Queens College of the City University of New York
Department of Chemistry and Biochemistry
Organic Chemistry I

Chem 251 **Lecture Schedule** **Spring 2020**

Course Requirements:

Prerequisites for Chem 251: C or higher in Chem 114.4 and 114.1

Note: a C- in any pre or corequisite will not permit you to take 251.4/251.1!
You must earn a C or higher in Chem 251 to go on to Chem 252.

You will need access to Blackboard for handouts, including this syllabus. It is your responsibility to provide a valid e-mail address that you monitor. Announcements will be made via Blackboard and e-mail.

Lecture & Recitation: M, W 1:40 - 3:30 PM, Rm 101 Remsen Hall

Professor Jun Yong Choi, Science Bldg. B-304
Office Hour: Monday (3:40 – 4:40 PM, office) & Wednesday (12:30 – 1:30 PM, Remsen 101)
e-mail: Junyong.Choi@qc.cuny.edu - best way to contact Prof. Choi

LECTURE TEXT: (1) *Organic Chemistry*, 6th Ed., Loudon and Parise (2016), and *Study Guide and Solutions Manual to Accompany Organic Chemistry, 6th Ed.*, Loudon and Parise, Roberts & Co./Macmillan Learning;

LAB TEXT: Kenneth L. Williamson and Katherine M. Masters, Macroscale and Microscale organic experiments, 7th edition

Accommodations: If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet Dr. Choi immediately.

General Guidelines:

1. You must be able to use Blackboard for accessing the course materials. It is strongly suggested that you use Queens College email account for effective communication. Any other specific information regarding the course will be provided by the instructor in the first lecture, scheduled on Jan. 27, 2020, and during the class.
2. Molecular model kit is highly recommended (available on-line, about $20-60; the ~$30 kits on Amazon look good)
3. Employ a subject as "Chem 2514_Spring 2020_your name" when sending your email to Prof. Choi.
4. NEVER send any attachment files.
5. Cell phones must be off and away during this class.
6. Light meals are allowed during the class break (not in exams). Non-alcoholic beverages are allowed.
7. Homework will be assigned after every lecture, and the due date is the date of the next lecture (1:40pm).

Examinations: three mid-term and one final exams (ACS style and short answer final exam) (All mid-term and final exams are cumulative exams.)

Guidelines for examination:

1. All mid-term exams will be held in class as outlined in the Lecture and Examination Schedule.
2. The date of the final exam, 120 minutes in length, will be announced.
3. Mid-term exams are 50 min and will start at 1:40 pm. After the mid-term exam, there will be lectures.
4. Bring photo ID to exams.
5. Your seat will be assigned.
6. Molecular models are allowed during mid-term and final exams. Add molecular models to a Ziploc and bring it. No case is allowed.
7. Using books, notes, computers, cameras, cell phones, or calculators is not permitted during exams.
8. Cell phones are strictly prohibited for class and exams. (turn it off during class and exams)
9. You may have pencils, erasers, and molecular model kits in your possession – any other materials in your proximity will be removed.

10. Do not separate pages from the exam – leave all pages stapled together.
11. Write legibly. Use English. If I can't read or understand it, it will be a wrong answer.
12. All re-grade requests must be made in writing and attached to the exam.
13. You can take the exam in pen or pencil.
14. Do not under any circumstances write anything on the exam itself, after your exam is returned: exams are scanned prior to being returned.
15. There is no make-up exam. If a student is ill on a scheduled exam day and cannot take the exam, he/she should provide a medical doctor's note to Prof. Choi immediately after he/she recovers. Students will get INC grade.
16. If you are unable to provide a valid proof of absence within reasonable time periods, a zero grade will be assigned for the examination.
17. Cheating of any kind will not be tolerated. Your entire exam grade will be zero, and you will be brought up on charges of academic dishonesty to the College.
18. For clothing during the exam, we will follow the Departmental policy, which is same to MCAT rules for clothing during exams:

    You may not wear hats, scarves, or jewelry (except for religious purposes) during the test. If your clothing has a hood, it must not cover your head at any time. Cell phones are strictly prohibited for class and exams, and watches are prohibited from exams.

19. The final exam will be the American Chemical Society style exam. The study guide, which covers both semesters, can be purchased for $23 on-line at http://shopping.na1.netsuite.com/s.nl/c.3773982/sc.11/category.191/.f and there is a bundled on-line practice exam that will be included for a total of $27.
20. The final exam is a multiple choice and short answer exam (5 choices).

Grading:		
	Attendance/HW	**10%**
	3 Midterm Exams	**45%**
	On-line HW	**10%**
	Final Exam	**35%**
	Total	**100%**

Grading Scale: ≥ 97 (A+); 90-97 (A); 86-89 (A-); 82-85 (B+); 78-81 (B); 74-77 (B-); 70-73 (C+); 65-69 (C); 60-64 (C-); < 59 (F).

LECTURE AND EXAMINATION SCHEDULE

Date	Chapter	Topic
1/27, 1/29	1	Bonding and Structure
2/3, 2/5	2	Alkanes
2/10, 2/19	3	Acids and Bases, Curved Arrows
2/24, 2/26	4	Alkenes: Structure and Reactivity
3/2	5	Alkenes: Addition Reaction
3/4	1st mid-term (ch1~4)	Alkenes: Addition Reaction
3/4, 3/9	5	Alkenes: Addition Reaction
3/11, 3/16	6	Stereochemistry
3/18, 3/23	7	Cyclic Compounds, Stereochemistry of Reactions
3/25, 3/30	8	Noncovalent Intermolecular Interactions
4/1	9	Alkyl Halides
4/6	2nd mid-term (ch 5~ 8)	Alkyl Halides
4/6, 4/7	9	Alkyl Halides
4/20, 4/22	10	Alcohols and Thiols
4/27, 4/29, 5/4	13	NMR
5/6	12	Introduction to Spectroscopy
5/11	3rd mid-term exam (ch 9, 10, 12, 13), Ch12	
5/13	1~13	Review
5/15~5/21	Final exam	

Spring break: 4/8 ~ 4/16
A thirty-minute recitation will be held in class after the lecture of each chapter.
One-hour recitation (optional) will be held in the lecture hall during the office hour (Wednesday, 12:30~ 1:30)
Homework will be announced after every lecture and discussed during the thirty-minute and one-hour recitation.

