Hartnell College **Chemistry 22** **Spring 2013**
Intro Chemistry

Instructor: Mr. Cantin

Email: lcantin@hartnell.edu

Office Hours: By appointment only.

Class Schedule:
Lecture: Saturday at 8:30 to 11:50 a.m. in Merrill 22
Discussion: Saturday at 12:30 to 1:35 p.m. in Merrill 22
Laboratory: Saturday at 1:35 to 5:05 p.m. in Merrill 23

Course Description (from class schedule):
A survey of the fundamental concepts of chemistry including measurement, classification of matter, atomic structure, the periodic table, chemical bonding, nomenclature, chemical equations, stoichiometry, gas laws, solutions, and acids and bases.

Pre-requisite:
Satisfactory completion of Elementary Algebra, MATH 121; satisfactory score on the District's Math placement test; or equivalent measures that indicate proficiency in Elementary Algebra are required for success in the class.

Class Website: chemistry22.yolasite.com
Class documents (e.g., syllabus, class schedule, Powerpoint presentations, labs, and other relevant information, etc.) will be posted on the class website chemistry22.yolasite.com. Class documentation is subject to changes and it is your responsibility to ensure that you possess the most recent material.

Required Materials:

Textbook: Introduction to General, Organic, and Biochemistry, 10th Edition
by Morris Hein, Scott Pattison, Susan Arena.

- **Laboratory manual:** Labs are in PDF format on course webpage.
- Laboratory safety glasses. Can be obtained at a hardware store with 'Z87' code.
- Simple Scientific calculator (cell phones, or other electronic devices are not allowed during exams)

Homework Strategies:

This course requires 3+ hours of outside study/homework each week for success. Your homework in this course comes from two sources:
(1) Working on problems from your text. The text problems represent a fair overview of the types of problems you can expect on exams.
(2) Assigned homework problems. Each chapter will have some assigned problems to gauge you ability to understand the material.

Attendance Requirements:
You are responsible for all the material covered in this course, and it is expected that you attend and participate in all of the lecture and laboratory sessions. ***If you must be absent, then it is in your best interest to contact the instructor.*** There are a minimum amount of contact hours required for students to get credit for the course. ***Multiple absences can earn an automatic F or NP. If you miss the first two lectures or the first lab, you will automatically be dropped for non-attendance****. During the term, the instructor will not drop students except for special circumstances, such as prolonged illness.* Students who stop going to class should not assume they have been dropped. **Students are responsible to drop themselves from the class**.

Academic Integrity
As members of the college community, students at Hartnell are expected to demonstrate integrity in all academic endeavors. Students are evaluated on their own merits, so they should protect academic integrity at Hartnell College and be proud of their achievements. General principles of academic integrity include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others and to avoid using another's work as one's own. Faculty, with the full support of the College, has the right to take standards of academic integrity into account when assigning grades. All students are expected to understand and abide by these principles. Any act which gains or is intended to gain an unfair academic advantage or which compromises the integrity of the academic standards of the college may be considered an act of academic dishonesty." Common forms of academic dishonesty are: plagiarism, fabrication and cheating. Use of electronic devices other than simple calculators during exams or quizzes is specifically considered academic dishonesty. Refer to the Cañada College Catalog for detailed definition. Any student found pursuing any form of academic dishonesty will be subjected to disciplinary action according to the guidelines described in the College Catalog.

Important Considerations:
- Please check the website frequently for class updates.
- Mark assignments, homework and tests on your calendars. There are no "make-ups".
- Attendance is strongly advised. Refrain from using cell phones during lectures.
- Cell phones must be off during examinations and lectures.

Laboratory:
There are no make-up experiments. A missed experiment will earn zero points. All chemicals and laboratory equipment will be removed from the laboratory room immediately after completion of the assigned experiment. Safety glasses or goggles are to be worn at all times. Every student is responsible for reading the corresponding experiment and completing the pre-lab assignment **BEFORE** coming to the laboratory session. Pre-lab assignments are due at the beginning of lab. No late pre-lab assignments will be accepted.

Laboratory Reports:
While working on their experiment, students will record their experimental data and observations on their lab manual. After the data collection is finished, students must proceed with the analysis of their experimental data and their calculations. Finally, students need to answer any required post-laboratory questions and submit their laboratory report before leaving the laboratory room.

Each report is worth 15 points and is due immediately after the corresponding experiment is finished.

Laboratory report grading rubric:
The laboratory report includes the pre-lab assignment.

