Chem 6b, spring '02

Texts: Microscale: Techniques for the Organic Laboratory by D. W. Mayo, R. M. Pike, S. S. Butcher, P. K. Trumper - this text is a useful source for description of laboratory technique as well as a good source for spectroscopy.

Chem 6AB Lab Manual

The "essentials": 1) the text, 2) the lab manual 3) a lab notebook, 4) eye protection (goggles or glasses) 5) your attendance

Instructor: Prof. R. D. Little, little@chem.ucsb.edu.
Office hours, Tuesday 3-4 pm in PSB 3649C/D, or by appointment

LAB

Safety items:
• Eye protection is required at all times.
• To avoid problems from broken glass and chemical spills, shoes are required. Sandals, or any other form of open-toed shoes are not allowed.
• Lab coats or aprons are suggested to protect skin and clothing.

Broken glassware:
• Please dispose of broken glass in an appropriately labeled container.
• save standard taper joints and chipped glassware for repair; dirty glassware is not broken glassware.

Waste disposal:
• Please dispose of chemical waste in an appropriate container or as instructed.

LECTURE [required for 6a; recommended for 6b]

Lectures dates: April 2, 9, 16, 23, 30; May 7, 14, 21, 28
• The lecture class meets on Tuesdays from 1-1:50 pm.
• The lectures will focus upon topics in spectroscopy, particularly IR and NMR. Attendance is required for students enrolled in chem 6a/6aL and is recommended for those enrolled in 6b. It is in this setting, not the 107/108 series, that you will be taught the fundamentals of spectroscopy.
• QUIZES WILL BE GIVEN WEEKLY

• READING: Lab text, chapters 6-9 deal with IR, NMR, UV and mass spectrometry.

• WEB ADDRESSES will be provided throughout the quarter. Check the course web page weekly for updates. To begin, try these: http://www.chem.uic.edu/web1/ocol/spec/IR.htm and http://chipo.chem.uic.edu/web1/ocol/spec/NMR.htm

• FINAL EXAM:

• GRADING [chem 6b]:
  lab reports 50%
  lab quizzes 15%
  technique 15%
  final exam 20%

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<table>
<thead>
<tr>
<th>Laboratory Dates</th>
<th>experiment</th>
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<tbody>
<tr>
<td>April 1-5</td>
<td>Experiment 1; Fischer esterification of ethyl laurate</td>
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<tr>
<td>April 8-12</td>
<td>Experiment 2: Sodium hypochlorite mediated oxidation of an alcohol</td>
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<tr>
<td>April 15-19</td>
<td>Experiment 3: Horner-Emmons-Wadsworth reaction</td>
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<tr>
<td>April 22-26</td>
<td>Experiment 4: hydroboration-oxidation ... a regioselective reaction ... net anti-Markovnikov addition of water to an alkene</td>
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<td>April 29-May 3</td>
<td>Experiment 5: Grignard reagents ... reaction with a ketone ... determination of titer; water sensitive, air sensitive organometallic reagents</td>
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<td>May 6-10</td>
<td>Experiment 6: Diels-Alder cycloaddition ... a [4+2] cycloaddition; generation of diene via a cheletropic disengagement</td>
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<td>May 13-17</td>
<td>Experiment 7: multi-step synthesis</td>
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<td>May 20-24</td>
<td>Experiment 7 continued</td>
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<td>May 27-31</td>
<td>Experiment 7 continued</td>
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<tr>
<td>June 3-7</td>
<td>Experiment 8: Electrophilic Aromatic Substitution</td>
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Clean Up / Check Out