

Chemistry 233: Organic Chemistry I Spring 2012

Lec. 001, CRN# 10738

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Office Hours: Monday (1:00-2:00 PM) and Thursday (1:00-2:30 PM)
Other times by appointment. Please do not hesitate to ask or email.

Lecture: Section 001 (MTW – 9:30-10:20 AM) in Clark Hall Room 112

Laboratory/Co-requisite: Chemistry 235: Organic Chemistry Laboratory is a co-requisite of Chemistry 233. You should be enrolled in Chemistry 235 concurrently with Chemistry 233. You are not permitted to take Chemistry 235 before Chemistry 233 without approval. *Chemistry 235 laboratory WILL NOT be held during the first week of classes.* If you do not show up for the first laboratory, you will be administratively dropped from the laboratory class list.

Chemistry 235 is a different course and a separate entity. This means that your Chemistry 235 laboratory grade will not influence (positively or negatively) your Chemistry 233 final grade.

Course Pre-requisite: Passing grade in Fundamentals of Chemistry II (Chemistry 116) or Principles of Chemistry II (Chemistry 118). For chemistry majors, a grade of C or better in Chemistry 116 or 118 is required.

Course Objectives: Learn the basic principles of organic chemistry, (i) understand modern structural concepts, (ii) predict the effect of structure on physical and chemical properties, (iii) determine reactions, reaction products, and their mechanisms, and (iv) identify applications to syntheses.

Textbook: “Organic Chemistry”, 3rd ed., by Janice G. Smith, (2011), McGraw-Hill Publisher. Required of all students.

“Student Study Guide/Solutions Manual”, to accompany Organic Chemistry, 3rd ed., by J.G. Smith and E.R. Smith Berk, (2011), McGraw-Hill Publisher. The solutions manual is strongly recommended.

ChemDraw Homework: Homework will be administered and must be completed using the WVU site license subscription to ChemDraw Std 12.0 – a software tool for drawing chemical structures. The site license means that any student with a valid university email address (@mix.wvu.edu, @mail.wvu.edu, or @wvu.edu extensions) can freely download the ChemDraw Std. 12.0 software and use it for one year. To download ChemDraw Std. 12.0 and access any related database subscriptions, go to:
<http://sitesubscription.cambridgesoft.com/sitelicence.cfm?sid=2327>

- At the “Site License Verification” page, input your WVU email address (with @mix.wvu.edu, @mail.wvu.edu, or @wvu.edu extension)
- Hit Continue at the next screen
- When you get to the page “Sign in to Perkin Elmer Informatics”, you must first **Register** for a free Informatics Membership. Read the Registration instructions to the right of the page, click register, and fill out the information for a membership. Be sure to use your WVU email address.

- Click on the software for download on either Windows or MacIntosh computer and save the file to your computer
- Meanwhile, check your email (the one you input for the subscription) as you should receive an email message from informatics.customer_service@perkinelmer.com with the Serial #. You will need to input this Serial # for registration of the ChemDraw software.
- Double click on the downloaded/saved ChemDraw file and input the registration information (your name, institution, and serial number, etc.)
- That should be it and you should have use of the ChemDraw Std. 12.0 program for one year.

If you need more information, please contact your instructor or you can get more information by calling CambridgeSoft Customer Service at 1-(800)315-7300 or 1-(617)588-9300.

Details for completing homework using ChemDraw will be provided at a later date. The homework average is worth 6% of the final numerical grade.

Molecular Models: by S.D. Darling (available from ACS Student Affiliates). These kits will be sold prior to Chemistry 235 lab during the second or third week of classes. Please note that models cannot be used during exams.

