CH2410 Syllabus
(tentative)
Fall Semester 2011

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Office Hrs: By arrangement (I am often available to answer email until about 11:00 pm daily)


A textbook bundle is available in the Mich Tech bookstore providing the textbook (hard copy) and access to the Connect on-line system for the retail price of the textbook. An e-copy of the Smith textbook is also available on-line. Access to Connect is required for on-line Homework assignments and quizzes that are a component of your CH2410 Grade.

CH2410 Connect homepage: http://connect.mcgraw-hill.com/class/d_bates_fall_2011

CH2410 home page:
http://www.chemistry.mtu.edu/pages/courses/class.php?class=CH2410&section=0A &sem=20101

Additional course requirements/suggested materials:

You must know how to open and use pdf files. Through the Mich Tech site license, you can download a copy of ChemDraw. ChemDraw is useful for drawing chemical diagrams, finding chemical names from chemical structures, finding chemical structures from chemical names, and other things. Versions are available for Mac and PC. Visit the web site below, enter your Mich Tech email address, and follow the instructions. Go to this link to get started:

Help: There are many ways to get help in CH2410 and I urge you to use them:

(a) Immediately before and after lecture are excellent times to ask me questions or to make an appointment to see me in my office.

(b) the Chemistry Learning Center (CLC) provides walk-in assistance to organic chemistry students – please make use of this valuable resource.

(c) scheduled, student-led supplemental learning (SI) sessions will be held to answer your questions about class and text topics, to go over sample problems, and to expose students to some questions that will appear on exams – these sessions are an important part of your orgo learning experience... details will be announced in class.
Course Objective: To provide students with a foundation in organic chemistry—the rulebook for life. This course should provide a basis for further discovery in more advanced courses in materials science, polymer chemistry, unit operations, plant design, biochemistry, and molecular biology as well as provide basic information and “real-life” examples.

Important!!: It is your responsibility to be familiar with all aspects of this syllabus.

“Lecture” organization: You will be provided a set of PowerPoint slides for each Chapter. These slides are a summary of the topics you need to know and understand. I will cover selected material from these slides in class, based on questions you ask about the material. Before the Chapter is discussed in class, you should read/study these slides. After class, you should study these same topics in the textbook, work example and practice problems, attend SI sessions and ask questions, then complete on-line homework (as scheduled).

Lecture format: Class begins at 11:05 with a request for questions about the information provided in the PP slides. These questions will serve as the basis for lecture material that day.

After some minutes of lecture, I will introduce a skill you need to know (LEARN SKILL) – I will work an example utilizing the skill (PRACTICE SKILL): I will give you an example where you use the skill (APPLY SKILL): I will show an example of how this skill is used in organic chemistry—almost every topic in CH2410 is used and built upon in CH2420).

(Case study): In some cases, I will present a practical example of how this skill is used in “the real world”. Most examples will be drawn from drug discovery, current events, or personal experiences.

(OUT OF CLASS PRACTICE SKILL): working problems (many, many problems) is one key to success in orgo. I will assign chapter problems and on-line problems for you to work outside of class to gain mastery of the skill sets discussed in class.

Repeat until class time is used up.

In every sense, you steer the direction of class discussion. Be proactive! Come to class prepared and ready to participate. If you don’t like to speak in class, you can email me your comments the evening before class or even hand me a note before class begins and I will try to address them.

Important Dates - 2011:

Aug 29: classes begin
Sep 5: Labor Day recess, no class
Sep 9: K-Day recess (pm only), orgo class meets as usual
Nov 21-27: Thanksgiving recess, no class
Dec 12: Final exam week begins (grades due end of business 12/19)
### TOPICS (Tentative schedule)

<table>
<thead>
<tr>
<th>Week</th>
<th>Reading Assignment by Chapter (dates)</th>
<th>Tentative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intro (8-29) Chapter 1 (8-31, 9-2)</td>
<td>*Problem Assignment</td>
</tr>
<tr>
<td>2</td>
<td>Chapter 2 (9-7)</td>
<td>*These are assigned in Connect</td>
</tr>
<tr>
<td>3</td>
<td>Chapter 3 (9-9, 9-12)</td>
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<tr>
<td>4</td>
<td>Chapter 4 (9-14, 16, 19)</td>
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<tr>
<td>5</td>
<td>Chapter 5 (9-21, 23, 26), Review (9-30)</td>
<td>T1 10/13/2011</td>
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<tr>
<td>6</td>
<td>Chapter 6 (10-3, 5, 7)</td>
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<td>7</td>
<td>Chapter 7 (10-10, 12, 16, 17)</td>
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<td>8</td>
<td>Chapter 8 (10-19, 21, 24, 26)</td>
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<td>9</td>
<td>Review chapters 6-8 (10-28)</td>
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<tr>
<td>10</td>
<td>Chapter 9 (10-31, 11-2, 4)</td>
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<tr>
<td>11</td>
<td>Chapter 10 (11-7, 9, 11), review 11-16</td>
<td>T2 11/18/10</td>
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<tr>
<td>12</td>
<td>Thanksgiving Recess</td>
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<tr>
<td>13</td>
<td>Chapter 12 (11-28, 30, 12-2)</td>
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<tr>
<td>14</td>
<td>Chapter 13 (12-5, 12-7), Review (12-9)</td>
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### GRADING

The Connect on-line package will be used for graded homework and quizzes.

