

**GEORGIA PERIMETER COLLEGE - DUNWOODY CAMPUS**  
**CHEM 2641**  
**FUNDAMENTAL ORGANIC CHEMISTRY - I**

**Term:** Spring 2006  
**Time:** MW 5:30 pm - 6:45 pm  
**Place:** NC-1240  
**Midpoint:** Tues, Mar.14, 2006 (this is also the deadline for withdrawing with a W)  
**Final Exam:** Mon, May 8, 2006 5:45 pm - 7:45 pm  
**Useful links:** <http://www.gpc.edu/~dunsci/links.htm>

**INSTRUCTOR:** Dr. Glenn S. Nomura, Associate Professor of Chemistry  
**Office:** NE - 2610  
**Office Tel:** 770.274.5062  
**Office Hours:** MW: 2:00 pm -5:30 pm; T: 4:00 pm – 7:00 pm  
**Email:** [gnomura@gpc.edu](mailto:gnomura@gpc.edu)

**Science Dept Tel:** 770.274.5078

**TEXT** Organic Chemistry, 1st edition, Janice G. Smith, McGraw Hill

**PREREQUISITES:** CHEM 1212 lecture and lab with C or better

**CO-REQUISITE:** CHEM 2641 Lab

**RESOURCES:**

1. A set of molecular models is highly recommended. The Dunwoody Campus Bookstore currently has the *Framework Molecular Models* kit by Prentice Hall.
2. A scientific calculator is required.
3. On **reserve** at the Dunwoody Library:
  - a. Answer keys to exams of recent semesters (a compilation of earlier keys is available as a coursepack; see below)
  - b. QD251.2.M67 1992 Organic Chemistry, 6<sup>th</sup> edition, Robert T. Morrison and Neilson Boyd, Prentice Hall 1992.
  - c. QD251.2.M37 1992 Advanced Organic Chemistry, 4<sup>th</sup> edition, Jerry March, Wiley-Interscience 1992.
3. Available at the Dunwoody Bookstore: **Coursepack for CHEM 2642** - Answer keys to exams dating to Fall 1999.

**DESCRIPTION**

**overview.** This is the first of a two-semester sequence of organic chemistry. It includes introduction to structure, stereochemistry, mechanism, reactivity, functional groups and synthesis. This course is intended for students majoring in sciences, engineering, pre-medicine, pre-dentistry and pre-pharmacy.

**entry level competency.** Proficiency in general chemistry concepts, such as concentration calculations, equilibria, acid-base theory, oxidation and reduction, thermochemistry, rate law, VSEPR, bonding theory.

**general education outcomes.** Students develop their reading, writing, verbal communication, and critical thinking skills through listening to others, working problems individually or in groups, and interacting with electronic media. Students analyze organic phenomena by applying the principles of general chemistry and Organic Chemistry I to draw conclusions about organic molecular structure.

**expected educational results.** Upon completion of this course, the student should have a basic understanding of IUPAC naming of simple acyclic and cyclic compounds, reactivities of molecules based on structural features, stereochemistry, mechanisms of electrophilic and nucleophilic and radical reactions, VSEPR of hybridized bonds in saturated and unsaturated bonds, and the proper selection of reagents to perform organic reactions covered in the course.

**COURSE PLAN**

The content of CHEM 2641 is comprised in chapters 1 – 13, and 16 according to the Schedule below. Mastery of concepts from general chemistry is assumed.

**Homework** Constantly review any concept from general chemistry that you might have forgotten. Work all in-chapter exercises. Work as many end of chapter exercises that you possibly can and be certain to select problems from each section of end of chapter problems. Homework problems are not collected for credit.

**Study Advice** Study for the understanding of concepts and principles. Some rote memorization is unavoidable but this is not unique to organic chemistry. **DO SOMETHING FOR ORGANIC EVERY DAY.** The best habit you can develop for yourself is the daily study of your notes and textbook 7 days each week. Consider studying with classmates regularly in small groups of no more than three people. Since lectures are limited to the highlights of each chapter, the in-depth comprehension of the textbook becomes your responsibility. Do not be afraid to ask questions in class. Your instructor is an advocate of the *Socratic* teaching style, i.e. learning by self-inquiry, and so class participation is highly encouraged. Your instructor is likely the best study partner you will ever have.

**Exam Preparation** Your instructor of this course makes every attempt to test within the boundaries of the course. Hence, exam questions are derived primarily from,

- the end of chapter questions of the textbook
- in-chapter content
- lecture notes

**Exam Dates** Exam dates are announced in class as chapter groups near completion

**CHEM 2641 - SCHEDULE**

(Tentative order of coverage, grouped by topics, subject to change)

Exam 1	<b>Chapter 1</b>	<b>Structure and Bonding</b> (review of General Chemistry concepts)
	<b>Chapter 2</b>	<b>Acids and Bases</b> (review of General Chemistry concepts)
	<b>Chapter 3</b>	<b>Functional Groups</b>
Exam 2	<b>Chapter 4</b>	<b>Alkanes</b>
	<b>Chapter 5</b>	<b>Stereochemistry</b>
	<b>Chapter 6</b>	<b>Organic Reactions</b>
Exam 3	<b>Chapter 7</b>	<b>Alkyl Halides and Nucleophilic Substitutions</b>
	<b>Chapter 8</b>	<b>Alkyl Halides and Elimination</b>
	<b>Chapter 9</b>	<b>Alcohols, Ethers, and Epoxides</b>
Exam 4	<b>Chapter 10</b>	<b>Alkenes</b>
	<b>Chapter 11</b>	<b>Alkynes</b>
	<b>Chapter 12</b>	<b>Oxidation and Reduction</b>
	<b>Chapter 13</b>	<b>Radical Reactions</b>
	<b>Chapter 16</b>	<b>Conjugation, Resonance, and Dienes</b>

**GRADE ANALYSIS:**

Quizzes	75%
Final Exam	25%

**Exams during the term:** The point value of a given exam is 50 points per chapter covered. A three-chapter exam would count 150 pts, a four-chapter exam would count 200 pts, etc towards the course. Bonus points are offered on exams and on the final, typically ca. 15%. All exams count toward your course grade, none are dropped. A missed exam counts as a zero in your average. The dates for exams are announced in class as the lecture approaches the end of a chapter group. Remember that exams are based heavily on the textbook and the lecture notes, so be certain not to fall behind in your studies. The total accumulated points from exams during the term account for **75%** of your overall course grade.

