Chemistry 36B Spring 2006

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Office Hours by Appointment

M/W, 36.1   1:25 - 4:25 pm 216 Whitmore Lab
TA: Dan Landfried

T/Th, ,36.2  1:25 - 4:25 pm 216 Whitmore Lab
TA: Johannes Belmar
Staff Assistant, Karen Heichel  863-3261
Supervisor of Trade Services, Michele Brown  865-7483
Required Materials


Organic Chemistry Laboratory Notebook - 8.5" x 11" white quadrille sheets with 120 tear-out and carbonless carbon pages, published by Hayden McNeil.

Eye Protection - Eye Protection is required at all times in the Organic Laboratory! See Information on Eye Protection in Chapter 2

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.

Combination or key lock, Lab apron optional, Gloves are supplied
Always use eye protection while inside a chemistry laboratory.

Use gloves at critical times, wash hands often.

Reactions must be run in the Hoods. (*TA will tell you when you can work on the bench*)

Your TA **must** be present when you are in the lab,

**NO ONE WORKS UNSUPERVISED**
LAB SAFETY RULES

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!

**No** open flames in the lab unless directed otherwise.

Report accidents immediately.
Handling of Chemical Waste

Chapter 2, Lab Guide

"The entire procedure of waste disposal starts with the laboratory worker....

Prudent Practices for Disposal of Chemicals from Laboratories
Important Safety Rules

The Eight-Fold Way:

*Down the Drain (D)*
*Nonhalogenated Organics (NHO)*
*Halogenated Organics (HO)*
*Heavy or Hazardous Metals (HM)*
Important Safety Rules

The Eight-Fold Way: (Continued)

*Waste Bin (WB)*

*Sharps*

*Glass Bins*

*Recycle/Reuse*
Courtesy in the Laboratory

For a safer and more pleasant laboratory atmosphere:

Return all reagent and solvent bottles to their proper place on the side shelves or in the refrigerator immediately! *

Keep your area clean.*

Show up prepared and on time.

Clean up spills!*
Courtesy in the Laboratory

Replace caps; get empty bottles refilled.*
Keep the instrument room clean and neat.
Avoid floods.
Keep balances clean!!!! *
Dispose of chemicals in the proper containers.

*General Lab Clean-Up will be assigned to one student at the end of each lab.
Course Goals

To build a bridge between chemical and biological processes and understand the reactions that govern them.

To understand what organic chemists really do and bring reality to "paper chemistry"
Course Goals

To practice making and recording experimental observations.

To learn how to translate a set of instructions into successful action.
Course Goals

To be creative while having the pleasure of making something, not just measuring something.

To develop research skills by carrying out a group research project.
Grading

Technique Experiments:
- Recrystallization/Melting Points 5 Bonus Points (if exceptional)
- Distillation/Boiling Points 150 points (50 points Prelab)
- Liquid/Liquid Extraction 150 points (50 points Prelab)
- Thin-Layer Chromatography 300 points (50 points Prelab)
- Column Chromatography 150 points (50 points Prelab)

Project Assignment
- Article Review 50 points
- Proposal 100 points
- Thought Questions 100 points (25 points each)
- Poster Presentation 200 points
- Progress Reports 100 points (50 points each)
- Final Report 300 points

Technique Quizzes 250 points
Final Exam 100 points
Spectral Unknown 100 points
TA Evaluation 100 points
Peer Evaluation 50 points

Total Points 2200 points
### Course Grade

We will follow all the grading policies listed in Chapter 1.3 of the Lab Guide. The Breakdown of points will **not** be the same as Chem 36.

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#### Break Down of Points for Chem 36B

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technique Experiments:</td>
<td>45%</td>
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<tr>
<td>Project Assignments:</td>
<td>39%</td>
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<tr>
<td>Spectral Unknown:</td>
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<tr>
<td>Final Exam</td>
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<tr>
<td>TA Evaluation</td>
<td>4.5%</td>
</tr>
<tr>
<td>Group Evaluation</td>
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</tbody>
</table>
Grading Sheets

Technique Lab Grading Sheets are located on the web @
courses.chem.psu.edu/chem36/Chem36B.html.

You will be not be using the grading sheets in your Lab Notebook
Spectral Unknown "Homework"  
Chapter 10 Lab Guide

Begin Today!

No PreLab

Don't waste solid unknown - take a mp [Ch 4]  Write structures of possible matches from Unknown list on Chem 36 Web page:

http://courses.chem.psu.edu/chem36

Obtain NMR spectrum [Ch 11.6]

!!! Sign up soon !!!

!!! Make-up sample during lab!!!
“Spectral Unknown "Homework”

Obtain IR spectrum [Ch 11.4]
  !!! Sign up soon !!!
  !!! Make-up sample during lab!!!

Progress Check with IR or NMR and unknown possibilities due in 12th Lab

Then take IR, NMR and "best guesses" to TA who will initial MS Analysis Request Form → MS spectrum [Ch. 11.5] - "should nail" identification

Group Research Projects

You have been divided into 4 research groups. Each group will be given a research project that will be carried out during the second half of the semester. The project is bioorganic in nature and requires the groups to do the following:

1. Carry Out a Literature Review
2. Write a Proposal
3. Carry Out the Proposed Experiments
4. Create a Poster Presentation of the Project
5. Write a Final Report on the Project
Quizzes/Thought Questions/Final Exam

There is a Quiz for every technique experiment. The quiz will be given the same lab period as the prelab is due. You must take the quiz before beginning the lab so be on time!

There will be 4 Thought Question Quizzes given during the project portion of the course.

A Final Exam will be given the last day of lab prior to check out.
Next Lab Period

Come to lab with required materials including PreLab for the Recrystallization./MP Experiment.

Need Aldrich Catalog

Have your Lab Instructor initial and date your Lab Notebook before leaving (do this each at the end of each lab period.)