ORGANIC CHEMISTRY I: CHEMISTRY 341 SYLLABUS
Summer 2009

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Office Hours: M-F 11:30-12:45 (when not grading)

Required Text and Materials:
1) Text: "Organic Chemistry", 7th edition, J. McMurry (Note: if you have McMurry 6th edition, or a version of Wade's Organic Chemistry as used at MSUM, contact me in order to use what you already have.)
2) Solutions Manual: "Study Guide and Solutions Manual for McMurry's Organic Chemistry", 7th Edition, S. McMurry. (The text and solutions manual may be available as a bundle at Varsity Mart.)
Optional: Darling Molecular Models, available in the Varsity Mart.

Test Schedule

Test 1, 100 points	Ch 1	Structure and Bonding
Tuesday, June 30	Ch 2	Polar Covalent Bonds; Acids and Bases
	Ch 3	Organic Compounds: Alkanes and Cycloalkanes
	Ch 4	Stereochemistry of Alkanes and Cycloalkanes
Test 2, 100 points	Ch 5	An Overview of Chemical Reactions
Friday, July 17	Ch 9	Stereochemistry
	Ch 10	Alkyl Halides
	Ch 11	Reactions of Alkyl Halides; Nucleophilic Substitutions and Eliminations
Test 3, 100 points	Ch 6	Alkenes: Structure and Reactivity
Friday, July 31	Ch 7	Alkenes: Reactions and Synthesis
Test 4, 50 points	Ch 13	Nuclear Magnetic Resonance Spectroscopy
Friday, Aug 7	Ch 12	Infrared Spectroscopy

Grading Summary

Tests 1-3	300 points (3 x 100)
Test 4	50 points
Take-Home Quizzes	30-70 points? (3-7 of these?)

Tentative letter grades

A	90%
B	77%
C	65%
D	53%

+10 possible extra credit points for perfect attendance

THE INSTRUCTOR MAY LOWER BUT WILL NOT RAISE THE PERCENTAGE REQUIRED FOR A LETTER GRADE

Jasperse website: http://www.mnstate.edu/jasperse/
This will include copies of:
- notes/problems used in class (print these in advance).
- practice tests and practice text answers
- quizzes
- answers to in-class problems. (These reflect old notes, but are usually OK…)

Take-Home Quizzes: I will assign a number of take-home "quizzes" (maybe 3-6 over the course of the semester?) These will normally be given out at least two days before they are due.

Attendance: Faithful attendance is important (and I do care if you come!) To reinforce your self-discipline, perfect attendance will be rewarded with 10 points of extra credit and a single absence with 5 points of extra credit. Be sure to sign the attendance sheet each day!

Final Exam: The last test will **not be cumulative**. (Unless class prefers cumulative final?)

Homework and Study Strategy: All assigned book problems represent what I consider to be reasonable test-level problems. There may be a few that are trickier than I'd put on a real test, but the majority are ones you ought to be able to do. All have worked-out answers in the Solutions Manual. **The homework is a great way to practice problem solving, assess your progress, and prepare for tests.** Since solutions are available, I will not collect the book homework. **The few take-home quiz problems that I collect and grade are no substitute for doing book homework problems!**

Putting off the extensive information in organic chemistry till the week of a test will only make it harder on you. After each class, try to study the day's notes and work all of the assigned book problems.

Some practical study thoughts:

1. General university policy is that an average student in an average class should study for two hours out of class for two hours in class to get an average grade.
   - Fact: Organic chemistry isn't really an average class! If you'd like more than an average grade, you probably should average more than ten hours per week outside of class!
2. I suggest reviewing the class notes and practice problems ASAP after a day's class, and probably going through the material at least twice.
3. I suggest working book problems associated with the sections covered in class right after that.
4. Reading the book: the textbook is a support resource. If you didn't understand some of the material in class, the book will frequently have a more complete and detailed discussion that will help you understand things.
5. If I decide I'm not going to take the time to study the class notes, to do book problems, and to read the book, which one should I sacrifice first? Probably the book reading!
6. The practice tests are excellent rehearsal for the real tests.

Class E-Mail List

An email list may be used to notify you of special scheduling information or other miscellany. (If I get sick and cancel a class; or if/when/where a practice tests might be held; or if there are errors in one of the practice tests, etc.) **The list uses your NDSU e-mail address**. You can have NDSU emails forwarded to a different address. (See the Information Technology desk, IACC-150, this building.)

- Note: A test e-mail has already been sent. If you did not receive it, it probably means either that your NDSU e-mail is not the address you look at and is not being forwarded to the address you look at, or else that your junk filter junked it!

In-Class Notes

I have a very thorough set of notes that can be used in class. Included will be numerous examples and practice problems that I/we will work in class together. You are advised to print the notes (NDSU's printers can print them on both sides of a page), 3-hold punch them, and keep them organized in a 3-ring binder.

Academic Honesty

It is assumed that students at NDSU have the integrity to complete tests on their own. Any student who is found to have cheated on a test will receive an F for that test or an F for the course, depending on the circumstances. A second infraction will result in an automatic F for the course. For a full description of the NDSU Code of Academic Responsibility and Conduct, see http://www.ndsu.nodak.edu/policy/335.htm.

Special Accommodations Students with disabilities who believe they may need an accommodation in this class are encouraged to contact the instructor as soon as possible.

