

Course Syllabus

Fall 2007

CHM 138.05

General Chemistry I [CHEM 1311]

3 Credit Hours

Department of Chemistry

College of Arts and Sciences

Location of Class Meeting: CFS 103**Class Meeting Times:** 8:00-8:50 on Tue. and Thur.**Instructor:** Dr. Paul A. Loeffler**Office Location:** CFS 304**Instructor Contact Information:**

telephone: 294-1525 or email: chm_pal@shsu.edu or Loeffler@shsu.edu

Office Hours

a. Mon. & Wed., 10:00-10:50 a.m.; Tue. & Thur., 9:30-10:20 a.m.; Mon. 1:00 - 1:50 p.m.

Help Session: wed. 3:00 in CFS-121

b. Other times by appointment.

Course Description

- This is the first semester of a yearlong course in general chemistry for science majors. The course will cover chemical substances and species, their names and formulae, chemical change and the laws that govern them, common chemical reactions, periodic correlation, atomic structure and bonding, and finally the gas laws
- Prerequisite course(s): Minimum grade of C in MTH 163, MTH 170, MTH 184 or MTH 199 (or equivalent), or a minimum Math score of 250 on the THEA (or equivalent). The THEA equivalent is 43 on ASSET, 75 on ACCUPLACER, 55 on COMPASS, 21 on ACT and 520 on SAT. Mastery of K-12, TEKS concepts and competencies.
- Brief overview of approach/method of instruction: lecture to provide guidance and direction but individual study and extensive practice by working problems to accomplish the course objectives. The course will be a web-assisted, hybrid lecture course. Blackboard and your university e-mail account will be our mechanism for on-line interaction. Thus, you are responsible for checking your e-mail account and Blackboard on a daily basis. It is anticipated that one lecture in a given two week period will be presented on-line through Blackboard. Course assignments and documents homework will also be posted on Blackboard. Homework will include on-line exercises that must be completed within a week of posting to receive feedback and credit. It is expected that you will participate in the on-line discussions in response to your classmates' (or my) questions. This too will be monitored in terms of frequency and substance. Most on-line, Blackboard exercises will be multiple choice in nature.
- Types of exams: The exams will consist of five parts: vocabulary (define a term), nomenclature (provide a formula or chemical name), reactions (predict the products of reactions and balance an equation), short answer or multiple choice (similar to those in practice exams) and long answer (problems like those in the text).

Global Course Objectives

- The student will gain factual knowledge (terminology, classifications, methods, trends)
- The student will be learning fundamental principles, generalizations and theories.
- The student will be learning to apply course material (to improve thinking, problem solving and decision making)

Required Textbook

- Chemistry: *The Central Science by Brown*, by LeMay and Bursten, tenth Ed., Prentice Hall (The white one not the old blue one but if you have the blue one it will be OK. You will have to get the assigned questions from a student with the tenth edition.)
- It is the student's responsibility to obtain course materials at the beginning of the semester.

Required Supplies

- The textbook (your new, soon-to-be, intimate friend)
- A calculator that is a TI-30 series. Don't bother with an expensive fancy one as they simply burden the course. Only TI-30s can be used during exams.
- Alphanumeric devices like calculators and cell phones are not allowed during exams. You can NOT use a calculator other than a TI-30 on exams. Hint: Practice with your "game bat."
- A three-ring note book for collection of lecture outlines and notes.
- A bound notebook for worked homework problems

Attendance Policy

It is your responsibility to sign the daily roster upon entering the classroom at the beginning of each lecture period. Three or fewer absences will result in "A" credit, four in "B", five in "C", and six or more absences will be considered "F" performance. Class attendance constitutes 5% of the course letter grade.

Assignments

Assignments, etc. will be posted on Blackboard or announced in class. It is your responsibility to complete these assignments to your satisfaction. No participation points are associated with these activities but their grades will serve as proportional performance indicators. The points on the Blackboard homework assignments and graded, in-class exercises will represent 10% of your total course grade. Recommended end-of-chapter problems will be assigned and it is expected that you will use these to self-assess your progress and for additional practice. After all, if you can't work it at home then you can't work it on an exam. Someone once said; "little practice means don't expect even close to perfect."

Exams

Exams are strictly assessment exercises. Your progress in the course is most significantly (85%!!) from three midterm exams and the comprehensive, two-part final exam.

Grading Plan

- The overall course grade will be calculated such that all exams, three midterms and two finals will be equally weighted. Course average can be calculated as a weighted average: Attendance (5%), Homework & in-class exercises (10%), Mid-term and final exams (85%).
- Extra credit policy: no extra credit
- Failure to complete course requirements: course grade of "F"
- A grading scale is used to provide greater accuracy and simpler accounting. Rather than simply using letter grades like "B" or "B+" we will use the familiar "four point scale" that you see in GPAs. Exam points or accumulative homework points are initially "curved" using a range of five points to represent the grade range A through F. This results in numerical grades as follows: 4.99-4.00 = A; 3.99-3.00 = B; 2.99-2.00 = C; 1.99-1.00 = D; >1.00 = F; (0.00 = F- and a recommendation to drop the course)
- As the professor, I expect you to achieve a 50% success rate to receive a passing grade on any given exam. So anticipate that you need to get around half of the material correct to get a grade of D or better. The distribution of A's, B's, C's and D's will be determined by the professor following an examination of the point distribution, the range of points, the median and mode on each exam (specifically for those students scoring above 50%).