Calculators: Only **non-programmable calculators** may be used during quizzes and exams. Scientific calculators (\$8-\$12) that perform all the needed mathematical calculations (including logarithms) are available at the WVU Book Store as well as at various commercial establishments. Programmable calculators will be confiscated at the examination site or the student will not be allowed to take the exam. ***Prohibited at exam/quiz sites: Any type of communication or electronic device (cell phones, text messaging devices, ipods, headphones, iflip videos, etc.). Place electronic devices in your book bag which itself must be placed at the front of the exam room.***

Exams: Four exams will be given on Thursday evenings from 7-8:30 PM. Exam locations will be announced prior to the first exam. A comprehensive final exam will be given according to the university schedule and based on class meeting time. The schedule for exams is:

2012 Date	Exam
Thursday Feb. 2	Exam #1
Thursday Feb. 23	Exam #2
Thursday March 15	Exam #3
Thursday April 12	Exam #4
Monday April 30	Final Exam (8-10 AM)

Any type of communication or electronic device (cell phones, text messaging devices, ipods, headphones, iflip videos, etc.) is prohibited at exam/quiz sites. Place electronic devices in your bookbag which itself must be placed at the front of the exam room. Any student caught with an electronic device during exam/quiz will receive an "F" for the exam/quiz and will be brought up on charges of Academic Dishonesty. Remove covers from non-programmable calculators before entering the exam/quiz site.

Final Exam: The final exam will be comprehensive and cumulative. Therefore, it will be weighted more heavily in the final grade determination and is worth more than any of the individual exams. Due attention will be given to the cumulative nature of the learning process with emphasis being placed on major topics and concepts. Your study during the semester should be designed for comprehensive and long-term retention of the factual material, principles, and use of these. "Cramming" for individual exams largely defeats the purpose of a college education.

Criteria for Evaluating and Grading Work: Exams will consist of two parts, (i) a series of multiple choice questions and (ii) up to four pages of partial credit work (mechanisms, predict products, draw all possible isomers). Multiple choice questions will be marked as correct or incorrect (i.e. no partial credit). Any questions regarding scores for exams should be addressed during office hours and within 24 hours from the time of the exam's return. See Exam re-grading policy.

Exam Re-grading: If you believe an error has been made in grading an exam, you must give the *unaltered* exam to the instructor, along with written explanation on separate paper of why exam re-grading is necessary, within 24 hours from the time it was returned. If you request re-grading of a specific question, not only that question but the entire exam will be re-graded by the instructor. As a result, your score could increase, decrease, or remain the same. Graded exams will be photocopied prior to return and photocopy used for comparative purposes during re-grading.

Late Work Policy: Late submissions of ChemDraw homework will be penalized by a deduction of 10% per day each day for three days. After three days, the homework will no longer be accepted and you will receive a score of zero for the assignment.

Academic Dishonesty: A full range of options is available to the instructor in the event of a discovery of academic dishonesty (i.e. cheating). These options are stated in the West Virginia University Student Conduct Code (see *the Student Conduct Code* at http://studentlife.wvu.edu/office_of_student_conduct), and include dismissal from school or assignment of an unforgivable "F" for a course grade. These options will be vigorously enforced. Academic dishonesty includes: (i) submission of false records of academic achievement, (ii) cheating on assignments or examinations, (iii) taking, acquiring or using test materials without instructor permission, (iv) use of electronic/communication devices during an exam or assignment, (v) acting alone or in cooperation with another to falsify records or to obtain dishonest grades, and (vi) altering a graded exam and presenting that as original work to be regraded.

Make-ups: Make-up exams will only be given in the case of serious illness or emergency. If you will be out of town on university business, you must submit documentation *before* your trip. **Only ONE make-up exam will be given.** All requests for make-up exams must be made within three days of the missed exam date. Make-up examinations scheduled after the time of the paper exam may be conducted as *oral examinations*, with students answering questions on the blackboard in the instructor's office. It is the student's responsibility to schedule a time with the instructor to take the make-up exam. Failure to complete the make-up exam at the scheduled time/date will result in a zero for the missed exam.

Calculation of Grade: The object is to give you the best possible grade which can be justified by your achievement in the course. The final grade will be based on the scores of the four exams (16% each), homework average (6%), and the final examination (30%) as:

Calculation of Final Numerical Grade	
Exam #1	16%
Exam #2	16%
Exam #3	16%
Exam #4	16%
Final Exam	30%
ChemDraw Homework Avg. (4)	6%
Attendance	0% or 1%
Final Num. Avg.	100%

Your final letter grade will be determined after calculation of your final numerical grade, which will then have a letter grade assigned to it. Maximum numerical averages for each letter grade are based upon the standard scale of 90-100% = A, 80-89% = B, etc.

