**City University of New York**

**Fall 2012**

**CHEM 26300: Organic Chemistry II**

**Section: ST (course code 0481)**

**Prerequisite:** CHEM 26100 and General Chem I & II; **A grade of C or higher is required in the prerequisite courses.**

**Meeting Place and Time:** Marshak MR/1, 6:00 PM – 7:50 PM Tuesdays and Thursdays

**Instructor:** Dr. Sean S. Boson

 Office: Marshak 1018 Telephone: (212) 650-8386 E-mail: sboson@ccny.cuny.edu

**Office Hours:** Wed 4:00 – 6:00 PM, Thu 11:00 AM – 12:00 PM, Thu 4:00 – 5:00 PM; others by appointment

**Course Description:**

This course involves systematic study of organic compounds, nomenclature, methods of preparation, physical and chemical properties (reactions), and mechanisms. Emphasis will be given to solving problems in each chapter.

**Required Textbook:** Organic Chemistry byT. W. Graham Solomons & Craig B. Fryhle, tenth edition, by Wiley (ISBN: 9780470935873)

The Text is available at the Wiley Website (direct buy): http://www.wiley.com. The package includes the Organic Chemistry 10th Edition Unbound with Study Guide/Solutions Manual and the WileyPLUS Set. The package also includes the binders. To access WileyPLUS, you must register: See instructions on last page. This package is also available at the CCNY Bookstore.

**Molecular models:**

(Dr. Darling’s) are available in the bookstore and on the internet (<http://www.darlingmodels.com/>

KIT #1 ISBN 0-9648837-1-6). Other suitable set of your choice is also acceptable.

**Problems**: The assigned problems are a very important part of the course. You are responsible for all problems, within and at the end of each chapter. If you can do the problems, you should do well on the exams.

**Optional Study Aid:** *Study Guide*/*Solutions Manual*. (Recommended)

*Molecular Model Set*

**Course Objective and Expectations:**

To study the structures, preparations, reactions and usage of different families of organic compounds including compounds of biological importance. Upon successful completion of the course, the students are expected to: (1) name common organic compounds, draw structures, (2) relate functional groups with their chemical and physical behaviors (3) propose reasonable methods for synthesizing different organic compounds, (4) predict reaction mechanisms, (5) distinguish organic compounds by simple chemical tests, and (6) understand chemical processes in biological systems.

***Course Learning Outcomes***

After completing this course, students should be able to understand:

1. Unsaturated conjugated systems.
2. Orbital conjugation and molecular orbital diagrams.
3. The Diels Alder reaction mechanistically and strategically.
4. Aromatic chemistry: including MO of benzene, Huckel’s rule, nomenclature, and associated physical properties.
5. The reactions of benzene and other aromatic systems.
6. The synthesis and reactions of aldehydes, ketones, imines, and amides.
7. The properties and reactions of amines.
8. The synthesis and chemical properties of carboxylic acids and their derivatives.
9. Enolate chemistry and its use in organic synthesis.
10. The classification, structure, and reactions of carbohydrates.
11. The structures, properties, and reactions of amino acids, and how amino acids are used to synthesize peptides.
12. Devise a plan for retrosynthetic analysis to solve multistep synthesis problems.

**Exams and Grading Policies.**  There will be three 90-minute exams and a final exam. Best two of the three exam scores will be used for calculating final grade, the lowest one will be dropped. Try not to miss any exam even if you do well in two of them. Missing an exam will negatively affect your final exam performance and can cost you a letter grade. Make-up exams are **not** offered. If you miss an exam for any reason, it will constitute your dropped exam even if you have a medical excuse for the missed exam. The final exam will be comprehensive and mandatory and may not be dropped. A pop-quiz may be given at/toward the end of each chapter (for a total of 9) without prior notification. No make-up quizzes can be offered. If you miss a quiz for an unavoidable reason, you can try to catch me the same day or the next day in my office (no promises). Final letter grades will be awarded only at the end of the semester after of all the tests and final exam are completed. Grading distribution is done generously in your favor, no more curve will be considered for any exams, so don’t ask for it (the answer will be, NO). Exam questions will comprise of all/mostly multiple choice type. Your overall course grade will be evaluated based on your performance and NOT on your effort or the time spent. **There will be NO extra work of any kind to improve your grade, so you must study hard throughout the semester.** The first and the second exams will be returned to you after grading is done, but the third and the final exams will not be given back to you, I’ll keep them, but you may come see your exam in my office at my convenient time. Your student IDs will be verified at the entrance before all exams. Also for any exam **you will be assigned a seat and you must sit accordingly**.

Best 2 exams (2x100) 200

Quizzes (8x10) 80

 Final exam 120

Grades will be determined by the percentage number of points accumulated out of a total of 400 points as follows:

 ≥ 94% A+

≥ 90% A < 93%

≥ 88% A- < 90%

≥ 86% B+ < 88%

≥ 81% B < 86%

≥ 78% B- < 81%

≥ 76% C+ < 78%

≥ 71% C < 76%

≥ 64% C- < 71%

≥ 55% D < 64%

 F < 55%

**Homework Assignments:** You are asked to do all problems inside the chapter and at the end of each chapter. WileyPlus quizzes will be assigned and tested for your evaluation to see where you stand as far as learning the course material, not for grading. Even though your homework will not be collected, it will be extremely difficult to pass the course without doing them. You are strongly advised to study 2 – 3 hours for each class hour of lecture. Make a study group with fellow students (2 – 3) and meet regularly for study sessions outside of classroom. This course is very time-demanding; you must spend lot of hours studying and solving problems in order to succeed. Once you are behind there will be little to no time to catch up. While selected problems will be worked during lectures, not all types of problems can, or will be covered. **Exam questions will often be based on or similar to those of the text problems.** You are strongly advised to buy molecular model set (may order through the campus bookstore, or internet).

