

CHEMISTRY 355 SYLLABUS FALL 2003

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Required Text and Materials:

1. Safety Goggles

<u>Date</u>	<u>Experiment</u>
Aug 25-28	Checkin, Melting Points
Sept 2-8	Molecular Structure
Sept 9-15	Solubility Tests; Crystallization of Phtallic Acid
Sept 16-22	Recrystallization of Acetanilide Using Mixed Solvent; Recrystallization of an Unknown
Sept 23-29	Simple and Fractional Distillation of an Ethanol-Water Mixture; Distillation of an Unknown Mixture
Sept 30- Oct 6	Liquid/liquid Extraction; Extraction of Acids and Bases
Oct 7-13	Nuclear Magnetic Resonance Spectroscopy; Determination of an Unknown by ^{13}C NMR
Oct 14-20	Nucleophilic Substitution of Alkyl Halides
Oct 21-27	^1H NMR Determination of an Unknown
Oct 28-Nov 3	Thin-Layer Chromatography; Column Chromatography
Nov 4-10	Cholesterol Extraction from Gall Stones
Nov 11-17	Grignard Synthesis of Triphenylmethanol
Nov 18-24	Grignard Synthesis Continued
Dec 1-4	Sodium Borohydride Reduction of 2-Methylcyclohexanone. Use of ^1H NMR to measure product ratios. Cleanup, Checkout

Grading Policy:

1) **Attendance:** Laboratory attendance is mandatory. In the event of an absence, you will receive zero points for that experiment, barring special grace. Doing an experiment during a different lab period will usually be OK if you make arrangements. NOTE: It will be routine that some data analysis will be required outside of the scheduled laboratory time. Often samples will need to dry for a while and be analyzed later.

2) **Individual Lab Scores:** Most experiment will require completion of a lab report and answers to some questions. Some of the grade will be based on quality of results, for example successful identification of an unknown, or high yield, or high product purity. Unless notified otherwise lab reports should be completed by the following lab period. For lab reports in which you are required to answer some questions, these will count into the lab report scores.

3) **Instructor's evaluation of your laboratory performance.** Laboratory preparation, performance, and understanding is not always easily quantified by lab reports alone, especially since you will often work as partners. Part of the final grade will be influenced by the instructor's qualitative evaluation of your laboratory performance and understanding.

Summary:

Individual Lab Score	14 x 10	140 points
Instructor's Evaluation of Your Techniques		40 points

Tentatively letter grades will be assigned as follows:

- A (≥92%)
- B (≥84%)
- C (≥76%)
- D (≥68%)

The instructor reserves the right to lower the requirement for a letter grade, but will not raise them.

Notes:

1. It is obvious that missing one lab and losing the associated 10 points is costly. The importance of attendance cannot be overemphasized.
2. **It is absolutely necessary that students have completed and passed the MSU safety course/tests.** If you did not pass the MSU safety course/tests, it is absolutely vital that you take action to rectify the situation. A student who has not previously passed and who does not pass it **BY NOVEMBER 16** will not be allowed to continue in the organic laboratory. **YOU MUST HAVE PASSED THE MSU TEST; SATISFYING THE REQUIREMENTS AT NDSU, CONCORDIA, OR SOME OTHER SCHOOL IS NOT SUFFICIENT.** Without passing the safety test you will receive an F or an I (incomplete) for the course.
3. Safety goggles must be worn at all times in the organic laboratory. A student who is caught without goggles on will be dismissed from lab and will receive a zero for that experiment. In other words, getting caught without safety goggles on is equivalent to dropping a letter grade! Don't let it happen to you!
4. Proper safety measures and disposal of chemical wastes will be important. If I catch you violating disposal policies, I reserve the right to dismiss you from laboratory immediately.
5. The organic laboratory is **NOT APPROPRIATE IF YOU ARE PREGNANT.** The effect of chemicals on unborn children is not always fully documented, so being in the organic lab while you are pregnant represents an unknown risk. If pregnant, withdraw from Chem 355.