Welcome to organic lab!!

A strong foundation in organic laboratory skills is provided in this course. Laboratory work includes learning the basic techniques—recrystallization/melting point determination, distillation, liquid/liquid extraction, thin layer chromatography and column chromatography. Mastery of these basic techniques lays the foundation for carrying out a number of organic syntheses or natural product isolations. Students will have access to modern instrumentation for the characterization of synthetic products or organic unknowns. Students will have access to modern instrumentation for the characterization of synthetic products or organic unknowns. Standard analysis methods include IR, NMR, UV/Vis spectroscopy, mass spectrometry, polarimetry, HPLC, GC and GC-MS. CHEM 210 is a prerequisite and CHEM 212 a corequisite for this course.


Notebook: A bound notebook is required—available from the bookstore, it must make a carbon-copy of your in-class write-up.

Goggles: Goggles or safety glasses with side-shields are acceptable. Protective clothing is strongly recommended.

Instructors
Mrs. Tracy A. Halmi
MW 2:30 - 5:15 PM
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tracey@psu.edu
898-6045
chemistry.bd.psu.edu/halmi/chem-213.html

Office Hours: M & F 10:10-11:00 AM; W 10:10 - 12:00 PM & by appointment.

Dr. Natalie L Mikita
TR 8:00-11:00 AM
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898-6895

Office hours: MW 9:00-11:00 AM, T 11:00 AM-12:00 PM & by appointment.

Dr. Michael W. Justik
TR 11:15 AM - 2:00 PM
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Office Hours: MWF 9:00-10:00 AM & by appointment.

Course Description

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Graduation and Course Policies

Point distribution:

Reports: 625 pts
Performance: 50 pts
Total: 675 pts

Final Grade Scale: 93-100%, A; 90-92% A-; 87-89% B+; 83-86% B; 80-82% B-; 75-79% C+; 70-74% C; 60-69% D; <60% F.

Late Reports: A 5 point per day deduction is assessed on all late reports.

Check-Out: Failure to check-out of a CHEM 213 laboratory drawer will be penalized with 50 point deduction and a $25 check-out lab fee. You will also be responsible for the cost of any broken or missing items. This fee will be accessed on your student account even if you drop or withdraw from the course.
Other Course Policies

Academic Dishonesty

Succeeding in CHEM 213 is dependent upon students learning from the textbook, the instructor, but also from each other. Working individually, with a partner or in groups may be required throughout the semester. Working in groups and helping each other is strongly encouraged; however, we strongly believe that students understand the fine line between collaborating and plagiarizing. Please do not cheat. This means students should not share data and/or final reports. Penn State Erie puts a very high value on academic integrity, and violations are not tolerated. Academic integrity is one of Penn State’s four principles to which all students must abide. Any violation of academic integrity will receive academic and possible disciplinary sanctions, including the possible awarding of an XF grade that is recorded on the transcript and states that failure of the course was due to an act of academic dishonesty. All acts of academic dishonest are recorded so repeat offenders can be sanctioned accordingly. More information on academic integrity can be found at:

http://psbehrend.psu.edu/intranet/faculty-resources/academic-integrity

Students with Disabilities

Penn State welcomes students with disabilities into the University’s educational programs. If you have a disability-related need for modifications or reasonable accommodations in this course, contact the Disability Specialist in the Office of Student Affairs, Room 1, Reed Union Building, 898-6111.

