

Science 112 – Introduction to Chemistry

Winter 2007

Lecture – Monday, Wednesday 2:00 – 3:25 p.m. DDH 107K

Laboratory – Monday, Wednesday 3:30 – 5:55 p.m. SCI 265

Instructor: Dr. Andreas Gebauer (office: SCI 271, telephone, 654-6840; e-mail: agebauer@csub.edu, <http://www.csub.edu/~agebauer>).

Office Hours: Monday – Wednesday 10:00 -11:00 a.m., SCI 271, or by appointment.

Textbook: Hewitt, Suchocki, Hewitt Conceptual Physical Science, 3rd Ed., ISBN 0-321-05173-4

Labbook: Gebauer (Ed.) Laboratory Manual Pearson Custom Publishing, ISBN 0-536-14110-X

Classroom Participation/Attendance: You are required to purchase a H-ITT two-way remote (which you can use in other chemistry courses as well). Bring the remote to class every time. During the lecture, you will be asked to respond to lecture related problems using the remote. Correct answers will receive 2 points credit, incorrect answers 1 point credit, up to a maximum of 50 points for the course.

Grading: Grades are based on the point values below, using a 90-80-70-60 grading scheme. All assignments must be turned in on time. Late assignments are penalized **20% per day late**.

Quizzes 5 x 10:	50 points
Homework:	100 points
H-ITT Problems:	50 points
Chemistry in the News 3 x 15	45 points
Midterm	50 points
Final	100 points
<u>Labs 7 x 15</u>	<u>105 points</u>
Total:	500 points

Exams/Quizzes: The exams and quizzes are based on homework problems and problems we work in class. Focus will go toward qualitative concepts and critical thinking. If you have a doctor's note we can discuss ways to make up the lost points if you miss an exam/quiz. **Failure to take the final exam will lead to an automatic F.**

Homework: Homework problems and their due-dates are found online on WebCT. Each chapter has one quiz worth 10 points associated with it. You have an unlimited amount of attempts and your highest score will count. Additionally, exam problems will be based on problems found in quizzes. Please consult WebCT for deadlines. If you have not used WebCT before, your username is your firstclass account name (for example, **jdoe1**@firstclass.csub.edu has the user name **jdoe1**, while your password is either your student I.D. number or your social security number). WebCT is found at <http://www.csub.edu/webct/>.

Chemistry in the News: Be on the lookout for Chemistry in the newspaper. If you see an article that somehow relates to this class then clip it out (or photocopy it) and write a brief (1 paragraph) critical description of the chemical concepts found in that article. Chemistry in the news assignments are collected only on Wednesdays and you may turn in only one per week up to a maximum of three. **Note:** CiN's are accepted only if class is actually attended on the day the assignment is turned in.

Science 112 Lecture Syllabus

(subject to change)

Week	Day	Date	Topic	Reading
1	Wednesday	January 3	Lecture – Atoms and the Periodic Table	Ch. 14
2	Monday	January 8	Lecture – Atoms/Atomic Model	Ch. 14/15
2	Wednesday	January 10	Lectures – Atomic Model	Ch. 15
3	Monday	January 15	No classes – Martin-Luther-King Day	
3	Wednesday	January 17	Lecture – The Atomic Nucleus	Ch. 16
4	Monday	January 22	Lecture – Elements of Chemistry <i>Last day to withdraw without “W.”</i>	Ch. 17
4	Wednesday	January 24	Lecture – Elements of Chemistry/Mixtures	Ch. 17/18
5	Monday	January 29	Lecture – Mixtures	Ch. 18
5	Wednesday	January 31	Lecture – How Atoms Bond	Ch. 19
6	Monday	February 5	Midterm	Ch. 14 – 18
6	Wednesday	February 7	Lecture – How Atoms Bond	Ch. 19
7	Monday	February 12	Lecture – Molecular Attraction	Ch. 20
7	Wednesday	February 14	Lecture – Molecular Attraction/Chemical Reactions	Ch. 20/21
8	Monday	February 19	Lecture – Chemical Reactions	Ch. 21
8	Wednesday	February 21	Lecture – Acids and Bases	Ch. 22
9	Monday	February 26	Lecture – Acids and Bases	Ch. 22
9	Wednesday	February 28	Lecture – Oxidation and Reduction	Ch. 23
10	Monday	March 5	Lecture – Oxidation and Reduction	Ch. 23
10	Wednesday	March 7	Lecture – Organic Compounds	Ch. 24
11	Monday	March 12	Lecture – Organic Compounds	Ch. 24
11	Wednesday	March 14	2:00 – 4:30 p.m. ACS Final Exam	Ch. 14 – 24

Laboratory: The laboratory section of SCI 112 contributes 21.0% (or 105 points) to your grade. Attendance is **mandatory**. The lab report is due at the beginning of the next lab. Laboratory check-out is mandatory as well. Failure to attend will lead to the loss of 10% of your accumulated laboratory points.

