CHMY 124N.00: Introduction to Organic and Biochemistry Laboratory

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Introduction to Organic & Biological Chemistry Laboratory  
Chmy 124N  Spring 2013

Instructor:  Dr. Holly Thompson  
Office:  Chem Building 402  
  243-2070  holly.thompson@umontana.edu  
Office Hours:  Monday 9:10-10am, Tuesday 10:10-11am and by arrangement

Chmy 124N satisfies the laboratory component of general education Group XI, Natural Sciences. Students synthesize organic compounds or isolate them from biological materials, purify and analyze the compounds using methods and instrumentation typically used in research laboratories. Students also develop quantitative relationships between variables, apply patterns determined with known samples to unknown materials, and practice logical/critical reasoning to problems.

Chmy 123 is a pre-/co-requisite for this course. Chmy 121 or equivalent general chemistry course is a pre-requisite for Chmy 123 and 124.

Pre-Lab Meeting:  
  M 12:10-1:00 pm  ULH 101  
  This meeting prepares you to do the experiments efficiently, to understand the experiments, and to be aware of important safety issues. Attendance is mandatory.

Laboratory Sections:  
  Individual lab sections meet on Tuesday and Thursday in the mornings (9-12) and afternoons (1-4).  
  You must attend the section for which you are registered.

Supplies Required for Lab (all available in bookstore):  
  • Organic and Biological Chemistry Laboratory CoursePac  
  • Safety Goggles-Department policy requires all persons in the laboratory to wear approved safety goggles.  
  • Sharpie® felt-tip pen is useful for writing on glass.

*Spectroscopy data and exam study guides will be posted on the Chmy 124 electronic reserve site at http://eres.lib.umt.edu/eres. Password is CHMY124.

Student Conduct

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available at  http://www.umt.edu/SA/VPSA/indec.cfm/page/1321

The majority of Chmy 124 students are honest and responsible. Be advised that I do enforce the Student Conduct Code in order to protect the honest students from academic misconduct.
Texting, private conversations and early departures from the lecture room are disruptive. Please respect your colleagues.

Grades will be based on the following components:

200 points shown are total for lab reports + protocols
   exp 1 (15), exp 2 (20), exp 3 (20), exp 4 (20), exp 5 (40), exp 6 (25),
   exp 7 (20), exp 8 (20), exp 9 (10), exp 10 (10)
40 pop quizzes (given at unannounced intervals during M pre-lab meetings)
80 two exams
320 total pts

Letter grades will be based on the total out of 320 possible pts. Letter grades for the course will be assigned as follows:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;93.33%</td>
<td>A</td>
</tr>
<tr>
<td>≥90.00%</td>
<td>A-</td>
</tr>
<tr>
<td>88.33% - 90.00%</td>
<td>B+</td>
</tr>
<tr>
<td>83.33% - 88.33%</td>
<td>B</td>
</tr>
<tr>
<td>80.00% - 83.33%</td>
<td>B-</td>
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<tr>
<td>78.33% - 80.00%</td>
<td>C+</td>
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<tr>
<td>73.33% - 78.33%</td>
<td>C</td>
</tr>
<tr>
<td>70.00% - 73.33%</td>
<td>C-</td>
</tr>
<tr>
<td>68.33% - 70.00%</td>
<td>D+</td>
</tr>
<tr>
<td>63.33% - 68.33%</td>
<td>D</td>
</tr>
<tr>
<td>&lt;60.00%</td>
<td>F</td>
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Lab protocols are outlines of the procedures that you will do in the laboratory. Writing protocols each week ensures that you have a reasonable understanding of the lab exercise, so that you can work safely and efficiently.

*If you do not have a complete protocol ready to be initialed by the TA within the first 15 minutes, you cannot start the lab and you will receive a zero for the exercise.*

Lab protocols: -can be hand-written or word-processed
   -must provide the information needed to complete that experiment (general lab techniques not needed), including information on tables
   -must be in your own words (no scanning or photocopies)
   -must include safety notes

Lab reports are based on the tear-out report sheets at the end of each exercise.

*Lab reports stapled to appropriate protocols are due as indicated on the first page of the report: either before the end of the lab period or during the first 15 minutes of the next lab period. Late penalty of 4 pts per day will be assessed after the due time.*
<table>
<thead>
<tr>
<th>Week of</th>
<th>Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 28</td>
<td>Introduction, Procedural and Safety Issues</td>
</tr>
</tbody>
</table>
| Feb 04  | Lab Locker Check-In  
Experiment 1: Automatic Pipet Practice |
| Feb 11  | Experiment 2: Density and Composition of Solutions |
| Feb 18  | President’s Day, no pre-lab lecture, but we will have lab this week  
Experiment 3: Synthesis, Purification and Analysis of Aspirin |
| Feb 25  | Experiment 3: Synthesis, Purification and Analysis of Aspirin (cont.) |
| Mar 04  | Experiment 4: Introduction to Chromatography |
| Mar 11  | Experiment 5: UV-Visible Spectroscopy, Absorption Spectra of Plant Pigments |
| Mar 18  | Experiment 5: UV-Visible Spectroscopy, Absorption Spectra of Plant Pigments (cont.) |
| Mar 25  | Experiment 6: UV-Visible Spectroscopy, Quantitation of Protein |
| Apr 01  | Spring Break |
| Apr 08  | Experiment 7: Fischer Esterification |
| Apr 15  | Exam 1 covers Experiments 1-6  
Experiment 7(cont.) |
| Apr 22  | Experiment 8: Life Sciences Data Bases/MSDS  
Experiment 9: Gas Chromatography  
Experiment 10: High Performance Liquid Chromatography |
| Apr 29  | Experiments 8, 9, 10 (cont.) |
| May 06  | Exam 2 covers Experiments 7-10  
Check-out |
| May 15  | 10:10-noon scheduled final exam  
No final exam in Chmy 124.  
Scheduled final exam time used to complete any unfinished business. |