CHEM 2452 ORGANIC CHEMISTRY
Syllabus for Spring Quarter 2014

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Required Text and Solutions Manual:
Organic Chemistry, 5th Edition, by Marc Loudon
Study Guide and Solutions Manual to Accompany Organic Chemistry, 5th Edition
by Marc Loudon and Joseph G. Stowell
Recommended Model Kit:
Molymod #62053 Molecular Modeling Set from Indigo Instruments

Course Objective. Your primary course objective is to master the subject matter of the second quarter of the three-quarter course in organic chemistry. An understanding of organic chemistry is essential for mastery of subsequent undergraduate courses in biochemistry and physical chemistry and for achieving the high test scores necessary for admission to post-graduate or professional school. Your secondary course objective is to gain insight into the logical progression of scientific inquiry and scientific discovery. When the goals of undergraduate, post-graduate, and professional school are completed, this insight you have gained and an appreciation of organic chemistry in the world within and around you will help you make well-informed decisions in your chosen profession and as citizens, neighbors, parents, children, and patients.

"The purpose of education is to nurture thoughtfulness. The lesser function of thinking is to solve puzzles and problems."

Albert Einstein

Lectures. The lectures will loosely follow the progression of the textbook at a pace of approximately one chapter per week. The lectures are presented on the board at a pace which should allow you to take notes and think critically about the material presented. I will use four ink colors. I suggest you have four colors to reproduce the material presented. Questions are welcome at any time during the lecture.

Problem/Help Sessions. Thursday problem-solving sessions provide an opportunity for you to test your command of the current lecture material by solving relevant problems taken from online sources.

Homework. Set aside time after every lecture to read the textbook, review your notes and complete some textbook problems. Three selected textbook problems relevant to each lecture are posted on Blackboard. Some exam questions will be taken from the selected textbook problems.

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Exams and Grading. There will be two 50 minute exams and one 105 minute comprehensive final exam. Each exam is worth 200 points. If your lowest 50 minute exam score is lower than your final exam score, the 50 minute exam score will be replaced by the final exam score. There are no make-up exams. If you miss a 50 minute exam for any reason, the 0 for that exam will be replaced by the final exam score. Your final grade will be based on 620 points: 600 points for the exams and 20 points for completion of the online course evaluation at the end of the quarter. Your course grade will be determined using the following scale:

	A		B			C			D		
Letter	A	A-	B+	B	B-	C+	C	C-	D+	D	D-
%	92	88	84	80	76	72	68	64	60	56	52
Points	570	546	521	496	471	446	422	397	372	347	322

Grade Curve. The raw score class average for each exam is announced in class and on Blackboard. If the raw score class average is below 144 points (72% C+) your grade will be curved. To illustrate, if the raw score class average is 130, 14 points will be added to your raw exam score. Your raw exam score and your curved exam score are provided for each exam. A letter grade for an exam can be determined using the scale above. Your curved exam score is posted on Blackboard. The maximum curved exam score is 200 points.

Exam Review/Corrections. Answer keys are posted on Blackboard for each exam. The exam answer key is reviewed point-by-point during the recitation after the exams are returned. Grading corrections on exams 1 and 2 should be submitted for review within two weeks after the answer key is reviewed. Grading corrections on the final exam should be submitted for review within the first two weeks of the next quarter.

Graded Document Retention. All graded materials will be returned. Graded materials still in my possession at the end of Fall Quarter 2014 will be shredded and recycled.

Cell Phones, Laptops, and Calculators in the Classroom

Turn off cell phones during class. Laptops are permitted during lecture and recommended during recitation problem sessions. Cell phones, laptops, and calculators must be put away during exams.

Lecture and Testing Accomodations

If you have a disability/medical issue protected under the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act and need to request accommodations, please make an appointment with the **Disability Services Program** (DSP); 303.871.2372/ 2278/ 7432; located on the 4th floor of Ruffatto Hall; 1999 E. Evans Ave. Information is also available on line at http://www.du.edu/disability/dsp.
See the *Handbook for Students with Disabilities.*

Honor Code of the University of Denver

To review your rights and responsibilities with respect to the Honor Code of the University of Denver, visit the website for the Office of Student Conduct at: www.du.edu/honorcode

I reserve the right to modify the syllabus and lecture schedule as necessary.

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Tentative Lecture Schedule

24 March	S_N2 Kinetics/Mechanism Alkyl Halide α and β substitution Nucleophilicity Basicity/Size/Solvation E2 Kinetics/Concerted Mechanism E2 Stereoselectivity/Regioselectivity S_N2 E2 S_N1 and E1	**Chapter 9** pp. 377 – 435
26	Continued	
28	Continued	
31	Continued	
April 2	Alcohol Eliminations/Substitutions Mesylate/Tosylate/Triflate Alcohol Oxidations Retrosynthetic Analysis	**Chapter 10** pp. 436 – 481
4	Continued	
7	Continued	
9	Williamson Ether Synthesis Ether from Alkene + Alcohol Epoxides Preparation and Reactions Glycols Preparation and Reactions Ozonolysis (Chapter 5) S-Oxidation	**Chapter 11** pp. 482 – 535
11	Continued	
14	Continued	
16	**Exam 1** on Chapters 8-11	
18	IR Spectroscopy Mass Spectrometry Molecular Ion Isotopes Fragmentation	**Chapter 12** pp. 536 – 577
21	Continued	
23	Continued	
25	^{1}H NMR Spectroscopy Chemical Shift Integration Signal Splitting ^{13}C NMR Spectroscopy	**Chapter 13** pp. 578 – 643
28	Continued	
30	Continued	
2	Continued	

5	Alkynes Reactions
	  Hydration
	  Hydroboration-Oxidation
	  Reduction
	Alkyne Anions
	Carbon-Carbon Bond Formation
		Chapter 14
		pp. 644 – 675

7	Continued	

9	Dienes Simple/Conjugated/Cumulated
	Conjugated Diene Reactions
	  Addition of HX/Allyl Carbocations
	  The Diels-Alder Reaction
	Benzene Structure and Aromaticity
	MO Theory
		Chapter 15
		pp. 676 – 739

12	Continued	
14	**Exam 2** on Chapters 12-14	
16	Chapter 15 Continued	

19	Aromatic Nomenclature
	Electrophilic Aromatic Substitution (EAS)
	General Mechanism for EAS of Benzene
	EAS Reactions of Benzene
	EAS Reactions of Substituted Benzenes
	  Directing Effect (o/m/p)
	  Activating/Deactivating Effect
		Chapter 16
		pp. 740 – 787

21	Continued	
23	Continued	
26	Continued	

28	Allylic/Benzylic Cation/Radical/Anion
	  S_N1
	  Free Radical Halogenation
	  RMgX and RLi Reagents
	  E2
	S_N2 Review
	Allylic/Benzylic Oxidation Methods
		Chapter 17
		pp. 788 – 821

30	Continued	
TBA	**FINAL EXAM** date/time on Web Central	