**Classroom Etiquette:** Let's try to maintain a courteous, distraction-free learning environment. Please observe the following basic rules during lectures and exams:

* Obviously, turn off the cells and pagers. It's distracting when they ring. Also, it's rude to everyone else to have a private conversation during class. Yes, this is true even in the back of the classroom.
* Try not to pack up until class is completely over. It's rude and distracting to have notebooks closing and jackets and backpacks rustling while the professor is trying to finish up. I'll try my best to finish by the bell, and I hope you'll try your best to stay attentive until the bell.
* Please respect the wishes of your fellow students to listen to the lecture, and do not carry on conversations during class.

***A little courtesy goes a long way. Thanks for the cooperation.***

**Student Responsibility.**  The job of the Instructor is to provide the best possible presentation of the material that he can, and to provide the best learning environment that is possible. It is not the Instructor's job to make the student study or to accommodate student by making the standards of the course lower so that they can pass. It is the student's responsibility to put forth the effort required to learn the material and to become competent with it. This means mastering the problems in the text, solving the problems at the end of each chapter, and using good study habits. Students are strongly advised to study in a study group. The Instructor will be happy to help you achieve these goals. The student should:

* preview the lecture material before coming to class;
* attend every class and take notes for later review;
* bring the text to class to follow the lecture;
* do all problems from the text (both inside and at the end of each chapter) until you are competent - the first step to learning is to find out what you don't know;
* make a list of what you don't understand and bring it to class and/or office hours;

realize that this is a skills building course and so will require considerable study outside of class.

**Student Resources:**

Aside from my office hours, chemistry tutors will hold office hours where questions on the subject material may be asked. I will give you more specific details on this when they become available, or call the Chemistry Department office.

**Cheating:** Cheating is a serious offense that will not be tolerated in this course. I will take immediate action if I find any evidence of cheating. Never glance at other students’ paper while you are taking exams and quizzes. You are equally at fault if you allow your friend/other student see your exam paper (cover them up). If anyone witnesses someone cheating, please bring that to my attention. Please see the CCNY Policy on Academic Integrity at: <http://www1.ccny.cuny.edu/current/academic.cfm>

**Disability Accommodation:** “Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the AccessAbility Center (AAC). Prior to granting disability accommodations in this course, the instructor must receive written verification of a student’s eligibility from the AAC, which is located in NAC 1/218. It is the student’s responsibility to initiate contact with the AAC and to follow the established procedures for having the accommodation notice sent to the instructor.”

**Incomplete Grade:** INC may be assigned to students who have a passing grade in the course but who are unable to take the final examination due to conflict with another scheduled examination, death of spouse, injury sustained in a catastrophic incident and (proof is also required). An Incomplete Grade Agreement form must be signed by the Instructor before the student is allowed to take the makeup exam. Payment of a fee at the Bursar's office is required in order to take the makeup examination. Makeup exam for INC grades in Chemistry courses will be completed no later than two weeks after the end of classes.

**Attendance Policy:** If you miss the first two quizzes, you will be reported as **NEVER ATTENDED** to the registrar, unless you email me stating that you will be attending the course despite your first two missed quizzes.

**Tentative Lecture/Exam Schedule**

**Month / Day Chapter in Text Exam**

Aug 28, 30, Sept 4 Ch 13. Conjugated Systems

Sept 6, 11, Ch 14. Aromatic Compounds

Sept 13, 20, 27 Ch 15. Reactions of Aromatic Compounds

Oct 2, 4 Ch 16. Aldehydes and Ketones

**Oct 9**  **Chapter 13 - 16** **Exam 1**

Oct 11, 16, 18 Ch 17. Carboxylic Acids and their Derivatives

Oct 18, 23 Ch 18. α-Substitution Reactions of Carbonyl Compounds

Oct 25, 30, Nov 1 Ch 19. Condensation & Conjugate Addition Rxns of Carbonyl

**Nov 6 Chapters 17 - 19**  **Exam 2**

Nov 8, 13, 15 Ch 20. Amines

Nov 20 Ch 21. Phenols and Aryl halides

Nov 27, 29 Ch 22. Carbohydrates

**Dec 4 Chapters 20 - 22**  **Exam 3**

Dec 6, 11 Ch 24. Amino Acids, and Proteins

**Dec 18 Chapters 13 – 22, 24**  **Final Exam**

**Suggested problems students should solve:**

Chapter 13: 2 – 6, 9 – 22, 24 – 29, 34 – 42, 47.

Chapter 14: 1 – 6, 8, 16 – 22, 24.

Chapter 15: 3 – 5, 7 – 12, 14 – 19, 24 – 39.

Chapter 16: 1 – 6, 10 – 13, 15 – 17, 19 – 33.

Chapter 17: 1 – 7, 11 – 15, 18 – 36.

Chapter 18: 1, 7 – 12, 15, 16, 18 – 23, 26 – 32.

Chapter 19: 1 – 12, 14 – 17, 19 – 48.

Chapter 20: 1 – 7, 10 – 17, 19 – 35.

Chapter 21: 1 – 4, 6, 7, 9 – 11, 13 – 18.

Chapter 22: 1 – 3, 6 – 15, 17, 20 – 28.

Chapter 24: 1 – 7, 12 – 14, 17, 18, 20.

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# Getting Started

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1. Check that the section matches your schedule before you register!
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Additional Resources: **www.wileyplus.com/studentfdoc**

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