CEM 252: ORGANIC CHEMISTRY II
TUE-THU 8:00 – 9:20, 138 CHEMISTRY
FALL 2009

Instructor: Chrysoula Vasileiou
Office: 538B Chemistry
Phone: 355-9715 ext. 125
Email: vassilio@chemistry.msu.edu
Office hours: Monday, Friday 9:30 – 11:00 AM
Class Website: http://www2.chemistry.msu.edu/courses/cem252/

Text: John McMurry, **Organic Chemistry,** 7th Edition, Brooks/Cole, 2008

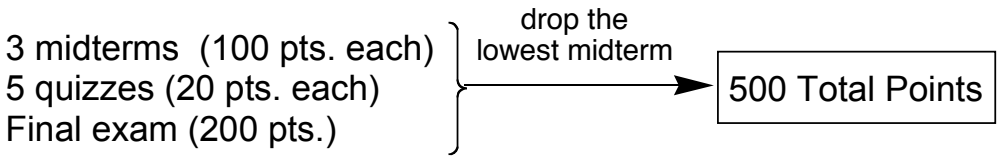
John McMurry, **Study Guide and Solutions Manual**, 7th Edition, Brooks/Cole, 2008

Course Description:

The second semester of organic chemistry is a natural progression of the material covered in the first semester. Simply stated, you need a mastery of the concepts and reactions covered in CEM 251 in order to follow and do well in CEM 252. All students are encouraged to review the course work presented in CEM 251. In CEM 252, we will begin with introducing aromaticity and reactions of aromatic compounds. Next, we will gradually introduce various functional groups commonly found in organic chemistry, starting with alcohols and ethers. A large portion of the semester will be spent on the study of carbonyl compounds, their reactions and properties. The last functional group studied will be amines followed by a brief introduction to pericyclic reactions. We will also look at the chemistry of carbohydrates, amino acids and lipids. The large battery of reactions you have learned and will learn in CEM 252 should be viewed as tools for synthesis of organic molecules. You are expected to propose syntheses of molecules based on the mastery of the reactions you know. This requires you to know your 'tools' well in order to use them for synthesis of compounds.

Examinations and Grading:

The course grade will be based on your cumulative score on three midterms, quizzes, and the final. Six quizzes are given during recitations, they are unannounced and the best five scores are used towards your final grade. The lowest midterm grade will be dropped. There will be NO make-up quizzes or exams. University rules stipulate that you will receive a 0.0 for the course if you do not take the final exam.



Total Points	Percent	Grade	Total Points	Percent	Grade
425	85	*4.0*	250	50	*2.0*
390	78	*3.5*	225	45	*1.5*
350	70	*3.0*	200	40	*1.0*
300	60	*2.5*	<200	<40	*0.0*

Policy Regarding Academic Dishonesty: Academic dishonesty of any kind will not be tolerated in this course. Please see the following website for information regarding Michigan State University's policy regarding academic dishonesty:
http://www.msu.edu/unit/ombud/honestylinks.html

Regrading of Exams**:** Hourly exams will be returned during the regularly scheduled recitation following the exam. Any regrading requests must be made at that time to the recitation instructor. Except for obvious addition errors, no exam which has left the recitation room with a student will be considered for regrading. Final exams are not returned but are kept by your recitation instructor.

Posting of Exam Scores**:** After the exams have been graded and recorded, you can check the cemscores website for your grade: cemscores.msu.edu or from the MSU home page or the chemistry department home page enter just the word cemscores into the address bar area (do not include www in front of it). You can also check the grades of your quizzes in this website.

Recitations:

This is your chance to ask the questions you were not able to ask in lecture. Your teaching assistants are a great source of information and help. Attendance is very important if you want to learn organic chemistry. Listening to lecture does not teach you the problem solving skills you need. The goal of recitation is to guide you through problems, answer questions regarding the lectures, and teach you how to *talk* organic chemistry. Finally, all the quizzes are given in recitation. The quizzes are unannounced, there will be no make-up quizzes given. The following is the list of recitations for this class. It is important that you know the name of your recitation

instructor and write it and your section number on all of your quizzes and exams. This will ensure that your scores are properly recorded.

Section 1	M	8:00 – 8:50 AM	Rm. **109** Chemistry
Section 2	W	8:00 – 8:50 AM	Rm. **283** Chemistry
Section 3	W	1:50 – 2:40 PM	Rm. **183** Chemistry
Section 4	M	11:30 – 12:20 PM	Rm. **183** Chemistry
Section 5	F	9:10 – 10:00 AM	Rm. **085** Chemistry
Section 6	M	11:30 – 12:20 PM	Rm. **109** Chemistry
Section 7	F	3:00 – 3:50 PM	Rm. **085** Chemistry
Section 8	M	9:10 – 10:00 AM	Rm. **281** Chemistry
Section 9	Th	4:10 – 5:00 PM	Rm. **283** Chemistry
Section 10	F	8:00 – 8:50 AM	Rm. **110** Chemistry
Section 11	W	9:10 – 10:00 AM	Rm. **281** Chemistry
Section 12	Th	1:50 – 2:40 PM	Rm. **136** Chemistry

Problem Sets:

Suggested problems from the book for each chapter are attached at the end of this syllabus. They will not be collected and graded, however, I strongly suggest that you attempt the problems to gauge your understanding of the material and test your readiness for the exams. I discourage you from looking at the solutions manual without attempting to do the problems. Try to use your text and notes to see if you can solve the problems. Remember, if you are not able to solve the problems, it probably means that you have not understood the subject matter. Go back and read, do not just look up the answer! It is much more beneficial for you to struggle through the problem and learn, as opposed to looking at the solution manual and see how it is done.

