

CHEMISTRY 355 SYLLABUS FALL 2011

Dr. Craig P. Jasperse
Office: Hagen 407J Research Lab: SL324
Telephone: 477-2230
e-mail: jasperse@mnstate.edu

web: <http://www.mnstate.edu/jasperse/>
Office Hours:
M, H, F 9-11
T, H 1:30-3:30

Required Text and Materials:

1) Safety Goggles

2) Lab Manual (print from website, see <http://www.mnstate.edu/jasperse/Chem355/Chem355.html>)

Classroom: Hagen 325 (prelab), SL307 (lab)

Lab Schedule
Prelab:

Monday 2:30-5:30
Hagen 325

Tuesday 9-12
Hagen 325

Wednesday 2:30-5:30
Hagen 325

<u>Page</u>		<u>Date</u>
1	Syllabus	
3	Checkin, Melting Points	Aug 22-24
9	Solubility Tests; Crystallization of Phtalic Acid	Aug 29-31
17	Molecular Structure	Sept 6-7
23	Recrystallization of Acetanilide Using Mixed Solvent; Recrystallization of an Unknown	Sept 12-14
29	Simple and Fractional Distillation of an Ethanol-Water Mixture; Distillation of an Unknown Mixture	Sept 19-21
35	Gas Chromatography-Mass Spectrometry (GC-MS)	Sept 26-28
45	Nucleophilic Substitution of Alkyl Halides; Mechanistic Arrow Pushing	Oct 3-5
	Fall Breather	Oct 10-12
51	Chromatography; TLC, Column, and Flash Chromatography	Oct 17-19
61	Separatory Funnel and Rotary Evaporation; Liquid/liquid Extraction; Extraction of Acids and Bases	Oct 24-26
67	¹³ C Nuclear Magnetic Resonance (¹³ C NMR) Spectroscopy	Oct 31-Nov 2
79	¹ H Nuclear Magnetic Resonance (¹ H NMR) Spectroscopy	Nov 7-9
93	Diels-Alder Reaction	Nov 14-16
	Thanksgiving Break	Nov 21-23
99	Aromatic Substitution: Nitration of Methyl Benzoate	Nov 28-30
	Cleanup, Checkout	Dec 5-6
103	Summary of ¹ H-NMR Interpretation	
104	Summary of ¹³ C-NMR Interpretation	
105	Standard Synthesis Laboratory Report Format	

Grading Policy: Attendance:

1. Laboratory attendance is important! In the event of an absence, you will receive zero points for that experiment. Attending a different session for a given week may be possible upon arrangement.
2. **Individual Lab Scores:** Most experiment will require completion of a lab report, perhaps answers to some questions, and often identification of unknowns. 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.
3. **Write Your Own Lab Report.** While some experiments may be done with a partner, you should keep your own observations and write your report individually, unless told otherwise.
4. Instructor's **evaluation of your laboratory technique and understanding:** This will make up 20% of the total grade.

Tentatively letter grades will be assigned as follows:

A (≥90%) **B** (≥80%) **C** (≥70%) **D** (≥60%)

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

Safety Notes: Noncompliance may result in dismissal from lab and a zero for the week!

1. Wear safety goggles in the organic laboratory.
2. Dispose of chemical wastes in appropriate containers.
3. The impact of the chemicals used in some of these experiments on unborn babies is not fully known. If you are pregnant or become so, I advise you to drop organic chemistry laboratory.

Course Description

CHEM 355 Organic Chemistry Laboratory I (1 credit)

Techniques for the purification, synthesis, and characterization of organic compounds and the study of organic reactions. **Prerequisite:** Chem 210L

Student Learning Outcomes/Course Objectives

Students should master the laboratory techniques required for the purification, characterization, identification, and synthesis of various organic compounds. The ability to identify unknowns, including via use of spectroscopy, is an important outcome goal.

Academic Honesty

For a full description of the MSUM Academic Honesty Policy, please see the Student Handbook. (<http://wwwmnstate.edu/sthandbook/POLICY/index.htm>)

Special Accommodations

Students with disabilities who believe they may need an accommodation in this class are encouraged to contact Greg Toutges, Coordinator of Disability Services at 477-5859 (Voice) or 1-800-627-3529 (MRS/TTY), CMU 114 as soon as possible to ensure that accommodations are implemented in a timely fashion.

Keys-Cards and Door Access: The doors will be locked all the time. You will always need your key-card (your MSUM ID card) in order to get in. The card will work **M-F, 7:30-6:00, in rooms 305 and 307 (main lab and NMR room).**

Keys: Lab drawer keys can be picked up at the key issuing office, Owens 209 (phone 477-2925). They should be available by Tuesday, Sept. 1. At end of semester, keys need to be returned to Owens 209. Penalties for failure: a) \$25 fine, and b) you won't be able to register again until you return it.