

Spring 2011

TEXT

"Organic Chemistry," 7th edition, L.G. Wade, Jr.

Solutions Manual, Organic Chemistry, 7th edition, L.G. Wade, Jr.

PURPOSE

Chemistry 222 is designed primarily for chemistry, chemical engineering, biology, pre-medical, pre-dental, pre-pharmacy and pre-veterinarian majors. This course will provide each student with an opportunity to acquire an understanding of the following topics depending on time:

- Infrared and nuclear magnetic resonance spectroscopy
- structure, nomenclature, synthesis and reactions of ethers, ketones, aldehydes, amines, carboxylic acids and carboxylic acid derivatives
- conjugated systems, orbital symmetry and ultraviolet spectroscopy
- aromatic compounds and electrophilic aromatic substitution
- alpha substitutions and condensation of enols and enolate ions

EXPECTED RESULTS

Prior to the completion of the course, each student will have an opportunity to demonstrate his/her comprehension of concepts and competence in the topics stated above.

ATTENDANCE

All students are expected to attend all lecture and laboratory sessions. However, it is recognized that emergencies may arise which will necessitate absences from class. A student should notify the instructor if an absence is due to illness or other emergency. Students are responsible for all material covered in lecture if absent. You are allowed 2 absences. If you exceed the two absence limit for whatever reason, you will lose 1 point for the next absence (number 3), 2 points for number 4 and 3 points for each additional absence. These points will be deducted from the final course average.

If a student misses an exam and presents the instructor with an acceptable excuse, a make-up exam may be arranged to replace the missed exam. The instructor must be notified by the day of the exam that the student will not be present and must be given the reason for the absence. If the excuse is not considered acceptable, the exam grade will be a zero. It is up to the instructor to make the determination as to whether an excuse is acceptable. In general, illness or an

emergency situation are the only acceptable excuses for missing an exam. Missing an exam also counts as an absence in the course.

NOTICE: Falsification of information regarding absences is a breach of academic integrity and a violation of the Oxford College Honor Code.

PROBLEMS

Chemistry is inherently a problem-oriented course and tests will emphasize problem working; therefore, it is imperative that you become proficient at working problems on each topic. There are problems within each chapter; all of these should be worked and may be checked with the answers in the solutions manual. In addition, problems at the end of each chapter will be assigned for you to work; you may also check these at the back of the textbook or in the study guide. These problems are for your own benefit only; I do not take them up or check them. You should work problems as you encounter the material. You should also attempt each problem before seeking help from the book, your notes, or the answer. It is not sufficient to be able to follow how a problem is worked; on a test, you will have to work a problem all the way through, and the only way you will be able to do this is if you have worked numerous practice problems.

EXAM SCHEDULE

Exam I, Friday, February 4
Exam II, Friday, February 25
Exam III, Friday, March 25
Exam IV, Friday, April 22

QUIZZES

There will be at least 10 unannounced quizzes throughout the semester.

EXTRA CREDIT/PRESENTATIONS

Students are given the opportunity to give only one 5-minute power point presentation for extra credit. Topics of these presentations are usually chosen from the biomedical issues related to class discussions. Students may raise their course grade by a maximum of 5% using their extra credit reports.

SCHEDULE*

First Exam: Chapters 12, 13 and 14
Chapter 12 – Infrared Spectroscopy
Chapter 13 – Nuclear Magnetic Resonance Spectroscopy
Chapter 14 – Ethers, Epoxides and Sulfides

Second Exam: Chapters 15, 16 and 17

Chapter 15 – Conjugated Systems, Orbital Symmetry, and Ultraviolet Spectroscopy

Chapter 16 – Aromatic compounds

Chapter 17 – Reactions of Aromatic Compounds

Third Exam: Chapters 18 and 19

Chapter 18 – Ketones and Aldehydes

Chapter 19- Amines

Fourth Exam: Chapters 20, 21 and 22

Chapter 20 – Carboxylic Acids

Chapter 21 – Carboxylic Acid Derivatives

Chapter 22 - Alpha Substitutions and Condensation of Enols and Enolate Ions

*Subject to change according to the class performance and unpredictable circumstances.

PREPARATION FOR CLASS

The pace of this course is such that it normally is not sufficient merely to attend class and take notes. You must also make use of your textbook and the solution manual. Before coming to class, you should read the material to be covered; after class, you should read back over this material as well as your class notes.

REVIEW SESSION

Several review sessions will be held before each exam; the date and time will be announced in class. These sessions are optional and voluntary; no new material will be covered. Students normally come to a review session to ask questions that have come up while studying or to see problems worked.

OFFICE HOURS

I will be available to answer your questions on Wednesday and Thursday afternoons from 2:30-3:30. You can also make an appointment with me if you cannot see me on the designated office hours.

GRADING

| Exam | Points | % of course grade |
|--------------|--------|-------------------|
| I | 100 | 20% |
| II | 100 | 20% |
| III | 100 | 25% |
| IV | 100 | 25% |
| Quizzes | 100 | 10% |
| TOTAL | | 100% |

Grades are normally assigned as follows:

| | | | |
|------------|----|-----------|----|
| 93% - 100% | A | 77% - 79% | C+ |
| 90% - 92% | A- | 73% - 76% | C |
| 87% - 89% | B+ | 70% - 72% | C- |
| 83% - 86% | B | 67% - 69% | D+ |
| 80% - 82% | B- | 60% - 66% | D |
| | | below 60% | F |

HONOR CODE

It is assumed that all Oxford College students will adhere to the highest standards of academic honesty and will uphold the Oxford College Honor Code.

On exams, you may not use any material not distributed with the exam itself except for calculators and pencils/pens. Any other material you bring into the room must be left at the front of the room. During an examination, you may not give or receive assistance. On assignments for outside class the work is to be your work alone – you may not give or receive any assistance, and you may use only materials authorized. Since absences and tardies can affect your grade, giving false information regarding absences or tardies is a violation of the Honor Code. Note also that the Oxford College Honor Code expects students to report any violations of the Code they have knowledge of.