

## CHEMISTRY 331, Fall 2009 Syllabus MWF 10:00 a.m.; 1002 Gilman Hall

**Instructor:** Dr. Tom Barton (2105 Gilman, Phone 294-7655), e-mail: barton@ameslab.gov (Put 331 in subject of e-mails)  
Office hours: Mon. 11:00 a.m. – 12:00 noon; Tues. 10:00 – 11:00 a.m.; Wed. 1:30 – 3:00 p.m.; Thurs 3:45 – 4:45 p.m.; and Fri. 11:00 – noon. (or by appointment).

**Textbook:** *Organic Chemistry*, 7<sup>th</sup> Edition, by John McMurry. An optional Study Guide & Student Solutions Manual is also available and **strongly** recommended.

**Website:** <http://avogadro.chem.iastate.edu/CHEM331/> This website contains the course outline, examination schedule, tentative lecture schedule, recommended problems to work in the book, some old exams and related detritus.

**Exams:** There will be four 100-point exams and a 150-point comprehensive final exam. All hour exams will be given during the class period. **THERE WILL BE NO MAKE-UP EXAMS.** Any regrades on an exam must be requested before the next exam.

**Grading:** The course grade will be based on the three best 100-point exam scores plus the final exam score (maximum total = 450 points). The lowest score on a 100-point exam or a missed hour exam will be automatically dropped. Cheating on an exam will earn a zero for that exam, which **cannot** be dropped in determining your course total. Plus-minus grading will be used. No drop slips will be signed after Friday, October 30, 2009. WebCT will be used to post grades and send emails to the class. If you do not log on to WebCT with any regularity, you are advised to set your WebCT mail to forward to your usual address.

**Disabilities:** If you have a documented disability requiring accommodations in this course, please make arrangements with me as soon as possible. Please request that a Disability Resources staff member prepare a SAAR form verifying your disability and specifying the necessary accommodations. Disability Resources is located on the main floor of the Student Services Building in room 11076. Their phone number is 4-7220.

**STUDENTS MAY NOT REGISTER TO AUDIT COURSES AFTER 5:00 P.M. FRIDAY, SEPTEMBER 4, 2009. AUDIT DOES NOT COUNT TOWARDS FULL-TIME STUDENT STATUS.**

### SCHEDULE

Aug. 24 Ch. 1 <u>Structure and Bonding</u>	Oct. 5 <i>Review</i>	Nov. 16 Ch. 13
Aug. 26 Ch. 1	Oct. 6 <b><u>EXAM II 6:30 PM</u></b>	Nov. 18 Ch. 14 <u>Dienes/UV</u>
Aug. 28 Ch. 2 <u>Acids / Bases</u>	Oct. 7 <i>No Class</i>	Nov. 20 Ch. 14
	Oct. 9 Ch. 9 <u>Stereochemistry</u>	
Aug. 31 Ch. 2	Oct. 12 Ch. 9	Nov. 23-27 <i>No Class</i>
Sept. 2 Ch. 3 <u>Alkanes &amp; Stereochemistry</u>	Oct. 14 Ch. 9	<i>Thanksgiving Vacation</i>
Sept. 4 Ch. 3	Oct. 16 Ch. 10 <u>Alkyl Halides</u>	
Sept. 7 <b>University Holiday</b>	Oct. 19 Ch. 10	Nov. 30 Ch. 15 <u>Aromaticity</u>
Sept. 9 Ch. 4 <u>Cycloalkanes &amp; Stereochem.</u>	Oct. 21 Ch. 10	Dec. 2 Ch. 15
Sept. 11 Ch. 4	Oct. 23 Ch. 11 <u>Rxns./Alkyl Halides</u>	Dec. 4 <i>Review</i>
Sept. 14 <i>Review</i>	Oct. 26 Ch. 11	Dec. 7 <i>Optional Review</i>
Sept. 15 <b><u>EXAM I 6:30 PM</u></b>	Oct. 28 Ch. 11	Dec. 8 <b><u>EXAM IV 6:30 PM</u></b>
Sept. 16 Ch. 5 <u>Org. Rxns Overview</u>	Oct. 30 <i>Review</i>	Dec. 9 <i>Comprehensive Review</i>
Sept. 18 Ch. 5		Dec. 11 <i>Comprehensive Review</i>
Sept. 21 Ch. 6 <u>Alkenes I</u>	Nov. 2 <i>Optional Review</i>	<b>TBD <u>FINAL EXAM</u></b>
Sept. 23 Ch. 6	Nov. 3 <b><u>EXAM III 6:30 PM</u></b>	<i>4 – 100 Pt. Exams</i>
Sept. 25 Ch. 7 <u>Alkenes II</u>	Nov. 4 <i>No Class</i>	<i>Drop lowest grade</i>
	Nov. 6 Ch. 12 <u>Mass Spec/IR</u>	<i>Final = 150 points</i>
Sept. 28 Ch. 7	Nov. 9 Ch. 12	
Sept. 30 Ch. 8 <u>Alkynes</u>	Nov. 11 Ch. 13 <u>NMR</u>	
Oct. 2 Ch. 8	Nov. 13 Ch. 13	

