

ORGANIC CHEMISTRY II: CHEMISTRY 342 SYLLABUS Summer 2009

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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 Tuesday, June 30	Ch 14 Ch 15 Ch 16	Conjugation Benzene and Aromaticity Electrophilic Aromatic Substitution and Aromatic Synthesis
Test 2 Tuesday, July 14	Ch 17 Ch 10	Alcohols Alkyl Halides
Test 2 Wednesday, July 29	Ch 19 Ch 22 Ch 23	Alkenes: Structure and Reactivity Alkenes: Reactions and Synthesis
Test 4 Friday, Aug 7	Ch 24 Ch 20 Ch 21	Amines Carboxylic Acids Carboxylic Acid Derivatives and Nucleophilic Acyl Substitution Reactions

<u>Grading Summary</u>		<u>Tentative letter grades</u>
Tests 1-4	400 points (4 x 100)	A 90%
Take-Home Quizzes	10-70 points? (3-6 of these?)	B 77%
		C 65%
+10 possible extra credit points for perfect attendance		D 53%

**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:

- handouts/notes/problems used in class.
- practice tests and practice text answers
- quizzes
- answers to in-class problems. (These reflect old notes, but are usually OK...)

Take-Home Quizzes: I may assign several take-home "quizzes" (maybe 2-6 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 it is the class's preference.

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 that NDSU e-mails are 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-fold 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 342, Jasperse, Summer 2009 (38 days)		Reading Assignment
Date	Topic	
June 15	No Class	
June 16	Intro; Conjugation, Molecular Orbitals, Dienes, Allylic Cations, Additions to Dienes	14.1-2
June 17	More allylic cations/radicals/conjugation and Applications; Diels-Alder Reaction	14.3-4
June 18	Diels-Alder Reaction, Aromaticity	14.4-5
June 19	Aromaticity; Huckel's Rule, Complex Aromaticity, Application, Nomenclature Skip: 14.6-10	15.1-8
June 22	Electrophilic Aromatic Substitution: Intro, Mechanisms	16.1-5
June 23	Reactions in Detail: Halogenation, Nitration, Sulfonation, Alkylation, Acylation	16.1-5
June 24	Catchup; Addition to Disubstituted Benzenes; Synthetic Applications	16.6,9-11
June 25	Synthetic Applications; Practice	Practice
June 26	Structure, Nomenclature, Properties, Acidity of Alcohols, Synthesis Review Skip: 16.7-8	17.1-3
June 29	Synthesis of Alcohols; Grignard Reactions	10.7, 17.5
June 30	Test #1 Covering Chapters 14-16.	Test 1
July 1	Synthesis of Alcohols; Grignard Reactions	17.5
July 2	Grignard Reactions; Reduction Reactions	17.5, 17.4
July 3	No Class Skip: 17.8-11	
July 6	Oxidation of Alcohols	17.6
July 7	Halogenation of Alcohols	10.6, 17.6
July 8	Synthesis and Retrosynthesis	
July 9	Catchup, Multistep Synthesis Problems	Catchup
July 10	Ketones/Aldehydes. Nomenclature, Properties, Intro, Synthesis	19.1-2
July 13	Synthesis and Reactions of Ketones/Aldehydes.	19.2, 4-7
July 14	Test #2 Covering Chapters 17 and 10.	Test 2
July 15	Reactions of Ketones/Aldehydes	19.4-10
July 16	Reactions of Ketones/Aldehydes	19.4-10
July 17	Enols and Enolates Intro. Acid/Base Considerations; Proton as Electrophile Skip: 19.11-14	22.1, 5-6
July 20	Halogenation; Alkylation; Ester Hydrolysis; Decarboxylation	22.5,7
July 21	The Aldol Reaction (Aldehyde/Ketone as Electrophile)	23.1-6
July 22	Claisen Reaction (Ester as Electrophile);	23.7-9
July 23	The Wittig Reaction; Catchup.	19.11
July 24	Catchup, Integrated Practice Problems. Skip: 22.4, 23.10-13	Catchup
July 27	Amines, Nomenclature, Properties, Basicity	24.1-4
July 28	Amines, Basicity	24.3-4
July 29	Test #3 Covering Chapters 19, 22, and 23.	Test 3
July 30	Reactions of Amines	24.7-8
July 31	Synthesis of Amines Skip: 24.5, 9-10	24.6
Aug 3	Carboxylic Acid Nomenclature and Acidity	20.1,2,4
Aug 4	Reactions and Synthesis of Acids	20.5, 21.1-7
Aug 5	Interconversions Among Acids and Derivatives	21.1-7
Aug 6	Practice Problems	-
Aug 7	Test #4 Chapters 24, 20, 21 Skip: 20:3, 9-10, ch 21: 8-10	Test 4

CHEMISTRY 342 PROBLEMS

Summer 2009

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Chapter Recommended Book Problems

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|----|---|
| 14 | 2, 3, 5-9, 22, 24, 26 (major), 32, 33 (ignore stereo of phenyl group), 34, 36 (predict major), 37, 39 |
| 15 | 1, 2a,c,d, 3, 8, 9, 12, 18b-d,f, 19c-e, 37a |
| 16 | 1, 6, 9, 10, 13, 15, 23, 24b, 29, 30a,c-f, 31a,b, 32, 33a,c,d, 34b-d, 35 (just rank), 37, 46, 48-50, 51a,d, 52b,d, 53a, 54a |
| 17 | 2, 3, 5, 6-10, 13 (or H ₂ SO ₄ , heat), 14, 15, 25a-e, 30, 33, 34, 36, 40, 41 |
| 19 | 1a,b,d-f, 2a,b,e,f, 3a,b, 4, 5, 10 (ethylamine part), 11, 14, 16a-e, 30a-h, 32a,c-e, 34a-e,h, 37, 39, 40 |
| 22 | 1, 7a-c, 10, 13, 16a,c,f, 20, 21, 22a,b, 23a,b,d, 26, 27, 28a-c, 35 |
| 23 | 1, 3, 5, 8, 11, 14, 28a-c, 29, 35, 37, 39 (major) |
| 24 | 2, 4, 5 (stronger), 6, 8, 11, 18c, 30, 31, 32a-d, 35a-c, 40a-c,e,f |
| 20 | 1a-d, 2a,b,d, 3, 9, 10, 21b,d,f,g, 21a-d, 25b,c, 26a,c, 27a-c, 28, 39, 43a-b |
| 21 | 1c,f, 2a, 3, 4, 5, 7, 9, 11, 12, 14, 15, 32d,g, 33d, 36a,c-e,g,h, 37-39 (parts e-g for each) |