

YORK COLLEGE OF PENNSYLVANIA
CHM-122/3 Principles in General and Organic Chemistry
Fall 2008

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OFFICE HOURS: MW 11:00-1:00 PM. F 11:00-12:00 PM

TEXT: Fundamentals of General, Organic, and Biological Chemistry, Fifth Edition by John McMurry, Mary Castellion, and David Ballantine (2007).

LABORATORY: Laboratory Notebook by Marie Dunstan, 2008-2009

COURSE DESCRIPTION: This course is designed specifically for majors requiring a single semester of chemistry as a continuation from high school chemistry. Through the focused application of chemistry principles to the health science field, students incorporate previously learned concepts with new information in general and organic chemistry. This deeper level of comprehension and analysis promotes the development of critical thinking skills essential to the continuing study in the health sciences.

Main Objectives: At the conclusion of this course the student should be able to:

1. Employ the metric system and factor labeling method in measurements and calculations.
2. Illustrate a basic model for the structure of the atom and use the Periodic Table to predict trends among the elements.
3. Describe principles of chemical bonding, molecular bonding and molecular structure.
4. Name basic inorganic and organic compounds.
5. Write proper chemical formulas and balanced equations.
6. Describe and illustrate intermolecular forces of attraction and molecular shapes.
7. Define and describe acids and bases as they relate to pH, buffers, and chemical reactions.
8. Use the mole concept to calculate solution concentrations and equivalents.
9. Define Beer's Law and use dilution methods to confirm its validity.
10. Discuss qualitative and quantitative aspects of gaseous matter and apply the information to body gas exchange.
11. Describe the physical properties of solutions, colloids, and suspensions.
12. Use equilibrium expressions to determine chemical concentrations, and explain the effect of Le Chatelier's Principle on equilibrium conditions.
13. Describe basic kinetic quantities as they relate to chemical changes.
14. Describe processes of nuclear decay and the properties of alpha, beta, and gamma radiation.
15. Discuss body energy and how it relates to energy in chemical bonds and nutrition.
16. Identify functional groups in organic molecules and relate physical properties to structure.
17. Begin to gain an appreciation for the role of organic molecules in physiological function.
18. Learn the techniques required to do research in the body of scientific literature.
19. Perform a literature search on a topic in organic chemistry and organize the information for presentation in written format.

TECHNIQUES: The main objectives outlined above are met by complementary involvement of both lecture and laboratory experiences. The lecture portion of the course emphasizes problem solving and relating concepts to allied health applications. Overhead transparencies, videos, chemical models, computer simulations, and demonstrations enhance understanding of the concepts. In the laboratory, students work individually except when directed otherwise by the instructor. The laboratory exercises emphasize "hands on" experience to develop chemical theories as the student observes, collects data, and interprets results. Students use appropriate laboratory instrumentation, consult scientific reference material in both hard copy and electronic format, and utilize software for generating graphs.

TO DO WELL IN THIS COURSE:

1. The discipline of chemistry and this course in particular, demands that you take responsibility for your own learning. Most of your learning will take place during study and problem solving time that you do outside of lecture and laboratory class time. You must supply the initiative and hard work.

2. As with most things in life, the more time that you work on something, the better you get. You must do practice problems. Do end of chapter problems, study guide problems, worksheet practice problems, and other problems that you can find in chemistry tutorials on the Internet.

3. Bring your calculator and text to class each day. Do examples as they are done on the board and ask questions to clarify the concepts. Being active in class as examples are done and questions are answered will give you insight into problems that you will see again on the quizzes and exams.

4. When you have questions, ask them during lecture, lab times, before or after class. Ask them before you get too lost. Chemistry builds on what has gone before, and the sooner you get help, the more you will understand. Be persistent!

GRADING POLICY: The CHM-122 course grade is determined by performance in both lecture and laboratory work. (A single grade is determined that includes lecture, CHM-122, and laboratory, CHM-123, components of the course.) The lecture portion of the grade includes scheduled exams, cooperative learning assignments and quizzes completed outside of class time. The laboratory portion of the grade is based on weekly scores on laboratory reports and assignments. Your laboratory instructor will discuss details for laboratory grading. The course grade is calculated according to the following format.

FINAL GRADE BREAKDOWN:

Four exams	50%	90-100% 4.0 (A)
Quizzes	10%	87-89% 3.5 (B+)
Final Exam	15%	80-86% 3.0 (B)
Lab Work	<u>25%</u>	77-79% 2.5 (C+)
TOTAL	100%	70-76% 2.0 (C)
		60-69% 1.0 (D)
		Below 60% 0 (F)

ATTENDANCE POLICY: Every effort should be made to attend all exams. If an exam is missed due to an excused absence, contact the instructor before or on the day of the exam and schedule a makeup time as soon as possible. An exam missed due to an unexcused absence will receive a grade of zero.

