

Kingsborough Community College
The City University of New York

CHEMISTRY 03100

Summer 2007

Instructor:	Dr. Hanying Xu
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Lectures:	MTWTh 10:45-12:50pm
Lecture Room:	S245
Labs:	T, Th 1:00-6:00pm
Lab Room:	S335
Office Hours:	W 1:00-3:00pm
Textbook:	<i>Organic Chemistry</i> by L.G. Wade Jr., Sixth Edition, Prentice Hall, NJ, 2003.
Recommended:	Solutions Manual for " <i>Organic Chemistry</i> " by L.G. Wade Jr., Sixth Edition, Prentice Hall, NJ, 2003, and the Prentice Hall Molecular Model Set for Organic Chemistry
Lab Manual:	" <i>Experimental Organic Chemistry</i> " by Varattur D. Reddy , First Edition, John Wiley & Sons, NJ, 2005.

1. Course Description:

First semester of a two-semester sequence of organic chemistry for students majoring in sciences and for pre-medical, pre-dental, and pre-pharmaceutical students. Prerequisite: CHM 01200.

2. Objectives:

Understand the basic concepts of chemical bonds and molecular orbital theory. Be able to write and draw correct structures for organic compounds. Understand the fundamentals in stereochemistry. Be able to write correct and stepwise reaction mechanisms, understand functional group transformations in organic reactions, and plan simple syntheses.

3. General Comments and Suggestions:

(1). *Academic integrity.* All academic dishonesty acts (such as cheating and plagiarism) are strictly prohibited at Kingsborough Community College. Any academic dishonesty will be reported to the Committee for Academic Honesty of the Department of Physical Sciences. Each and every student is responsible for the standards before performing any academic work.

(2). *Attendance.* Attendance is mandatory for both lectures and laboratory periods.

(3). *Reviews.* CHM31 runs fast and in order to help you understand the basics of the course, a number of review questions will be posted at <http://www.kingsborough.edu/academicDepartments/PHYSCI/CHEM31/index.html>.

(4). *Homework.* Homework will not be graded. However, doing homework and working as many problems as possible are the exclusive ways to learn organic chemistry. Some exam questions will come from the review problems and problems in/after each and every chapter of your textbook.

Chapter	Homework problems from the text
1	1-1 to 1-11, 1-14, 1-15, 1-17, 1-26,1-27, 1-28, 1-30, 1-36, 1-40,1-41, 1-43, 1-45, 1-47
2	2-1 to 2-6, 2-9 to 2-20, 2-22, 2-26, 2-28, 2-29, 2-30, 2-34, 2-35, 2-38, 2-44
3	3-1 to 3-6, 3-9, 3-11 to 3-14, 3-16 to 3-18, 3-21, 3-22, 3-24 to 3-28, 3.31 to 3-34, 3-36, 3-38, 3-43, 3-44, 3-45
4	4-1, 4-2, 4-19, 4-24, 4-26, 4-28 to 4-30, 4-34 to 4-37, 4-39, 4-41 to 4-44, 4-48, 4-49, 4-51
5	5-2 to 5-6, 5-8, 5-9, 5-12, 5-13, 5-14, 5-16 to 5-18, 5-23 to 5-27, 5-29 to 5-33
6	6-1, 6-2, 6-6, 6-9 to 6-12, 6-14 to 6-19, 6-21 to 6-26, 6-31, 6-40 to 6-42, 6-45, 6-46, 6-48, 6-49, 6-53, 6-56, 6-58, 6-60, 6-63, 6-64, 6-66, 6-68, 6-73, 6-75
7	7-1, 7-2, 7-4 to 7-6, 7-8, 7-9, 7-11 to 7-13, 7-15 to 7-17, 7-19, 7-20, 7-25, 7-28 to 7-33, 7-36, 7-38, 7-41, 7-43 to 7-45, 7-49, 7-52, 7-55, 7-56
8	8-1 to 8-4, 8-6 to 8-11, 8-15, 8-17, 8-20, 8-22, 8-24, 8-27 to 8-30, 8-32, 8-34, 8-36, 8-37,8-42, 8-46 to 8-48, 8-60 to 8-62, 8-64, 8-67, 8-70, 8-72
9	9-1, 9-2, 9-4, 9-7, 9-9, 9-11 to 9-13, 9-17 to 9-21, 9-23, 9-24, 9-26, 9-27, 9-32, 9-36,9-39 to 9-41
10	10-2, 10-5, 10-7, 10-8, 10-10 to 10-13, 10-15, 10-16, 10-19, 10-22, 10-24 to 10-27, 10-30, 10-31, 10-33, 10-34, 10-37, 10-38, 10-41, 10-43, 10-46, 10-49, 10-50
11	11-1, 11-2, 11-5, 11-6, 11-9, 11-10, 11-12 to 11-15, 11-17, 11-20 to 11-23, 11-25 to 11-28, 11-30, 11-34, 11-39, 11-40, 11-42, 11-44, 11-45, 11-49, 11-52, 11-53, 11-54, 11-55, 11-57
14	14-1 to 14-4

(5). *Study Tips.* Read through sections in your textbook that will be covered in the next class period before you come to class. In addition, study your lecture notes and work problems after classes.

4. Exams and Grades:

(1). *Exams.* There will be four in-class exams and the final exam. The exam with the lowest score will be dropped. Exams will be announced in advance.

(2). *Missed exams.* Missed exams will be automatically assigned a zero. **No make up** exams will be allowed for any reason.

(3). *Determination of Final Grade.* Final grades will be assigned based on performance of the three in-class exams, quizzes, final exam and your laboratory work.

Exams	300 points
Final exam	250 points
Laboratory work	250 points

5. Laboratory and grading:

(1). General information

There are 11 labs for CHM31. 20 points will be given to each lab. The lowest lab grade will be dropped. 50 points are assigned to the lab final.

(2). Guidelines for writing lab reports

Generally, a lab report consists of three parts: prelab, data sheet and postlab.

- Prelab section **must** be completed before you come to lab. Prelab should include title of lab, page numbers of the lab in your manual, introduction (purpose of lab, chemical reactions involved and the corresponding mechanism), list of chemical reagents you will be using and safety information.
- Data sheet should contain the apparatus setup for labs, what you actually do (procedure), what you observe and the data you collect during laboratory periods.
- Postlab section contains after-lab data analysis (such as %yield, %error, boiling points or melting points), results and discussion, and the answers you provide for the questions assigned. Data analysis should be based on the data you collect.

(3). Lab safety

You must wear goggles while you stay in the lab. A lab coat is recommended. Long hairs must be confined and pulled back while you do lab. You will be watching lab safety video on the first day of your lab. All lab safety issues must be strictly followed while you are in the lab. For example, sandals, open-toed shoes and high heels are not allowed in the lab for safety reasons.

(4). Lab schedule

Week	Experiment
1	Check in, safety, Melting Point Determination
2	Recrystallization of crude Acetanilide or Benzoic acid
3	Molecular Models (Bring your molecular models)
4	Reactions of Hydrocarbons
5	Extraction: Mixtures of Benzoic acid, 2-Naphthol and Naphthalene
6	Distillation: Raoult's Law
7	Steam distillation of Eugenol from cloves
8	Preparation of t-Butyl Chloride: S _N 1 Reaction
9	Synthesis of 2-methyl-2-butene: E1 Reaction
10	Synthesis of Adipic Acid
11	Grignard Reaction: Synthesis of 1-Phenyl-1-butanol
12	Lab Final Exam and Checkout