Attendance Policy: Attendance will be checked each lecture using a WVU ID scanner. It is the student's responsibility to ensure that attendance has been properly recorded for each week of lecture. Any questions regarding attendance should be addressed during office hours or via email within one week of the class in question; students failing to do so will not receive credit. Students who swipe another student's ID will receive a zero for all assignments given that week and will also receive unexcused absences for the entire week of lecture. There is no makeup for missed classes, and students are expected to obtain missed notes from a classmate.

Attendance will be used in determining each student's final grade as shown below. There are no "excused absences", although minor adjustments may be made for personal emergencies. **Good attendance (3 or fewer absences) will be rewarded by addition of 1% to the final numerical grade.**

# Absences	Penalty
1-4	None
5-9	Final letter grade dropped by one (e.g., B→C)
10-14	Final letter grade dropped by two (e.g., C→F)
15-19	Final letter grade dropped by three (e.g., B→F)
> 19	Final letter grade dropped by four (e.g., A→F)

Class Policy: Each class period is 50 minutes in length, and students are expected to remain in their seats until dismissed by the instructor. If you have a valid reason for leaving class early, please let the instructor know before the start of class. All electronic devices must be turned off during lecture. Electronic devices used during class/laboratory time will result in class dismissal and an unexcused absence. The instructor reserves the right to deduct points for disruptive behavior (e.g. packing up things in loud/disruptive manner) during the class period.

Problems and Questions: Problem sets on each chapter will be posted on the ecampus website. Problem set answer keys will be provided prior to each exam. Within and at the end of each chapter in the text are numerous questions and problems. Specific text questions related to the material covered in lecture will be assigned from each chapter via homework sheets. Answers to text questions can be found in the "**Student Study Guide/Solutions Manual**", to accompany your text.

Although these assignments (problem sets and text homework) will not be collected and graded, they should help you understand the various concepts in lecture and thereby **prepare you for the examinations**. Problem sets and text homeworks are critical; if you do not master the material in these assignments you will not perform well on the exams

Extra Help? Teaching Assistants: Besides seeking help from your instructor, additional help is also available from your laboratory teaching assistant. This assistance is offered free of charge. Ask your teaching assistant when he/she has office hours. In the event of problems in this line of assistance, please inform Dr. Babb, so that she may be of assistance. **Academic Resource Center:** Another free source of assistance is from the Academic Resource Center (locations: Brooke Tower, Downtown library, and WVU Up All Night). Past experience indicates that the demand for assistance far exceeds the supply of available assistance. See http://retention.wvu.edu/academic_resource_centers for more information. **Tutors:** As a last resort, help is available at a financial cost to you, the student. A list of tutors is

available from the chemistry department office (217 Clark Hall). The assistance of a tutor will cost you money, the cost of which is negotiated between the tutor and the student. The effectiveness of tutoring has been shown to be primarily dependent on the student, since some students achieve great success while other students have no improvement from the same tutor. **Web based homework:** Homework and exam support at “we-learn-horizon” and link is www.welearnhorizon.com. For technical support, contact Dr. John Penn at <http://www.as.wvu.edu/~jpenn>. **Websites:** Information about any compound can be found simply by using Google or your favorite search engine. Safety information about any compound is found on the Material Safety Data Sheet (MSDS). These sheets are legal documents created by manufacturers, primarily to protect themselves. Therefore, the effects are usually overstated, since it is better to overstate dangers when it comes time to defend a lawsuit. For example, try “sodium chloride MSDS” in your favorite search engine. You will see that sodium chloride, even though it is ordinary table salt, is considered a dangerous chemical when administered in certain ways to your body. You can find organic chemistry apps for your ipod at <http://www.aceorganicchem.com/organic-chemistry-iphone-app.html>. Not sure how good these apps are but check out the consumer comments before deciding to purchase. If you find a useful website or app, let me know! Dr. Penn recommends the site Web-sters Organic Chemistry Site (<http://www.chemconnections.org/Websters/>). Feel free to explore.

