

Spring 2005

### **TEXT**

"Organic Chemistry," 5<sup>th</sup> edition, L.G. Wade, Jr.

Solutions Manual, Organic Chemistry, 5<sup>th</sup> 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:

- 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
- carbohydrates and nucleic acids

### **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.

### **ASSESSMENT PROCEDURES**

Each student will complete several hour-long examinations covering the material contained in the required textbook and in-class lectures as well as a comprehensive final exam covering the entire semester's material. Each student's exam will consist of both quantitative and essay questions. Each student's exam will be judged by standards of logically organized and presented work--quantitative answers must show the reasoning used and be correct in magnitude and precision. Answers to essay questions must be thorough and demonstrate correct grammar, spelling, and punctuation.

### **USE OF ASSESSMENT FINDING**

Each exam is graded; written corrections and criticisms are included. Each exam is returned at the next class period and thoroughly discussed--problems are worked on the blackboard and correct answers are explained to the class.

Individual appointments are made with the students who seem to be having unusual difficulty.

## **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.

Make-up exams are not given, regardless of the reason an exam was missed. If a student misses an exam and presents the instructor with an acceptable excuse, the grade on the final exam will count in place of the missed exam grade. 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.

## **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 11, at 2:30 p.m.

Exam II, Friday, March 4, at 2:30 p.m.

Exam III, Friday, April 1, at 2:30 p.m.

Exam IV, Friday, April 22, at 2:30 p.m.

## **FINAL EXAM**

There will be a final exam, covering the semester's material. This will be given during the regularly scheduled final exam period.

## **SCHEDULE\***

First Exam: Chapters 13, 14 and 15

Chapter 13 – Nuclear Magnetic Resonance Spectroscopy

Chapter 14 – Ethers, Epoxides and Sulfides

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

Second Exam: Chapters 16, 17 and 18

Chapter 16 – Aromatic compounds

Chapter 17 – Reactions of Aromatic Compounds

Chapter 18 – Ketones and Aldehydes

Third Exam: Chapters 19, 20 and 21

Chapter 19 - Amines

Chapter 20 – Carboxylic Acids

Chapter 21 – Carboxylic Acid Derivatives

Fourth Exam: Chapters 22, 23 and 24

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

Chapter 23 – Carbohydrates and Nucleic Acids

Chapter 24 – Amino Acids, Peptides and Proteins

## **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.

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

## REVIEW SESSION

At least one review session 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

My office is Pierce 216. I am usually in my office and available from 9-5 every day. Exceptions are around lunchtime and during class and labs.

## GRADING

Four hour exams (100 pts. each)	=400 pts.
Final exam (200 pts.)	=200 pts.
Quizzes	=100 pts.
Total	700 pts.

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.