

SYLLABUS for CHEMISTRY 2310

ORGANIC CHEMISTRY I

Lectures: Monday, Wednesday and Friday 8:35 AM-9:25 AM HEB 2008

Discussion: (a) Th 7:30-8:20 AM HEB 2008

(b) Th 8:35-9:25 HEB 2008

(c) **Additional Discussion (Rainier):** W 6:30-7:30 PM HEB 2008

(d) **SI Sessions:** TBD

Instructor: Dr. Jon Rainier

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Office Hours: Monday (in office) 10:00-11:00 AM; Tuesday (in office) 2:00-3:00 PM; Tuesday (virtual (via Canvas)) 5:00-6:00 PM or by appointment

Discussion Leaders:

Jacob Acharte, Anna Adams, Kyung-In Baek, Dane Barton, Amanda Bischoff, Walker Clark, Zack Cramer, Rebekah Edwards, Kelly Frappier, Jianhuai Hu, Christina Hughes, Nicole Jensen, Mark Khoury, Nancy Ann Little, Alexander Marchese, Spencer Merrick, Peter Millson, Jennifer Nhan, Hunter Ross, Jeremy Sanchez, Alicia Taase, Deric Thomson, Michelle Tiem, Phuong Tran, Tyrell Turner, Jordan Walker, Bradley Weaver, Haley Wilson

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- **Required Texts:** (1) "Organic Chemistry" by Janice Gorzynski Smith, McGraw Hill, 3rd Edition, 2010 [2nd Edition will suffice]. The ebook version can be purchased from several sites (CourseSmart, Collegebookrenter, Bookrenter, etc.) or directly from McGraw-Hill at http://connect.mcgraw-hill.com/connect/shortUrl.do?accessUrl=j_rainier_fall_mwf_830
- **Highly Recommended Equipment:** Turning Point Clicker
- **Highly Recommended:** (1) "Organic Chemistry I as a Second Language," David R. Klein (any edition); (2) Molecular Model Set (3) Sapling Learning Online Homework.
- **Class Objective:** To study and begin to understand organic chemistry
- **Methods:** Lectures and problem solving
- **Prerequisites:** General Chemistry. It is highly recommended that you take the lab course that corresponds to this class (Chem 2315).

- Philosophy:** Organic chemistry is a science that is central to chemistry, materials science, and biology in that it deals with molecular interactions. Much of what you will learn in this class will serve as a fundamental basis for your chosen discipline (organic chemistry, medicinal chemistry, materials, pharmaceuticals, medicine, etc.). It will be very difficult to learn this science by “simply” memorizing different reactions without an understanding of the fundamental concepts that are the basis for these reactions.

Lecture and Exam Schedule

TOPIC	DATES (Approximate except for exams)	Recommended Problems
Introduction, Structure and Bonding (Ch. 1)	August 20, 22, 24, 27	Ch. 1: 39-43, 45, 46, 48-56, 58-62, 64-70, 72-75, 77, 78, 81, 83, 84-86
Acids and Bases (Ch. 2)	August 29, 31 September 5	TBA
Functional Groups (Ch. 3) IR, NMR (Ch. 13,14)	September 7, 10, 12	TBA
Alkanes (Ch. 4) IR, NMR (Ch. 13, 14)	September 14, 17, 19	TBA
Stereochemistry (Ch. 5) NMR (Ch. 14)	September 21, 24, 26	TBA
Exam 1	September 28	
Organic Reactions (Ch. 6) IR, MS, NMR (Ch. 13, 14)	October 1	TBA
Alkyl Halides and Nucleophilic Substitution (Ch. 7)	October 3, 5, 7	TBA
Elimination Reactions (Ch. 8)	October 15, 17, 19	TBA
Alcohols, Ethers, and Epoxides (Ch. 9)	October 22, 24, 29	TBA
EXAM 2	October 26	
Alkenes (Ch. 10)	October 31, November 2, 5	TBA
Election 2012	November 6	
Alkynes (Ch. 11)	November 7, 9, 12	TBA
Redox Reactions (Ch. 12)	November 14, 16, 19	TBA

Mass Spectrometry (Ch. 13)	November 26, 28	TBA
EXAM 3	November 30	
Review	December 3, 5, 7	
FINAL EXAM	December 10 (8:00 AM to 10:00 AM)	

Note that there will not be class on the following days: September 3 (Labor Day); October 8, 10, 12 (Fall Break); November 21, 23 (Thanksgiving). Last day of class is December 7