In addition, throughout the semester several problem sets will be posted on the CEM252 web site, (*http://www2.chemistry.msu.edu/courses/cem252/*), along with their solutions. These problem sets will not be graded but you are strongly advised to study them and make sure you know how to solve them. Recitations and office hours is a good time to discuss these problems and ask for help.

How much should you study?

A conservative estimate is about 4 hours per each lecture. Begin from day one. It is important to keep up with the lectures. More than any course, organic chemistry depends on previously discussed material. It is very easy to fall behind.

TENTATIVE LECTURE AND EXAM SCHEDULE

Date	Topic	Reading Assignment
September 3	Aromatic Chemistry	Chapter 15, 16
September 8	" "	" "
September 10	" "	" "
September 15	Alcohols and Phenols	Chapter 17
September 17	" "	" "
September 22	Ethers and Epoxides	Chapter 18
September 24	" "	" "
September 29	Aldehydes and Ketones	Chapter 19
October 1	***1st Midterm***	***Chapters 15, 16, 17, 18***
October 6	Aldehydes and Ketones	Chapter 19
October 8	" "	" "
October 13	Carboxylic Acids	Chapter 20
October 15	" "	" "
October 20	Acyl Derivatives	Chapter 21
October 22	" "	" "
October 27	Enolates	Chapter 22
October 29	***2nd Midterm***	***Chapters 19, 20, 21***
November 3	Enolates	Chapter 22
November 5	Condensations	Chapter 23
November 10	" "	" "
November 12	Amines	Chapter 24
November 17	" "	" "
November 19	Pericyclic Reactions	Chapter 30
November 24	" "	" "
November 26	Thanksgiving	-------
December 1	Carbohydrates	Chapter 25
December 3	***3rd Midterm***	***Chapters 22, 23, 24, 30***
December 8	Carbohydrates/Nucleic Acids	Chapter 25, 28
December 10	Peptides/Lipids	Chapters 26, 27

FINAL EXAM: WEDNESDAY, DECEMBER 16, 7:45-9:45 AM, *COMPREHENSIVE.*

Suggested Problems from the book:

- You should know how to solve **ALL** problems discussed within the text in each chapter.
- Try to do **all** problems at the end of each chapter. If time is an issue **focus more on the following**:

Chapter 15: 15.18; 15.19; 15.20; 15.24; 15.25; 15.26; 15.29; 15.31; 15.32; 15.33; 15.37; 15.38; 15.39; 15.41; 15.45; 15.46

Chapter 16: 16.29; 16.30; 16.31; 16.32; 16.33; 16.34; 16.35; 16.36; 16.37; 16.45; 16.51; 16.52; 16.53; 16.54; 16.55; 16.60; 16.62; 16.69; 16.71; 16.73

Chapter 17: 17.25; 17.29; 17.30; 17.31; 17.32; 17.33; 17.34; 17.35; 17.36; 17.39; 17.40; 17.41; 17.44; 17.52; 17.55; 17.57; 17.60; 17.61; 17.62; 17.63; 17.64; 17.65

Chapter 18: 18.23; 18.24; 18.25; 18.26; 18.27; 18.28; 18.29; 18.31; 18.39; 18.40; 18.49; 18.50; 18.51; 18.54; 18.55; 18.57

Chapter 19: 19.30; 19.32; 19.33; 19.34; 19.35; 19.36; 19.37; 19.40; 19.41; 19.42; 19.45; 19.48; 19.53; 19.65; 19.66; 19.67; 19.68; 19.69; 19.70

Chapter 20: 20.21; 20.22; 20.25; 20.26; 20.27; 20.28; 20.29; 20.30; 20.36; 20.38; 20.39; 20.42; 20.43; 20.47; 20.48; 20.49; 20.50; 20.52; 20.58; 20.59; 20.60

Chapter 21: 21.32; 21.33; 21.35; 21.36; 21.37; 21.42; 21.52; 21.54; 21.55; 21.56; 21.61; 21.63; 21.64; 21.65; 21.66; 21.68; 21.69; 21.70

Chapter 22: 22.20; 22.21; 22.22; 22.23; 22.24; 22.25; 22.26; 22.27; 22.28; 22.30; 22.31; 22.35; 22.44; 22.46

Chapter 23: 23.27; 23.28; 23.35; 23.37; 23.39; 23.42; 23.44; 23.45; 23.46; 23.52; 23.54; 23.61; 23.62

Chapter 24: 24.30; 24.31; 24.32; 24.33; 24.34; 24.35; 24.37; 24.39; 24.40; 24.41; 24.42; 24.43; 24.44; 24.63; 24.64; 24.72; 24.73; 24.74

Chapter 30: 30.13; 30.16; 30.17; 30.18; 30.19; 30.20; 30.29

Chapter 25: 25.30; 25.31; 25.32; 25.34; 25.35; 25.37; 25.39; 25.40; 25.42; 25.43; 25.67.

Chapter 26: 26.27; 26.28; 26.29; 26.35; 26.39