Lab Schedule

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<th>Week of</th>
<th>Monday/Tuesday</th>
<th>Wednesday/Thursday</th>
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<tr>
<td></td>
<td>Experiment</td>
<td>Report Due (points)</td>
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<tr>
<td>Jan 12</td>
<td>Check-in/Safety Lecture</td>
<td>Exp 33</td>
</tr>
<tr>
<td>Jan 19</td>
<td>NO LABS</td>
<td>Exp 15</td>
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<td>Jan 26</td>
<td>Exp 9</td>
<td>Exp 4</td>
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<tr>
<td>Feb 2</td>
<td>Exp 32</td>
<td>Exp 32 cont.</td>
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<td>Exp 23</td>
<td>Exp 23 cont.</td>
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<tr>
<td>Feb 16</td>
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<tr>
<td>Feb 23</td>
<td>Exp 22</td>
<td>Exp 22 cont.</td>
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<tr>
<td>Mar 2</td>
<td>Exp 40</td>
<td>Exp 40 cont.</td>
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<td>Mar 9</td>
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<tr>
<td>Mar 16</td>
<td>Exp 30</td>
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<td>Mar 23</td>
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<td>Apr 27</td>
<td>Exp 56 cont.</td>
<td>Check-Out</td>
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Spring Break
Experiments

Pre-Lab Assignments

Please read Appendix II-V in the textbook (pg. 912-923).

- You are required to read the assigned experiment prior to that lab period.
- You are required to read the "Operations" sections in the text associated with your experiment (i.e. OP-10 Mixing).
- Prepare a written pre-lab assignment in your lab notebook according to the instructions in the text (pg. 912). Assume all experiments are performed "Standard Scale" unless otherwise indicated.
- Perform all "Before You Begin" exercises for that experiment.
- You need to be aware of what you need to do to start an experiment when you arrive in lab. You should have a list of the glassware you need to obtain from your drawer and the chemicals you are required to measure out.
- A helpful guide to identifying laboratory glassware is in the textbook (pg. 908-911).
- If the pre-lab is missing or incomplete you will not be permitted to start the experiment.

During the Experiment

- Remember a laboratory notebook is just that, a notebook. You wouldn't take detailed lecture notes after leaving the lecture hall, do not do so in lab. It is a 'habit' that you need to form. You need to tell yourself consistently through the first few experiments to take notes after every step is accomplished. Do not write data on backs of handouts, post-it notes or any other secondary means ~ all original data goes directly into the notebook!
- We require notebooks to be written in a non-first person format. Do not use personal pronouns such as "I", "my", etc.
- All calculations must be in the notebook! The textbook has a detailed reminder (from general chemistry) on how to do the stoichiometry calculations required for most organic experiments (Appendix IV, pg. 918-922).
- Honesty is required in the notebooks and data-keeping. We are preparing you for a career as a professional in the sciences. This is one reason why notes must be directly written in a notebook and all errors crossed out with a single line. In academia or in industry laboratory notebooks are legal documents and are often audited for accuracy and completeness. For safety reasons they are used to trace where accidents occurred and what the individual was doing at the time of the incident. This information can be vital in assisting the individual (if they are not conscious) and in preventing a repeat of the accident.
- Neatness is required in the notebooks. As stated above the notebooks purpose is to communicate what you have done, more often than not, to someone else. Points will be deducted from your notebooks if they are not organized and legible.
- Safety is required in the lab. Failure to follow safety rules will result in point deductions or expulsion from the lab.
- Cleanliness is required in the laboratory. We are especially proud of our new state-of-the-art laboratory facilities and would like to keep them as neat and clean for future students as the are for you.
  - You are responsible for keeping your glassware clean and your drawer free of loose solids and liquid stains.
  - Your hood location must be clean and wiped down after every experiment. All hoses, bowls, and clamps must be put back in their storage areas when you finish your experiment. Hotplates may be left out at the instructors discretion if they still need to cool down. The thick vacuum hose on the aspirator may be left in place.
  - All waste must be disposed of per the instructions from your instructor. Do not let old products and unknowns collect in your drawer!
  - You will be assigned cleaning duties in the lab.
- Failure to keep the lab as you found it will result in point deductions.

After the Experiment

- Complete the Calculations, Results, Discussion, Conclusions and Exercises sections of the “Writing A Laboratory Report” in your notebook (Appendix III, pg. 913-914, #4-8). Only complete the assigned exercises on the previous page.
- Tear out the perforated pages of your notebook for turn-in on the specified due date. Late reports will receive a 5 pt. deduction per day late.
- Any raw data (IR spectra, GC chromatograms, etc.) should be attached at the end.