- Don't panic as I anticipate there will be some A's and a reasonable distribution of B's and C's but this course is not a "walk in the park!" Significant time-on-task is required. Individuals who fail this class, self select.
- There are no make-up exams as we use the comprehensive portion of the final.

Academic Dishonesty

Any response that is not your own or a product of your own thinking is an inappropriate answer; it is simply academically dishonest to represent it as your own. It is like evaluating stealing; if it isn't yours then it doesn't belong to you, so don't take it. Any answer or response that has been changed in order to acquire a "higher grade" is also an inappropriate answer. Presenting a falsified or corrected answer is academically dishonest. It is like evaluating lying; if it is not completely and truthfully represented then it is a lie.

If any student has acted in a manner that is not above reproach that he or she shall bring this to my attention. If one student has knowledge of another student whose behavior in this class is inappropriate then he or she should bring this to my attention. It is our collective responsibility to maintain a fair and just learning environment. Students who have been academically dishonest will receive an "F" in the course and be subject to university disciplinary action.

Classroom Rules of Conduct

According to Section 5 of the Student Handbook, students are expected to assist in maintaining a classroom environment that that is conducive to learning.

Study Tips

The exams will consist of five parts: vocabulary (define a term), nomenclature (provide a formula or chemical name), reactions (predict the products of reactions and balance an equation), short answer or multiple choice (facile assessment of concepts) and long answer (problems like those in the text homework and ones you worked in Blackboard assignments). Address each of these testing areas with seriousness and concern for your personal progress. Self-evaluation is important.

Find words that you do not know and learn their definitions; keep a glossary for constant review. Frequently study chemical symbols and formulas. You **MUST** get in the habit of building your vocabulary and striving for a functional vocabulary not just a concrete one.

Review the some of the math requirements of the course as outlined in Appendix A. If you don't remember your algebraic constructs and don't feel comfortable with graphical representations of ratio and proportions, then go get a high school math text or go to the library and redress this deficiency.

Learn to recognize classes of materials and reactants; practice predicting chemical interactions and writing chemical equations. Go to the publisher's media pack and work with these useful tools.

Work all your homework problems in a workbook and keep this record for your review. Work your problems slowly and systematically. Never expect to "recall" the answer. Approach a problem as a journey not a destination and enjoy the trip! Work ALL of the in-chapter sample problems and practice exercises before addressing the end-of-chapter problems. Never work a problem with the assistance of the textbook or your notes in a "follow the leader" approach; you are being academically dishonest with yourself and the habit will come back to bite you.

Build a study group and exercise the opportunity for peer-lead learning. Work together! Learn to communicate within the context of Chemistry.

Read, study and practice-practice-practice. Anticipate dedicating two hours each day to Chemistry. Chemistry is not “hard”; it is just time intensive. Time-on-task is required for you to progress with your vocabulary development and understanding of concepts.

IV. Optional Elements of the Syllabus

**1. Course Outline: TENTATIVE LECTURE OUTLINE: CHM 138.05 [CHEM 1311]
General Chemistry I, Fall 2007
Dr. Paul A. Loeffler, CFS 304, CHM_PAL@SHS.EDU**

Week of		Topic	Readings	Lab Weeks
21-Aug	23- Aug	Matter & Measurement	Ch. 1.1-1.4	No Labs
28- Aug	30- Aug	Atoms, Molecules, and Compounds	Ch. 2	No Labs
4- Sept	6- Sept	Stoichiometry: Formulas & Equations	Ch. 3	No Labs
11- Sept	13- Sept	Stoichiometry cont.;	Ch. 3	Labs Begin Mon.
18- Sept	20- Sept	Exam 1 (Tue); Chemical Reactions	Handout	See C118 Sch.
25- Sept	27- Sept	Aqueous Reactions	Ch. 4.1-4.4	TBA???
2- Oct	4- Oct	Concentrations & Stoichiometry	Ch. 4.5-4.6	TBA???
9- Oct	11- Oct	More Stoichiometry Problems	Ch. 4.5-4.6	TBA???
16- Oct	18- Oct	Exam 2 (Tue); Energy & Enthalpy	Ch. 5.1-5.4	TBA???
23- Oct	25- Oct	Electronic Structure	Ch. 6.5-6.9	TBA???
30- Oct	1- Nov	Periodic Properties	Ch. 7	TBA???
6- Nov	8- Nov	Concepts of Chemical Bond	Ch. 8	TBA???
13- Nov	15- Nov	Chemical Bonding cont.	Ch. 8	TBA???
20- Nov		Exam 3 (Tue);		No Labs
27- Nov	29-Nov	Thanksgiving Vacation		
4- Dec	6- Dec	Molecular Geometry & Bonding	Ch. 11	TBA???
10- Dec	13- Dec	Finals Week		No Labs

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