You will need to purchase a Connect access code- one came with the text, if you bought it new in the bookstore, or you can purchase it at the website when you register.

To register visit: [http://connect.mcgraw-hill.com/class/d_bates_fall_2011](http://connect.mcgraw-hill.com/class/d_bates_fall_2011)

And click on Register Now; enter your email address

If you used Connect in First-year chemistry at Mich Tech, you can log in with your password. Otherwise, create a new account.

Follow the directions to complete registration (for a more detailed explanation, see the pdf file “Student Quick Tips” on the CH2410 web page).

There are 1000 possible points in CH2410. These points are portioned as follows:

- Tests (2 @ 225 pts—see dates above): 450 (45%)
- Final (400 points): 350 (35%)
- Chapter quizzes (on-line, 150 points): 150 (15%)
- Application pts (discussed in class): 50 (5%)

All exams are in-class and are a combination of multiple choice and hand-graded questions.

**Final Exam:** The final exam is cumulative and is typically a larger version of hourly exams and may (probably will) include material from homework problems and in SI sessions.
GRADING (Continued)

Grades:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum pts (out of 1000)$^1$</th>
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<tbody>
<tr>
<td>A</td>
<td>800</td>
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<tr>
<td>B</td>
<td>700</td>
</tr>
<tr>
<td>C</td>
<td>600</td>
</tr>
<tr>
<td>D</td>
<td>500</td>
</tr>
</tbody>
</table>

$^1$Based on the equation $\text{Pts} = T1 + T2 + \text{Final}$
Where $T1$, $T2$ equal scores on hourly exams

(+/−) grades- AB, BC, CD will be assigned after the final exam.

Cautionary notes:

1. Materials that may be used on tests and the final exam will be announced in class. ONLY these materials may be used. Make sure you understand what is allowed: USE OF ‘UNAUTHORIZED’ MATERIALS WILL RESULT IN A GRADE OF ZERO (0) FOR THAT EXERCISE.

2. You may be asked to provide proof of enrollment in CH2410 (just before, during, or immediately after a test or the final exam). Please make sure you bring a picture ID to all tests and the final exam.

3. No make-up exams will be given. An excused absence from an exam means your score will be an average of the other exams. An unexcused absence for a test, means you get a “0” for that test. If you must miss an exam – contact D. Bates beforehand – a quick email is all that is needed.

4. If an exam cannot be given at the scheduled time due to unexpected events, the exam will be given during the first regularly scheduled class period after classes resume.

5. No electronic devices, including, but not limited to, cell phones, i-pods, calculators, and computers should not be used, turned on, or even visible during any exam. ANY violation of this rule will result in termination of the exam for affected students.

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MTU complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act. If you have a disability and need a reasonable accommodation for equal access to education or services at MTU, please call the Dean of Students Office at 72212. For other concerns you may contact your academic advisor, department chair, or the Affirmative Action Office.
Tips on how to do well in organic chemistry - Dallas Bates (8-18-02)

1. **Come to class.** *The pace is fast for this class and a lot of material is covered.* Coming to class keeps you connected to the material being covered and the lectures should serve simply as a skeleton, which you must flesh out by reading the book and doing the homework problems. You should plan on significant work outside of class in order to produce an ‘anatomically correct’ body (of knowledge) from the skeleton provided in class.

2. **Read the book.** (Cannot stress this enough) Lectures will cover some of the material in the book, but not everything you will need to know.

3. **Participate in class.** Instructors are usually very open to questions in class and most lecturers try to ask questions of the class during lecture. *You can influence the direction the discussion takes by participating (I love to talk about how organic chemistry explains events in everyday life and in industrial processes and I am easily distracted from my prepared notes!).*

4. **Work problems.** Work as many problems as you can, using both the textbook and web-based resources. If you are not one already, become an active learner.

5. **Don’t get behind.** There always will be temptations to put off studying organic. Don’t succumb! O-Chem is a cumulative subject; what is discussed today will most likely become the basis of material in subsequent lectures.

6. **Understand the chemistry.** Contrary to the way many students study O-Chem, science is NOT simply an immense array of more or less connected trivial facts. Science is a collection of a few basic concepts that can be used to make predictions. Although there are lots of new terms, conventions and ways of naming organic compounds that you will need to memorize. The students who do best in O-Chem become confident enough to take basic facts and extrapolate them to rationalize and explain ‘new’ material... A fairly painless and very effective way to gain this familiarity is to attend SI sessions. To get more experience “speaking” organic chemistry, consider studying in a group where you can use the terminology of organic chemistry, work lots of problems (drawing lots of organic molecules on paper and practice mechanisms using “arrow pushing”).

7. **Use practice tests only as directed.** These tests are designed to show you topics you need to study. Directions for use:
   i. One evening on the week of the test set aside 2 hours. Lock this time in stone for O-Chem studying and mark it in your calendar.
   ii. Use this time to work the practice test beginning to end, without notes or book.
   iii. Correct the test using your notes and textbook. At this point (not earlier) you may want to work with one or more classmates, but keep focused on O-Chem.
   iv. Bring any remaining questions to class to be answered.
   v. Review your sample test to identify any areas that still need study.

Extensive experience has shown this technique works! Cutting corners often leads to frustration and disappointment.

Thanks to Professor G. Barany (UMN-TC) and Dr. Caleb Bates for the original ideas.