

General, Organic, and Biological Chemistry Syllabus

CH 121, Summer 2011, Dr. Schmidt

Lecture: MTWTr 8:55am – 10:10am, ST 316
Recitation: MW 10:15 am – 11:05am , ST 316
Lab: TTr 10:15am – 1:15pm, ST134 (Dr. Leung)

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Office hours: as arranged

Purpose: “Designed for those students who need only a one-semester survey of the principles of chemistry or for nursing students. This course includes vocabulary, laws, and applications of the basic concepts of chemistry. Laboratory work includes preparations, illustrations of laws and typical quantitative experiments. Chemistry 121 will not count towards a major or minor in chemistry.” Four lecture periods, two hours of recitation, and two three-hour laboratory periods a week during the full Summer session. CH 121 is designed to develop the student’s abilities in three areas: 1) problem solving techniques, 2) critical thinking skills, and 3) basic chemical concepts.

The following skills will be emphasized to satisfy general education requirements

- a) Reason mathematically and understand numerical data – you will be exposed to fundamental mathematical skills both in lecture and laboratory. You will be taught to use numerical data as a means of developing some of the fundamental laws of chemistry. Some direct applications of these skills will involve development of the gas laws, law of definite proportions and the stoichiometry of chemical reactions.
- b) Process information both in terms of synthesis and analysis – you will develop the skill of evaluating empirical evidence (both mathematical and nonmathematical) in terms of developing models that describe chemical phenomena. You will learn to assess the validity and non-validity of the information in terms of consistency with the model. Where the information is consistent with the model further refinement of the model will be developed and when the information is not consistent with the model you will learn how to modify the model to bring it in congruence with the empirical evidence.
- c) Solve problems using the methods of analysis considering evidence, relevance, and validity. In both lecture and laboratory you will develop the skill of analyzing both numerical and other data to draw conclusions concerning chemical and physical systems.

The three skills discussed above will be evaluated through homework, quizzes, examination, and the analysis of laboratory reports.

Prerequisite: Equivalent of MA 110 or MA 116 or MA 140 or concurrent enrollment

Textbook and Supplies: *-General, Organic, & Biological Chemistry*, 3rd ed. by K. C. Timberlake, 2010 (required).

-Scientific calculator capable of log function (required)

-2 Dry erase markers for recitation (required)

Grading: Final grades will be assigned based on homework/quizzes (100 points of 145 points possible), three hourly exams (166.67 points each), one comprehensive final exam (200 points), and on your laboratory grade (200 points). Grades will be assessed based on a 1,000 point total. In effect, if you complete all of the homework problems perfectly (100%) you will earn 4.5% “extra” on your final grade. As chemistry is an empirical science, your overall grade in the course will not be more than one letter grade higher than your laboratory grade.

Homework: Since the solutions to all of the odd numbered problems are given, it is not unreasonable to expect completion of all of the odd numbered problems. Graded homework assignments are mainly comprised from the even numbered problems, and are posted on-line on the schedule link of the class website. Each assigned homework problem is worth two thirds of a point. Homework will be collected at the beginning of each class. .

Exams: Exams will be given during the lecture time on the days listed on the course schedule. Exam concepts will be based on the lecture notes, homework problems, recitation, and the textbook. Exams are more focused on the application of concepts learned which intrinsically necessitates the need for some memorization. Working homework problems is the best, most efficient way to prepare for exams.

Attendance: Attendance is required recitation. The instructor must be notified by e-mail and in person at least one week prior to any potentially excused absence. In the very unlikely case of a dire emergency, you must immediately notify your instructor by phone or in person and then request an excuse by e-mail once the situation has passed. In addition, **missed quizzes and exams will receive a zero and will not be made-up.** In the rare case that you have an excused absence, an exam grade based on your Final Exam grade may be recorded for the missed hourly exam. If a university field trip or athletic event conflicts with an exam time, it is the **student's responsibility** to make arrangements with the instructor to take the exam early.

Laboratory participation is required for the successful completion of this course. If you are pregnant or become pregnant during this semester you should consult with your physician to decide if it is advisable for you to continue with this chemistry course. You may obtain a list of chemicals used during labs from your instructor.

Success: How can you further your success in this course? Read the book, do all of the chapter problems, participate in lecture, participate even more in recitation, experience chemistry in the lab, study some more, think about what you've studied, ask questions about what you've studied, get help from Dr. Schmidt...

Here is what I expect you to do:

1. Quickly read the sections to be covered in class.
2. Start on some of the chapter homework problems.
3. Re-read the textbook in more detail and start asking a lot of questions (Why, How, Where, When, Why not, etc.). In some cases you may need to make some flashcards.
4. Participate in Lecture.
5. Complete all of the chapter homework problems (even those not turned in for credit).
6. Actively participate in Recitation.
7. Re-re-read the textbook; ask a lot of questions (Why, How, Where, When, Why not, etc.). You should be assimilating your ideas by now into your understanding of the Universe.
8. The day before the exam, review the material.
9. Perform at your peak level of expertise on the exam.

"Chemistry requires rigorous and meticulous habits."