Organic Chemistry II Lab syllabus

Instructor
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Teaching assistants
- Eric John, eric.john@umconnect.umt.edu
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- Jiyu Sun, jiyu.sun@umconnect.umt.edu
  - Office hours Thur 9-10 and by appointment; https://umontana.zoom.us/j/2778445030

Purpose
- Perform standard organic chemical reactions
- Use organic purification techniques
- Gain expertise in organic spectroscopy
- Practice scientific writing
- Develop a knowledge and understanding of the world at the molecular level

Requisites
- CHMY 222
- CHMY 223 is a pre- or corequisite

Requirements
- A bound notebook of any type
- Splash-protection safety goggles

Optional reading

Format
- Each section has two hours of lab 2x a week
- A mini-lecture on procedures, methods, and safety will occur in lab as needed
- Class time will be spent in the labs located in Clapp Building (CHCB) 213 or 217

Disabilities
- Any student with a disability that may hinder a full demonstration of their abilities in this course should contact Prof. Priestley during the first week of classes to discuss accommodations necessary to ensure full participation and facilitate your educational opportunities

Legal notice
- The course syllabus and other documents pertaining to grading and scheduling are not a contract; they are tentative outlines for the course
- Changes may be made during the semester at the discretion of Prof. Priestley
Academic misconduct
- All students must practice academic honesty
- Academic misconduct is subject to an academic penalty by the course instructor and a disciplinary sanction by the University of Montana
- All students must be familiar with the Student Conduct Code

Grading
- Point distributions and percentages of total points are:

<table>
<thead>
<tr>
<th>Point breakdown</th>
<th>Points</th>
<th>% of total points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Lab reports @ 70 points each</td>
<td>420</td>
<td>90 %-100 %</td>
<td>A-, A</td>
</tr>
<tr>
<td>6 Moodle Pre-lab quizzes @ 25 points each</td>
<td>150</td>
<td>80 %-89 %</td>
<td>B-, B, B+</td>
</tr>
<tr>
<td>Lab participation/notes for 6 labs @ 15 points each lab</td>
<td>90</td>
<td>70 %-79 %</td>
<td>C-, C, C+</td>
</tr>
<tr>
<td>Pre-Lab notebook for 6 labs @ 15 points each</td>
<td>90</td>
<td>60 %-69 %</td>
<td>D-, D, D+</td>
</tr>
<tr>
<td>Total</td>
<td>750</td>
<td>0 %-59 %</td>
<td>F</td>
</tr>
</tbody>
</table>

Grading
The 125 points for each lab are divided into three overall categories:
- Pre-lab (40 points total, 32% of your grade)
- In-lab (15 points total, 12% of your grade)
- Post-lab (70 points, 56% of your grade)

Pre-lab (40 points total)
- Moodle Pre-lab Quiz
  - Before arriving, study the Moodle pre-lab materials, and take the Moodle pre-lab quiz (25 points)
  - This quiz will CLOSE the first day of your scheduled lab section at 5pm
- Before arriving, write the pre-lab notes in your notebook (15 points), which includes:
  - Title of the experiment
  - Introduction
    - Briefly state the purpose of the lab
    - i.e. Chemicals synthesized, methods and techniques learned, chemical understanding gained
  - Reaction (if applicable)
    - Use the following formatting:
    - Reactants (use chemical formulas or diagrams) "\rightarrow" Products
    - Table of chemicals used, include:
      - Name of chemical
Diagram of compound (“zig-zag” formula)
Safety information
Molecular weight
Physical properties
(Many of the chemicals used can be found on http://www.sigmaaldrich.com/united-states.html)

Procedure
This can be written out as a series of steps, in a flowchart, or pictorially represented

The pre-lab notes can be hand-written or typed out and printed and pasted in the lab notebook

Get your pre-lab notes checked off by the TA
Points are awarded based on the correctness, completeness, and clarity
After receiving instructions about performing the lab, the TA will either:
• Allow you to start the lab immediately
• Request that you add pertinent information to your pre-lab notes
While waiting for your pre-lab notes to be checked, you may set up apparatuses and make general preparations, but do not work with any chemicals until your TA gives you the OK

In-lab (15 points total)
• In-lab notes (5 points)
  o Notebooks must have a permanent binding of some sort
  o Begin each lab on a new page, and include the experiment title and the date
  o Significant actions must be recorded, along with the time
  o All changes to the procedure must be noted
  o Remember to include units with every number
  o If a mistake is made:
    ▪ Draw one or two lines through it
    ▪ Enter the correct information
    ▪ Do not obliterate an incorrect entry or remove pages
  o Your in-lab notes will be checked off by the TA periodically
    ▪ Points are awarded based on the thoroughness and clarity

• Participation (10 points)
  o Showing up to lab
  o Ability to properly set up reactions and use instrumentation
  o Adherence to safety rules
  o Maintenance of clean working conditions
    ▪ Always clean up after yourself—your own bench area after completion of an experiment and all common areas
  o Completing lab tasks in a timely manner
  o Participation points are awarded by the TA for each lab

Post-lab (70 points total)
• Lab report (70 points)
  o General comments
    ▪ Refer to lab-specific rubrics (will be posted on Moodle) for specific lab report guidelines
Lab reports must be typed
  • Double spaced, 1-inch margins, Times New Roman 12 pt. or Arial 11 pt.
You may hand-write chemical structures and calculations, if they are legible
Concise and clear reports help the TA assess your work
Lab reports are due one week following the last scheduled day of the lab
  • Late lab reports are penalized five points for each lab period they are late
The last lab report is due on Check-out day

General format
  • Introduction (10 points)
  • Methods and materials (20 points)
  • Results (20 points)
  • Discussion and conclusion (20 points)