pts
Synthetic Experiments: 2 Experimental Outlines & 2 ACS-Style Final Reports = 260 pts
Team Project Proposal: 100 pts
Team Project Experiment: Experimental Outline & ACS-Style Final Report = 130 pts
Team Project Poster: 100 pts
Spectral Unknown Final Report: 100 pts
Quizzes: 250 pts
Final Exam: 100 pts
Article Review: 50 pts
Molecular Modeling Tutorial Worksheet: 20 pts
TA Evaluation: 100 pts
Total Points: 1730 Points

Academic Dishonesty

Academic dishonesty includes, but is not limited to, the following situations:
- Giving your electronic file of your final report to another current student or future student via e-mail, flash drive, CD, etc.
- Using someone else’s data unless instructed to do so.
- Not citing other students when instructed to collect other student’s data.
- Fabricating data.
- Using phrases or sentences directly from the lab guide or any other source (book, journal, or website) and not referencing that source or not using quotes.
- Using phrases or sentences directly from this lab guide or any other source (book, journal, or website), referencing that source, but not using quotes.

If you are found to be involved with academic dishonesty on a final report, you will be given a zero for that report. The second offense will involve receiving an F or an XF for the course.

Please see Chapter 1, Section 1.6 for a detailed discussion on academic dishonesty.