**Final Exam:** The final exam will be comprehensive on all chapters covered plus material discussed in lecture. Bonus points will be offered on the final exam, typically ca. 15%. The final exam will account for **25%** of your overall course grade.

**Course Grade:** Your overall course average will be curved. Note, only the overall course average will be curved, *not individual exam scores*. The curve formula will be a straight line formula,

$$y = mx + b$$

$$\text{curved Course Grade} = (20/25) * (\text{raw average}) + 22.0$$

where y = curved course grade, m = (20/25); x = raw average; and b = 22.0

You can also use this equation to self-evaluate your performance at anytime before the end of the semester by inserting your cumulative raw exam average into this formula. The raw exam average is the sum of all your exam scores at any given time in the course divided by the basis points for those exams (i.e. exclusive of bonus pts) multiplied by 100:

**\*NOTE:** Grades will no longer be mailed to students' home addresses at the end of the semester. Reports of student grades are available via Web [http://www.gpc.edu/Banner\\_Web/](http://www.gpc.edu/Banner_Web/).

**CLASS POLICIES:****ATTENDANCE**

Regular attendance is expected. You are responsible for everything discussed in class, including announcements and handouts given in class. Absence from class does not relieve you of this responsibility. Excessive absence from class has a detrimental effect on your ability to keep up with the rest of the class and can lead to failing the course.

**MAKE UP EXAMS AND ASSIGNMENTS**

Make up exams are not allowed, unless there is a verifiable serious cause. The instructor reserves the right to decline any request for a make up exam. The instructor also reserves the right to impose a late penalty of 10% or more for a make up exam. **Under no circumstances will a make up exam be given after an exam is returned to the class.**

**WITHDRAWAL**

The student may initiate a withdrawal from the course with a grade of **W** through the midpoint of the semester. After the midterm, a withdrawal will be with a grade of **WF**. At the time you withdraw from lecture, you must also withdraw from CHEM 2641L laboratory. Any exception to the withdrawal policy is by special permission from the Dunwoody Academic Dean for hardship reasons only and must be documented with the Dean.

**CLASSROOM ETIQUETTE**

Please, as a courtesy to others: no smoking, no eating, no drinking, and no small children in the classroom.

**HONOR CODE**

The Georgia Perimeter College honor policy applies at all times during the semester. Cheating of any form is not acceptable. In brief, cheating is: ***any activity that places your classmates at a disadvantage in this course and leads to the inability of your instructor to assess you uniformly with the rest of the class.*** The instructor will treat the first incident as an isolated infraction (a zero on an exam and written documentation). The second infraction will be brought to the attention of the Science Department Head and the office of the Dunwoody Campus Provost.

**ACADEMIC HONESTY POLICY - Cheating and Plagiarism**

Cheating includes any attempt to defraud, deceive or mislead the instructor in arriving at an honest grade assessment. Plagiarism is a form of cheating that involves presenting as one's own the ideas or work of another.

All portions of any test, project or final exam submitted by you for a grade must be your own work unless you are instructed to work collaboratively. Specific requirements will be described for collaborative projects, but all work presented must be the work of members of that group. Research materials used must be properly cited.

Violation of the Academic Honesty Policy will result in a grade of zero for that test, project, or exam. The second offense will result in assignment of a grade of "F" for the course and a formal charge of Academic Dishonesty will be lodged with the Campus Dean for Student Services.

Policies have been established by Georgia Perimeter College to insure due process in charges of cheating or plagiarism. A copy of these procedures can be found in the current Student Handbook under the heading '*Disciplinary Sanctions*'.

***AMERICANS WITH DISABILITIES ACT STATEMENT***

If you are a student who is disabled as defined under the Americans with Disabilities Act and requires assistance or support services, please seek assistance through the Center for Disability Services. A CDS Counselor will coordinate those services.

***STATEMENT OF NON-DISCRIMINATION***

Georgia Perimeter College supports the Civil Rights Act of 1964, Executive Order #11246, Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act. No person shall, on the basis of age, race, religion, color, gender, sexual orientation, national origin or disability, be excluded from participation in, or be denied the benefits of, or be subjected to discrimination under any program or activity of the college.

Any individual with a grievance related to the enforcement of any of the above provisions should contact the Assistant Director of Human Resources, Ombudsperson.

***AFFIRMATIVE ACTION STATEMENT***

Georgia Perimeter College adheres to affirmative action policies to promote diversity and equal opportunity for all faculty and students.

***THE REGENTS' TEST***

The University System of Georgia requires that all students enrolled in undergraduate degree programs in University System institutions (including Georgia Perimeter College) successfully complete all parts of a competency examination in reading and English composition. This competency examination is commonly called "the Regents' Test", and it is free of charge. A student has two attempts to pass this test before accumulating 45 hours of collegiate credit. After two attempts or after reaching 45 hours, a student will be required to take classes to prepare for the test. After accumulating 54 credit hours, a student may not take any collegiate level courses until completing the preparation classes and passing the test. Please sign up for the Regents' Test when you enroll in English 1102. Do this in time to have two attempts before accumulating 45 credit hours!