- Examinations:** *Please bring a picture ID to the exam. Exams must be taken in pencil.* There will be three in-class midterm exams and a comprehensive final exam. The dates for the exams are listed in the schedule above. The examination questions will involve short answer descriptions and fill-in-the-blank problem solving.
- Discussion Sessions:** Peer-led discussion sessions will be dedicated to worksheets, answering your questions and/or working some of the recommended problems from the Smith book. Discussions begin on Thursday August 23.
- Worksheets:** During the discussion sessions, worksheets will be assigned, completed, and graded. Please bring both the Klein and Smith texts to discussion with you. During these sessions you will work together in groups of 2 or 3. The Discussion Leaders will be available during each session to help you as necessary. Turn in your worksheet along with the names of your group members at the end of the period *even if you don't finish*. The worksheet and answers will be posted at the end of the week so that you can keep working on the assignment. *It is highly recommended that you finish each assignment.* Each of these exercises will be worth 5 points. Scoring for the worksheet will be as follows: 5 points for showing up punctually and making a reasonable effort, 1 point for showing up late or making a really weak effort, and zero points for not showing up or arriving too late to contribute (ca. >10 minutes). To get credit for these exercises, you must attend the Discussion to which you have registered unless you have my (Dr. Rainier) approval in advance. Discussions begin on August 23.
- Clicker Points:** During each lecture, between zero and three multiple choice questions will be presented to the class. Each student is expected to consider the question and then choose one of the possible answers using a Turning Point “clicker”. A total of 4 “clicker points” will be awarded for a correct answer. A total of 3 “clicker points” will be awarded for an incorrect answer. A total of zero points will be awarded if no answer at all is entered. Therefore, it is in your best interest to try to answer each question correctly, but enter *something* (your best guess) regardless. At the end of the semester, those students who have accumulated $\geq 85\%$ of the total clicker points will get the maximum points (50) added to their overall score at the end of the semester. Those falling below the 85% threshold will receive a proportional amount of the 50 points. The clicker questions will be posted to Canvas at the end of each week. Clicker questions begin counting on September 12.

- **Online Homework:** Online homework questions are available through Sapling Learning: Go to <http://saplinglearning.com> to register and pay for an account.
- **Grading: Midterm Exams:** 300 points, Final Exam: 200 points. Total: 500 points
- **Extra Credit: Worksheets:** 50 points, Clickers: 50 points. Total: 100 points
- **+ 1 additional extra credit assignment** (20 points added directly to lowest exam score) ...stay tuned
- **Final grades:** Grades will *NOT* be assigned for each exam; if they were the typical breakdown would be A: 90-100%, A-: 85-90%, B+: 80-85%, B: 75-80%, B-: 70-75%, C+: 65-70%, C: 55-65%, C-: 50-55%, D+: 45-50%, D: 40-45%, D-: 35-40%. Two percentile scores will be computed for each student ((1) Exam alone; (2) Exam + Extra Credit). Your final grade will approximately follow the breakdown given above and will be based on the higher of the two percentile scores. The grade cutoffs for the class will be based on the exam percentiles. This means that extra credit will only be used to adjust your grade up (to a higher grade).
- **Makeup policy:** There will be no makeup examinations or makeup worksheet assignments for this class. Exceptions to this policy must be cleared in advance (only valid University related absences) and/or must be due to certifiable emergencies.
- **Regrade Policy:** Legitimate questions concerning the grading of an exam can be made up to 1 week after the exam has been handed back. In order to have the exam regraded, a separate sheet of paper justifying the reason for the regrade must be attached to the original exam. Statements like: “regrade number 5” will not be accepted. *Do not write on the exam!* No regrade requests where the examination itself has been modified in any way will be accepted.
- **Homework:** For each chapter, a list of recommended problems from the Smith text will be given. These are problems that would be good to study on your own and to correct on your own or in a study group. We will work some of these problems in class.
- **Canvas:** <http://webct.utah.edu>, log in with your id number and password, and then find CHEM 2310, section 001. At the end of each week, the clicker questions and worksheets will be made available on Canvas. Recent exams, answer keys, additional problems and grades will be posted here in a timely manner. Please note that “clicker points” will be tallied separately from exam and problem set points. Virtual office hours will be hosted by Canvas.
- **Last day to withdraw:** Friday, October 19
- **Student Code:** By submitting an assignment, you are representing that it is your own work and that you have followed the rules associated with the assignment. Incidents of academic misconduct (including cheating, plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating on an assignment) will be dealt with severely, in accordance with the Student Code (<http://>

www.regulations.utah.edu/academics/6-400.html). A single instance of academic misconduct may result in a failing grade for the exam or for the course. Multiple instances of academic misconduct may result in probation, suspension or dismissal from a program, suspension or dismissal from the University, or revocation of a degree or certificate.

- **Study Strategies:** There are many strategies that one can use to succeed in this course. The most tried and true involve some component of the following:
 - (a) ***Attend lectures and discussion sections.*** This mostly involves taking detailed notes but it also involves being prepared for lectures in advance and actively participating in lecture/discussions.
 - (b) ***Understand every homework problem.*** Be able to give a detailed answer to the questions without having to glance at an answer booklet. It is important to remember that each assigned question is like an onion: don't be afraid to peel back the outer layers.
 - (c) ***Engage yourself. Bounce questions and answers off of peers, TA's, or me. Come up with your own questions (and answers)...PROBLEM SOLVE!***
- **Be courteous-**I will not tolerate disruptions which include the reading of anything (newspapers, novels, magazines, textbooks), or the operation of computers, iphones (blackberries or other "smartphones"), cell phones, or any other electronic device (Turning Point Clicker excepted) during class. Turn cell phones to the off or vibrate position before class. Do not text-message during class as I find that to be incredibly rude.