Science 112 Laboratory Syllabus

Week	Day	Date	Topic	Reading
1	Wednesday	January 3	<i>Assessment Test</i>	
2	Monday/Wednesday	January 8/10	<i>Laboratory Drawers Check-in, Safety Training</i>	
3	Monday/Wednesday	January 15/17	<i>Alchemy</i>	Exp. 1
4	Monday/Wednesday	January 22/24	<i>Chemical Reactions</i>	Exp. 2
5	Monday/Wednesday	January 29/31	<i>Food Colors by Paper Chromatography</i>	Exp. 3
6	Monday/Wednesday	February 5/7	<i>Testing Sunscreens</i>	Exp. 4
7	Monday/Wednesday	February 12/14	<i>Acid Neutralization by Antacid</i> <i>Last day to withdraw.</i>	Exp. 5
8	Monday/Wednesday	February 19/21	<i>Oxidation and Reduction</i>	Exp. 6
9	Monday/Wednesday	February 26/28	<i>Synthesis of Esters</i>	Exp. 7
10	Monday/Wednesday	March 5/7	<i>Laboratory Drawer Check-out</i> <i>Review</i>	

Course Objectives

At the end of this course, the student will

- understand the physical properties of solids, liquids, and gases, such as color, mass, density, hardness, and electrical and thermal conductivity.
- know that matter can undergo physical changes (e.g. changes in state such as evaporation and freezing of water) and chemical changes (i.e., atoms in reactants rearrange to form products with new physical and chemical properties);
- know that matter consists of atoms and molecules in various arrangements, and can give the location and motion of the parts of an atom (protons, neutrons, electrons);
- know that mixtures may often be separated based on physical or chemical properties;
- be able to describe the constituents of molecules and compounds, naming elements (e.g., hydrogen, oxygen, and iron), and explain how elements are organized on the Periodic Table of the Elements on the basis of their atomic and chemical properties;
- be able to describe characteristics of solutions (such as acidic, basic, and neutral solutions) and they know the different pH levels such as soft drinks, liquid detergents, and water.

Misconduct: Cheating will not be tolerated. Anyone found cheating (copying another quiz, asking others for answers, or using textbook or notes during quizzes) will be asked to leave and will receive an “F” for the course. To avoid any doubts during quizzes, please do not talk to others

and do not look at other quizzes. Please see the “Campus Policy on Academic Dishonesty” below for further information.

Campus Policy on Academic Dishonesty

The principles of truth and honesty are recognized as fundamental to a community of teachers and scholars. The University expects that students will honor these principles and in so doing will protect the integrity of all academic work and grades. Students are expected to do all work assigned to them without unauthorized assistance and not to give unauthorized assistance.

There are certain forms of conduct that violate this community's principles. Academic dishonesty (cheating) is a broad category of actions that use fraud and deception to improve a grade or obtain course credit. Academic dishonesty is not limited to examination situations alone, but arises whenever students attempt to gain an unearned academic advantage. Plagiarism is a specific form of academic dishonesty which consists of the misuse of published or unpublished works of another by claiming them as ones own. It may consist of handing in someone else's work, copying or purchasing a composition, using ideas, paragraphs, sentences, or phrases written by another, or using data and/or statistics compiled by another without giving citation. Another example of academic dishonesty is the submission of the same, or essentially the same, paper or other assignment for credit in two different courses without receiving prior approval.

When a faculty member discovers a violation of the community's principles, the faculty member is required to give a failing grade to the student for the course. In addition to assigning the final grade, the faculty member also notifies in writing the Dean of Students and the relevant school dean that an act of academic dishonesty has occurred and a grade of F has been assigned. The student receives a copy of this letter.

The letter becomes part of the student's permanent file. If a second act of dishonesty occurs, the student is administratively dismissed from CSUB.

Under the Student Academic Grievance Procedures, a student may appeal any sanction employed by faculty or the University based on an allegation of academic dishonesty. The initiation of the grievance must occur within fifteen school days after notification of the grade is mailed or personally given to the student. Copies of these procedures are available in the offices of the school deans.