Academic Integrity: *The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at http://studentlife.wvu.edu/office_of_student_conduct. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the nature. [adopted 2-11-08]*

Academic dishonesty, as defined in Article III Section B of the WVU Student Conduct Code, will be dealt with according to University policy as described in Article IV.

Social Justice Statement: *West Virginia University is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran’s status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.*

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Disability Services (293-6700).

Disclaimer: *The schedule, policies, and assignments within this syllabus are subject to change in the event of extenuating circumstances.*

Chemistry 233
Tentative Lecture Syllabus

Spring 2012

Instructor: Dr. M. Richards-Babb (Dr. Babb)-Office Room 461 CRL
Text: Organic Chemistry, 3rd ed., Smith

Day of	Text Chapter Coverage
Jan. 9	Chapter 1: Structure and Bonding
Jan. 11	Chapter 1: Structure and Bonding
Jan. 13	Chapter 2: Acids and Bases
Jan. 16	No Class (MLK Recess)
Jan. 18	Chapter 2: Acids and Bases
Jan. 20	Chapter 3: Intro. to Organic Molecules and Functional Groups
Jan. 23	Chapter 3: Intro. to Organic Molecules and Functional Groups
Jan. 25	Chapter 3 & Chapter 4: Alkanes
Jan. 27	Chapter 4: Alkanes
Jan. 30	Chapter 4: Alkanes
Feb. 1*	Chapter 4: Alkanes
Feb. 3	Chapter 4: Alkanes
Feb. 6	Chapter 5: Stereochemistry
Feb. 8	Chapter 5: Stereochemistry
Feb. 10	Chapter 5: Stereochemistry
Feb. 13	Chapter 6: Understanding Organic Reactions
Feb. 15	Chapter 6: Understanding Organic Reactions
Feb. 17	Chapter 6: Understanding Organic Reactions
Feb. 20	Chapter 7: Alkyl Halides and Nucleophilic Substitution
Feb. 22*	Chapter 7: Alkyl Halides and Nucleophilic Substitution
Feb. 24	Chapter 7: Alkyl Halides and Nucleophilic Substitution
Feb. 27	Chapter 7 & Chapter 8: Alkyl Halides and Elimination Reactions
Feb. 29	Chapter 8: Alkyl Halides and Elimination Reactions
Mar. 2	Chapter 8: Alkyl Halides and Elimination Reactions
Mar. 5	Chapter 8 & Chapter 9: Alcohols, Ethers, and Epoxides
Mar. 7	Chapter 9: Alcohols, Ethers, and Epoxides
Mar. 9	Chapter 9: Alcohols, Ethers, and Epoxides
Mar. 12	Chapter 9: Alcohols, Ethers, and Epoxides
Mar. 14*	Chapter 9 & Chapter 10: Alkenes
Mar. 16	Chapter 10: Alkenes
Mar. 19	Chapter 10: Alkenes
Mar. 21	Chapter 10 & Chapter 13: Mass Spectrometry and Infrared Spectroscopy
Mar. 23	Chapter 13: Mass Spectrometry and Infrared Spectroscopy
Apr. 2	Chapter 14: Nuclear Magnetic Resonance Spectroscopy
Apr. 4	Chapter 14: Nuclear Magnetic Resonance Spectroscopy
Apr. 6	No Class (Recess)
Apr. 9	Chapter 14: Nuclear Magnetic Resonance Spectroscopy
Apr. 11 *	Chapter 14: Nuclear Magnetic Resonance Spectroscopy
Apr. 13	Chapter 14 & Chapter 11: Alkynes
Apr. 16	Chapter 11: Alkynes
Apr. 18	Chapter 11: Alkynes
Apr. 20	Chapter 12: Oxidation and Reduction
Apr. 23	Chapter 12: Oxidation and Reduction
Apr. 25	Chapter 12: Oxidation and Reduction
Apr. 27	REVIEW
April 30*	Final Exam (8:00 AM-10:00 AM; 112 Clark Hall)

*Indicates day of/before an exam.