

ORGANIC CHEMISTRY II: CHEMISTRY 342 SYLLABUS

Summer 2012

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Required Text and Materials:

1) Text: "Organic Chemistry", 8th edition, Carey and Giuliano (Note: if you have McMurry 6th or 7th 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: "'Student Solutions Manual to accompany Organic Chemistry" Eighth Edition, by N. T. Allison, R. M. Giuliano, R. C. Atkins, and F. A. Carey." (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 Wednesday, June 27 | Ch 14 Ch 15 Ch 4 | Organometallics Alcohols Alcohols and Alkyl Halides | 100 pts |
| Test 2 Tuesday, July 10 | Ch 13 | Spectroscopy | 50 pts |
| Test 3 Wednesday, July 25 | Ch 17 Ch 20 | Carbonyls: Addition Reactions Carbonyls: Enolate Reactions | 100 pts |
| Test 4 Friday, Aug 5 | Ch 21 Ch 18 Ch 19 | Amines Carboxylic Acids Carboxylic Acid Derivatives and Nucleophilic Acyl Substitution Reactions | 100 pts |

| Grading Summary | | Tentative letter grades |
|--|------------------------|-------------------------|
| Tests 1-4 | 350 points | A 90% |
| Take-Home Quizzes | ~ 20 points | B 79% |
| Online homework | ~ 70 points (prorated) | C 68% |
| +5 possible extra credit points for perfect attendance | | D 56% |

- **The instructor may lower but will not raise the percentage required for a letter grade.**

Jasperse website: <http://www.mnstate.edu/jasperse/> This will provide links to:

| | | | |
|------------------------|-------------------|---------------|---------------|
| Notes for use in class | Recorded Lectures | Sapling | Quizzes |
| Practice Tests | Jasperse Schedule | Textbook Info | Miscellaneous |

Take-Home "Quizzes" and/or Online Homework: I will assign some blend of homework for points, either online work and/or some printed assignments.

Attendance: Faithful attendance is important (and I do care if you come!) To reinforce your self-discipline, perfect attendance will be rewarded 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?)

Recorded Lectures and On-Line Availability: I will try to record all of the regular class periods and post the movie-versions. I will also record and post **practice test sessions**, and perhaps extra problems or comments or pre-test tips.

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 assignment problems that I collect and grade are no substitute for doing book homework problems! Likewise I'm not sure that the on-line homework will be sufficient.**

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!
2. I suggest reviewing the class notes and practice problems ASAP after a day's class, and going through the material at least twice.
3. Many students print an extra copy of class notes, and try to redo all the problems on their own.
4. I suggest working book problems associated with the sections covered in class right after that.
5. 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.
6. 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!
7. 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. **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-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 2012 (38 days) | | Reading Assignment |
|---|--|--------------------|
| Date | Topic | |
| June 11 | No Class | |
| June 12 | Intro; Structure, Nomenclature, Properties, Synthesis Review | 4.3-6, |
| June 13 | Synthesis of Alcohols; Grignard Reactions | 14.6, 19.12 |
| June 14 | Synthesis of Alcohols; Grignard Reactions | 14.6,9; 16.12 |
| June 15 | Grignard Reactions; Reduction Reactions | 14.9; 15.2,4 |
| | Skip: 14.7,8,10-16 | |
| June 18 | Acidity of Alcohols, Oxidation of Alcohols | 1.14,16; 15.9 |
| June 19 | Halogenation of Alcohols | 4.7-14 |
| June 20 | Synthesis and Retrosynthesis | 14.9 |
| June 21 | Catchup, Multistep Synthesis Problems; Tosylates; | 8.12 |
| June 22 | Catchup, Multistep Synthesis Problems | Catchup |
| | Skip: 15.7,11,12- | |
| June 25 | ¹ H NMR Overview: Chemical Shift, Integration, and Splitting; NMR Problem Solving | 13.1-6,25 |
| June 26 | ¹ H NMR Problem Solving | 13.4-12 |
| June 27 | Test #1 Covering Chapters 14-16. | Test 1 |
| June 28 | ¹ H NMR Problem Solving | 13.4-12 |
| June 29 | ¹³ C NMR | 13.14-19 |
| | Skip: 13.22-24 | |
| July 2 | Infrared Spectroscopy | 13.21-23 |
| July 3 | Integrated Practice Problems | Practice |
| July 4 | No Class | |
| July 5 | Ketones/Aldehydes. Nomenclature, Properties, Intro, Synthesis | 17.1-4 |
| July 6 | Synthesis and Reactions of Ketones/Aldehydes. | 17.5-6 |
| July 9 | Reactions of Ketones/Aldehydes | 17.7 |
| July 10 | Test #2 Covering Chapters 17 and 10. | Test 2 |
| July 11 | catchup | 17.8,9 |
| July 12 | Reactions of Ketones/Aldehydes | 17.10, 15-17 |
| July 13 | Enols and Enolates Intro. Acid/Base Considerations; Proton as Electrophile | 20.1,13,16 |
| | Skip: 17.11 | |
| July 16 | Halogenation; Alkylation; Ester Hydrolysis; Decarboxylation | 20.14,9-11 |
| July 17 | The Aldol Reaction (Aldehyde/Ketone as Electrophile) | 20.3,4 |
| July 18 | Claisen Reaction (Ester as Electrophile); | 20.5-8 |
| July 19 | The Wittig Reaction; Catchup. | 17.12,13 |
| July 20 | Catchup, Integrated Practice Problems. | Catchup |
| | Skip: 20.15,17-20 | |
| July 23 | Amines, Nomenclature, Properties, Basicity | 21.1-4 |
| July 24 | Amines, Basicity | 21.5-7 |
| July 25 | Test #3 Covering Chapters 19, 22, and 23. | Test 3 |
| July 26 | Reactions and Synthesis of Amines | 21.9-12,17 |
| July 27 | Carboxylic Acid Nomenclature and Acidity | 18.1-7 |
| | Skip: 21.5,8,13-15,18 | |
| July 30 | Synthesis and Reactions of Acids | 18.10-18 |
| July 31 | Interconversions Among Acids and Derivatives | 19.1-11 |
| Aug 1 | Interconversions Among Acids and Derivatives, Catchup | 19.12-20 |
| Aug 2 | Practice Problems, Catchup | - |
| Aug 3 | Test #4 Chapters 24, 20, 21 | Test 4 |