**FINAL EXAM TIME IS YET TO BE DETERMINED!!! DO NOT SCHEDULE VACATION TRAVEL UNTIL AFTER YOUR SCHEDULED EXAM TIME.**

**CHEM 178 – NOT CHEM 164 – IS A PREREQUISITE FOR CHEM 331. STUDENTS SHOULD NOTE THAT CHEM 331 IS COREQUISITE FOR CHEM 331L AND 333L. STUDENTS TAKING CHEM 331L OR 333L WILL BE REQUIRED TO DROP THE LAB COURSE IF THEY DROP OR AUDIT THE LECTURE COURSE.**

**Course Content:** The material will be covered in the order listed in the syllabus but it is always difficult to say which material might require more or less time. Thus, while the order of the material will remain constant, but the timing may vary a little from the schedule. A large amount of material will be covered in this course. It is extremely important that you keep up. You should read the appropriate chapter before the lecture covering that material in order to more easily follow the discussion. Suggested problems for each chapter are listed below. Homework will not be collected (thus, or graded) and the answers are available in the aforementioned *Study Guide & Solutions Manual*. It is strongly advised that you work as many of the problems in the text as you can find time to do. Do not assume that because I have not assigned a problem that being able to solve it is not important for you.

### HOMWORK PROBLEMS – CHEMISTRY 331

- Ch. 1 3, 4, 7, 8, 10, 11, 13, 14a, b, 16, 25, 27, 30, 31, 36-42, 46, 49, 50  
Ch. 2 1-6, 10b-d, 12-15, 17-19, 24-27, 29, 30, 33, 34, 36, 43, 47, 53, 56  
Ch. 3 1, 2, 4, 6, 8c, 9, 11, 12, 15, 17, 22, 24, 26, 32, 35, 38, 40, 42, 44, 48  
Ch. 4 1, 2, 4, 5, 9, 13, 18, 27, 32, 33, 37, 42, 43, 47, 51, 55  
Ch. 5 1, 5, 8-12, 20, 23, 26, 29, 30, 34, 38  
Ch. 6 1, 2, 4, 5, 10, 11, 14, 15, 24, 26, 29, 33, 39, 42, 45, 49, 53  
Ch. 7 2, 5, 7, 8-10, 12, 14-17, 24-27, 32, 35, 39, 41, 53  
Ch. 8 1, 3, 4, 5, 10, 13, 21-26, 28, 31, 35, 39, 41  
Ch. 9 1, 2, 7-9, 12, 15, 19, 23, 24, 31, 41-45, 63, 64, 74  
Ch. 10 1, 2, 7, 9, 10, 11, 20, 22-24, 35-37  
Ch. 11 4, 5, 8, 11, 12, 13, 15, 17, 19, 20, 27, 30, 34, 35, 40, 41, 42, 44, 49, 56  
Ch. 12 2, 3, 7, 8, 10, 27-30, 32, 34, 37, 39-42, 44  
Ch. 13 6, 8, 9, 11, 13, 14, 16, 18-21, 37, 38, 42, 49-67(as many as you can!)  
Ch. 14 2, 3, 7, 8, 9, 12, 14, 15, 20, 21, 28, 33, 36, 40, 48, 52, 57  
Ch. 15 1-3, 6, 7, 11, 12, 23, 25, 29, 30, 38, 40, 41, 46, 47

**Study Aids:** The Hour Examinations, Final Exams, and Answer Keys from Fall 2006 through Spring 2009 are available on the Chem 331 web site: <http://avogadro.chem.iastate.edu/CHEM331/>, either via the e-Reserve or by your computer (exams before Fall 2000 from Chem 331 are from a different textbook\*). Also available at the www address are Reaction Sheets. Also, McMurry, Organic Chemistry, 7<sup>th</sup> Edition and Study Guide to Organic Chemistry with answers to all problems, and *Pushing Electrons* by Daniel Weeks, are available at the Reserve Desk at the Parks Library and the Physical Chemistry Reading Room, 208 O&L.

\*Note that the only Chem 331 exams of Dr. Barton on file are from Spring 2008 and Fall 2008.