	Chemistry 341, Jasperse, Summer 2009 (39 class days)	Reading	
Date	Topic	Assignment	
June 15	NO CLASS		
June 16	Intro. Octet Rule, Lewis Structure, Hybridization, Bonding	1.1-11	
June 17	Formal Charge, Resonance, Hybridization + Shape; Drawing 3-D Shapes	1.12-2.6	
June 18	Acid-Base Chemistry, Bond Rotation, Isomerism, Polarity, Intermolecular Forces, Solubility	2.7-2.13	Tentative
June 19	Classification of Organic Compounds. The Functional Groups.	3.1	Letter Grades:
June 22	Formulas, Nomenclature, Conformations of Alkanes	3.2-7	A: 90%
June 23	Conformations and Stability of Acyclic Alkanes and Cycloalkanes	4.1-4	B: 77%
June 24	Conformations and Stability of Cyclohexanes	4.5-9	C: 65%
June 25	Catchup	Catchup	D: 53%
June 26	Alkane Chlorination. Factors to Think About in a Chemical Reaction.	5.1-8, 10.3-4	
June 29	Transition States, Multistep Reactions, Halogenation of Higher Alkanes.	5.9-11, 10.3-4	
June 30	**Test 1. Chapters 1-4.**		
July 1	Reactive Intermediates (Radicals, Cations, Anions)	5.9-11, 10.3-4	
July 2	Chirality, R/S Classification of Chiral Carbons.	9.1-5	
July 3	NO CLASS		
July 6	Miscellaneous Stereochemistry	9.1-5	
July 7	Diastereomers; More than One Chiral Carbon	9.6-14	
July 8	Nomenclature, Structure, Properties, Reactivity of Alkyl Halides.	10.1-4	
July 9	The Sn2 Substitution Reaction.	11.1-3	
July 10	The Sn1 Substitution Reaction.	11.4-6	
July 13	The E1 and E2 Elimination Reactions. Substitution vs. Elimination?	11.7-12	
July 14	Catchup	Catchup	
July 15	Practice	Practice	
July 16	Alkenes: Structure, Nomenclature, Isomers.	6.1-5	
July 17	**Test 2. Chapters 4-6**	**Test**	
July 20	Alkene Stability; Synthesis.	6.6, 7.1	
July 21	Synthesis of Alkenes; Classifying/Recognizing Reaction Mechanisms; Alkenes	7.1, 17.6	
July 22	Addition of H-Cl, H-Br, and H-OH to Alkenes.	6.7-11, 7.2	
July 23	Oxymercuration/Dermercuration; Hydroboration/Oxidation; Hydrogenation	7.4, 7.5, 7.7	
July 24	Addition of Halogens, Formation of Halohydrins; Epoxidation Skip 7.6, 10, 11	7.2-3	
July 27	Oxidation Reactions of Alkenes	7.8-9	
July 28	Catchup; Practice Problems	Catchup	
July 29	1H NMR Overview: Chemical Shift, Integration, and Splitting; 1H NMR Problem Solving	13.1-3, 8-11	
July 30	1H NMR Problem Solving	13.8-11	
July 31	**Test 3. Chapters 6,7** Skip 10.12	**Test**	
Aug 3	1H NMR Problem Solving	13.8-11	
Aug 4	13C NMR	13.4-5	
Aug 5	Infrared Spectroscopy	12.6-8	
Aug 6	Integrated Practice Problems	Practice	
Aug 7	**Test 4. Chapters 13, 12**	**Test**	

CHEMISTRY 341 PROBLEMS
SUMMER 2009

Dr. Craig P. Jasperse (these assume you are using McMurry version 7)

Chapter	Recommended Book Problems
1	2, 5, 9-11, 13, 14a,b, 15-17, 18, 22, 24, 28, 31, 33, 34, 35, 49, 50, 52, 54
2	2, 5, 8-11, 13, 17, 19, 32-34, 36, 37, 40, 41, 45, 47, 53-56
3	1 (not responsible for sulfide in 1a), 2, 4, 6, 8-12, 15, 16a-c, 17 21-24, 26-29, 34, 38, 40, 42a,b, 44
4	1, 2, 4-6, 9, 12-14, 18 (draw, don't need to calculate), 22, 23, 25, 27-33, 35, 42, 53, 56
5	2, 8, 9, 17, 18, 19, 29, 30, 31, 33, 35, 37
6	1, 2, 4-6, 7, 9-11, 13, 14-15, 16, 23, 24, 26, 29-30, 38-42, 45
7	1-3, 5 (NBS = Br_2), 6-10, 13-17, 24(skip e), 25c-e, 26, 27(omit c), 28, 29, 30, 31, 32, 33, 41, 42, 43a-d
9	2, 3, 7-10, 13, 15, 16, 20, 35, 37, 42-48, 50-53
10	1, 3, 4 (major), 5, 17a-d, 30
11	1, 2, 4, 5, 6, (OTs is best leaving group of all), 8, 11, 13, 15, 16, 20, 25a,c,d, 26, 25-27, 28a-c, 30a-e, 31a-e, 36, 37, 38, 41
13	3, 6 (assume decoupled C-13 spectra for all C-13 problems), 7, 14, 16a-e, 17, 19, 21, 33, 38, 40-44, 50-52, 54, 56-58
12	7a,c, 7a,c