On-line homework: From Sapling Learning - Organic Chemistry Question Sets: Sapling's chemistry questions are delivered in a web browser to provide real-time grading, response-specific coaching, improvement of problem-solving skills, and detailed answer explanations. Dynamic answer modules enable one to interact with 3D models and figures, utilize drag-and-drop synthetic routes, and draw chemical structures - including stereochemistry and curved arrows. Altogether, Sapling is cheaper than a tutor, provides more value than a solutions manual, and goes beyond a mere assessment exercise to give a learning experience.

Sapling Learning will be used for graded homework. You are required to purchase access to the Sapling Learning on-line problem web site for this course. The cost is $40.

To get started:

1. Go to www.saplinglearning.com/login to log in or create an account. The following link includes detailed instructions on how to register for your course: https://community.macmillan.com/docs/DOC-5972-sapling-learning-registering-for-courses.

2. If you have any issues during sign up or throughout the term, the technical support team will help. They can be reached by phone or by webform via the Student Support Community. Please go to the following link for detailed hours and information. https://community.macmillan.com/docs/DOC-6915-students-still-need-help

3. Work on the Sapling Learning training materials. The activities, videos, and information pages will familiarize you with the Sapling Learning user environment and serve as tutorials for efficiently drawing molecules, stereochemistry, etc. within the Sapling Learning answer modules. These training materials are already accessible in your Sapling Learning course.

4.

a) Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments.
b) During sign up or throughout the term, if you have any technical problems or grading issues, go to http://www.macmillanlearning.com/Catalog/techsupport and fill out the support form. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor and TAs.
c) To optimize your Sapling Learning experience, please keep your internet browser and Flash player up to date and minimize the use of RAM-intensive programs/websites while using Sapling Learning.
d) The course is listed under "City University of New York, Queens College (CUNY Queens)" and then look for "CUNY Queens College - CHEM 2514 – Spring20 - CHOI."
e) For each problem there are hints and answers, and for most there is explanatory reading material that you can access at the right hand side of the page in the **Resources** box under "Help with this topic" linking you to another organic textbook (labeled "Loudon – Organic Chemistry"), so if you are having trouble with the problems, there is a wealth of information available to help you.
f) There is a training module (with extra credit) that you should complete before you start on the chapter problems.

Course Preparation and Advice: Understanding the basic concepts from General Chemistry is critical to understanding reactions and mechanisms in organic chemistry. While these concepts are reviewed in Organic Chemistry, it will be assumed that this is the second time you are seeing this and that you understand the concepts. A brief list from the most recent Queens College textbooks for Chem 113 and 114 is given below; if you are transferring in, try match the topics with those in your textbook. Once you start Chem 251, read the book before lecture (yes, I did say this already up above!); take seriously the fact that you really do need to know and understand every reaction we cover in class (no exceptions). Understanding mechanisms will help you remember the reactions. **In most cases hiring a tutor will not help and most likely will be a hindrance because you will rely on the tutor rather than yourself**.

Review Chapters from Zumdahl & Zumdahl *Chemistry*:
Chem 113
Chapter 4: Types of Chemical Reactions and Solution Stoichiometry
Chapter 8: Bonding: General Concepts
Chapter 9: Covalent Bonding: Orbitals
Chem 114
Chapter 10: Liquids and Solids (Liquids only)
Chapter 14: Acids and Bases
Chapter 17: Spontaneity, Entropy, and Free Energy

or Silberberg *Chemistry*:
Chem 113
Chapter 3: Stoichiometry
Chapter 4: Major Classes of Chemical Reactions
Chapter 6: Thermochemistry
Chapter 9: Models of Chemical Bonding
Chapter 10: Shapes of Molecules
Chapter 11: Theories of Covalent Bonding
Chem 114
Chapter 12: Liquids and Solids (Liquids only)
Chapter 18: Acid – Base Equilibria
Chapter 20: Thermodynamics: Entropy and Free Energy

Course Objectives: Students will learn structural organic chemistry, including bonding, functional groups, stereochemistry, and conformational analysis, as well as the nomenclature for labeling these compounds and structures. In the first semester of organic chemistry a limited number of functional groups, including alkanes, alkenes, alkyl halides, alcohols, will be introduced along with their reactions. The mechanisms of those reactions and their common mechanistic features will be stressed. Understanding these mechanisms, rather than their rote memorization, is a principal objective, as only understanding of mechanisms will allow new reactions to be understood. Applications of reactions to multistep synthesis will be introduced. Determination of structures of compounds by spectroscopy including IR, MS, and NMR will be introduced. At the conclusion of this semester students will be prepared to start doing organic research if they so choose.

Bonus 10 points on your first mid-term exam: email to the teaching assistant, Zakir Hossain, at Zakir.Hossain60@qmail.cuny.edu, by Feb. 5th (5pm, EST), and mention that you read and understand this syllabus. Use the subject line: Chem 2514_Spring 2020_your name.