Class attendance will be recorded, but will not be considered as a factor in grade determination. However, in-class assignments missed due to any type of absence cannot be made up and may have a detrimental effect on your grade. Be aware that regular class attendance is generally a necessity for good performance in chemistry courses.

COMMUNICATION STANDARDS: York College recognizes the importance of effective communication in all disciplines and careers. Therefore, students are expected to competently analyze, synthesize, organize, and articulate course material in papers, examinations and presentations. In addition, students should know and use communication skills current to their field of study, recognize the need for revision as part of their writing process, and employ standard conventions of English usage in both writing and speaking. Students may be asked to further revise assignments that do not demonstrate effective use of these communication skills.

ACADEMIC DISHONESTY POLICY: Academic dishonesty will not be tolerated at York College. Academic dishonesty refers to actions such as, but not limited to, cheating, plagiarism, fabricating research, falsifying academic documents, etc., and includes all situations where students make use of the work of others and claim such work as their own.

When an instructor believes that a student has committed an act of academic dishonesty, the instructor must provide written notification to the student, the Department Chair, and the Dean of Academic Affairs of the charge and the sanction. Documentation related to instances of academic dishonesty will be kept on file in the student's permanent record. If the academic dishonesty is the student's first offense, the instructor will have the discretion to decide on a suitable sanction up to a grade of 0 for the course. Students are not permitted to withdraw from a course in which they have been accused of academic dishonesty.

Students who believe they have been unjustly charged or sanctioned in cases involving a first offense must discuss the situation with the instructor immediately. Following this discussion, students may request through the Dean of Academic Affairs that the Student Welfare Committee conduct a hearing to review the charge and/or the sanction in the case.

In cases of a first offense, the instructor may request that the Student Welfare Committee conduct a hearing and decide on the sanction, which can involve academic suspension or dismissal from the College, if the instructor believes the offense to be of an extremely egregious nature.

If the Dean of Academic Affairs determines that the academic dishonesty is the student's second offense, the Dean will provide written notification to the student, the instructor, and the Department Chair. The Student Welfare Committee will automatically conduct a hearing to review the charge and decide on an appropriate sanction, which will involve academic suspension or dismissal from the College. Students who believe the Student Welfare Committee has unjustly sanctioned them may submit a written request to the Dean of Academic Affairs for a review of their case by the Dean.

POLICY ON USE OF PERSONAL TECHNOLOGY: Although there are times when emergencies require access to technological devices such as cellular phones, PDA's, laptops, etc., using them unethically or recreationally during class time is never appropriate. Please have devices silenced or off during both lecture and laboratory classes.

Explanation of the grade levels as approved by the York College Community:

4 (Excellent): This grade denotes accomplishment that is truly distinctive and decidedly outstanding. It represents a high degree of attainment and is a grade that demands evidence of originality, independent work, an open and discriminating mind, and completeness and accuracy of knowledge, as well as an effective use of the knowledge.

3.5 (Very Good): This grade denotes mastery of the subject matter. It represents very good achievement in many aspects of the work, such as initiative, serious and determined industry, the ability to organize work, and the ability to comprehend and retain subject matter and to apply it to new problems and contexts.

3 (Good): This grade denotes considerable understanding of the subject matter. It represents a strong grasp and clear understanding of the subject matter and the ability to comprehend and retain course content.

2.5 (Above Average): This grade denotes above average understanding of the subject matter. It represents a good grasp of the subject matter and the ability to comprehend and retain course content.

2 (Average): This grade denotes average understanding of the subject matter. It represents the grade that may be expected of a student of normal ability who gives the work a reasonable amount of time and effort.

1 (Below Average): This grade denotes below average understanding of the subject matter. It represents work that falls below the acceptable standard.

0 (Failure): This grade denotes inadequate understanding of the subject matter. It signifies an absence of meaningful engagement with the subject matter and that the student is not capable of doing or understanding the work or has made little or no effort to do so.

W (Withdrawal): Students are permitted to withdraw from courses without penalty up to the ninth Friday of the fall or spring semester. Corresponding deadlines are set for all other semesters (e.g., summer sessions). Withdrawal after that time shall result in a grade of "0".

I (Incomplete): The student may request permission from the instructor to receive an incomplete prior to the final examination and must present extraordinary reasons for the petition. The Instructor should indicate on the Attendance/Final Grade Record the required work the student must do to complete the course. Any grades of "I" not removed within two calendar months after the end of the semester will automatically be changed to "0" in the Records Office. Grades of incomplete should only be provided to students who have completed a substantial portion of all course requirements.

Note: This syllabus is subject to revision by the instructor.
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