CHEMISTRY 342 PROBLEMS

Summer 2012

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These assume you are using Carey and Giuliano version 8. I have lists that are appropriate if you instead have McMurry 6 or 7 or almost any version of Wade.)

| Ch | Recommended Book Problems |
|----|--|
| | Test 1 |
| 4 | Alcohol basics and halogenation: 5, 7, 10, 23,a,c-h, 24b,f,i, 39a,d, 40a,c |
| 14 | Grignard reactions: 3, 4, 5a, 6, 8, 16a, 18b,d,h,km, 19, 20a,b,d,e |
| 19 | Esters with Grignards or LiAlH ₄ : 15, 17 |
| 15 | Lots of Alcohol reactions: 2, 3, 10, 18a-c,f, 19a-e, 22a-d, 23a,c, 24b,c, 25a-c, 26a-e, 27d-f,h, 28a-f, 30a,c |
| | Test 2 |
| 13 | Spectroscopy: 5, 6, 7, 9, 11, 12, 16, 18, 21, 32a-c, 33a-d, 35, 37, 43, 45, 46, 53, 55, 57 |
| | Test 3 |
| 17 | Aldehydes and Ketones: 1a,c, 2, 3, 5, 6, 10, 11a, 12, 14a-d, 23a, 26a,b,d,g-k,q,r, 27a,b,d,g-k,q,r, 28a,d, 29a,e, 31a-f, 33, 35, 36, 37a, 38a,b, 39a-d, 40, 44d,e, 48, 49 |
| 20 | Enolate Chemistry: 1, 2, 3, 5, 6, 7, 9, 10, 13, 14a,b, 16, 18, 19, 20, 22, 23, 24, 27, 28, 29, 30, 39, 47a, 48, 52a,b, 53, 54c, 55, 58, 60a-g, 61, 62a,d,e, 64a,b, 69, 73, 74, 77a,b,e,f, 78b-e Decarbox: Ch 18: 11, 12 Wittig: Ch 17: 17, 18, 20, 44b,c |
| | Test 4 |
| 21 | Amines: 1, 2, 3, 6, 13, 23a-c, 24a-g,i,j, 27a,b,d, 29a-c,e, 29, 34a,c,g, 36a-g,j, 37a-f, 38a, 39a-c, 42a |
| 18 | Acids: 3, 5a-c,f, 7, 8, 9, 10, 13a,b,e-j, 14a,c,d, 15, 16a,d, 17a-d,f, 19a,c,e,f, 20a,b,d,e, 21, 24a-c,e,f, 28, 30a, 34, 35, 37 |
| 19 | Acid Derivatives: 1,c,d, 3, 5, 6a,b, 7, 8, 11, 12, 14, 18, 20, 22, 27d-f, 28b,c, 29a-c,h,j,k,n,o,t, 32a-d, 33a-d,f,g |

Sapling OnLine Homework, version 2012**Getting on when you've already enrolled: (see lower down for enrolling at first)**

1. Website: <http://www.saplinglearning.com/>
2. Login
3. Click on your class
4. If you click on "Activities and Due Dates" in the upper left corner, that will list assignments.
5. Miscellaneous:
 - After you open an assignment, there is an option to "print" it. I like to write on paper and keep my work so I can study it later, for example. However, this will NOT print the "hints" which are often very helpful.
 - You can try a problem as many times as you like. But the scoring will cost you 5% of the points available (per problem) for each incorrect attempt.
 - **Jasperse can enter due-date extensions.**
 - Take some time with the introduction materials, including the "training assignment" and the "drawing tips and shortcuts" practice problems.
 - You can go back and work on things after they are due. So you can use these as a study tool later on if you wish (or when you're studying for PCAT or whatever....)

Re-enrolling for Organic II, if you Paid a 2-semester package fee for Organic I

To register for the course for those who purchased the two semester access, find the course. From there, if you paid the 2-semester access, there should be a button that says "Use your Sapling Learning Credit to enter the course" (provided you haven't used the credit on any other courses). Click the button and you should have access.

Enrolling at the beginning

1. Go to <http://saplinglearning.com>
 2. a. If you already have a Sapling Learning account, log in, click "View Available Courses", then skip to step 3. b. If you have a Facebook account, you can use it to quickly create a SaplingLearning account. Click "create account" located under the username box, then click "Login with Facebook". The form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and timezone, accept the site policy agreement, and click "Create my new account". You can then skip to step 3. c. Otherwise, click "create account" located under the username box. Supply the requested information and click "Create my new account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
 3. Find your course in the list (listed by school, course, and instructor) and click the link.
 4. Select your payment options and follow the remaining instructions. **NOTE: Sapling Learning costs \$29.99 for a single semester or \$49.99 for two semesters. You will be prompted before payment and asked if you would like to purchase two semesters for a discount. You will need to purchase two semesters in advanced to receive the multi-course discount. There is a 14 day grace period to access your courses before payment, and there is a 60 day refund policy. For more information on refunds, visit: <http://www.saplinglearning.com/help/?topic=9>**
- a) Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments.
- a) During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to support@saplinglearning.com explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor and TAs.