Category	**Points**
Data Recording (appropriate uncertainty and units)	2
Significant Figures	2
Show all work	5
Answer all discussion and post-lab questions using the scientific method	5
Neatness	1

Safety Points:
We have no time for unsafe behavior in the lab. There is a **-5 point** penalty (loss of 5 points) for engaging in specifically discussed unsafe behavior such as not wearing safety goggles or horseplay.

Basic Laboratory Rules and Procedures:

1. Read experiment before coming to the lab.
2. Be on time, the explanation of the experiment is the first order of business.
3. Place back-packs, sweaters, coats, purses, etc. away from the working area.
4. No eating, drinking, smoking or chewing gum in the lab.
5. All equipment, balance area, fume hoods, benches and chemical bottles or containers need to be left in the same condition as they were found.
6. Make sure you put lids back (tightly) on to corresponding chemical containers to avoid contamination and spills.
7. Dispose of paper and solid waste in waste baskets. If contaminated with chemicals, dispose as instructed.
8. Dispose of chemicals as instructed.
9. Keep your lab bench and common areas clean. Wipe spills immediately.
10. Clean all glassware immediately after use.
11. Do not leave you drawer equipment in the fume foods, by the balances or instruments.
12. Take care of computers and equipment.
13. Hot plates, magnetic stirrers, spectrophotometers, and computers must be turned off before you leave.
14. Wipe you working area clean every time immediately before leaving the lab room.

Student Learning Outcomes (SLOs)

I. Students will be able to classify matter correctly.
   a. Explain the difference between a solid, liquid and gas.
   b. Examine and classify matter and name the common elements from the periodic table.
   c. Understand chemical and physical properties.

II. Students will be able to use common laboratory equipment correctly and report measurements to the correct significant figures with proper units. Equipment includes Bunsen burners, beakers, graduated cylinders, thermometers, top loading balances,

rulers and burets.

a. Use dimensional analysis for problem solving, and show answers with correct units and with the correct significant figures.
b. Use a Bunsen burner, balance and common laboratory glassware.
c. Execute laboratory procedures safely and confidently.
d. Be able to measure temperature, mass, length, volume, and density using lab equipment.
e. Be able to perform laboratory calculations such as percent mass, titrations balancing, percent error etc.

III. Students will be able to represent chemical changes correctly through balanced chemical equations with proper formulas for elements and compounds.

a. Explain atomic theory, atomic structure, and the concept of isotopes, and be able to represent different isotopes using correct chemical symbols.
b. Use the periodic table to determine electron configuration, assign oxidation numbers and compare elements based on periodic trends (electronegativity, electron affinity, atomic radius, etc.).
c. Name ionic and molecular compounds, and name hydrocarbons with as many as 10 carbons in the longest chain.
d. Use the concept of the mole and Avogadro's number in stoichiometry.

IV. Students will understand solutions and be able to prepare a solution in the lab.

a. Define acids, bases and salts and know what components of a solution will make a buffer.
b. Draw Lewis structures, determine if a molecule is polar or non-polar, and analyze for intermolecular forces of attraction and solubility.
c. Explain principles of precipitation.
d. Know how to prepare a solution in units such as molarity, % w/v, and % w/w.
e. Understand solution conductivity.

Grading Policy:

30% Two Midterm Exams
20% Final Examination (mandatory)
18% Laboratory Reports 12 reports 15 points each
10% Chemistry Homework
12% Quizzes 6 graded, one tossed out.
10% Safety and Participation/Attendance

Grading Scale (%):

A = 90-100
B = 80-89
C = 70-79
D = 60-69

Examinations:

There are no make-up examinations. There are three scheduled exams. There will be two discussion period midterms and one final. The final examination is comprehensive and mandatory. The format of all examinations can vary and may include: multiple choice, true or false, fill in the blank, definitions, essay problems, critical thinking, and any other assessment tool appropriate for the given lecture topic being tested. Typically, exams consist of 20 -30 questions. Scantron forms are not necessary for taking exams in this course. You will be allowed to use a hand held calculator during tests. All other portable electronic devices (i.e., cellphones, Blackberry's, PDA's, laptops, etc.) are not permitted. Any use of a phone or 'smart' connected device during and exam or quiz will earn an automatic zero for that test and may face disciplinary action. See academic integrity section.

Homework:
CHECK WEBSITE FOR DUE DATES
Chapter homework will be assigned on a weekly basis. Homework is a very important way to learn anything. Unless you practice something over and over, you will not learn it well. Students who conscientiously complete all homework assignments generally do the well in the class.

Practice Problems
Working on practice problems on a regular basis is an excellent way to keep up with lecture material and be ready for examinations. Practice problems are given at the end of the textbook chapters. Practice problems, homework problems and other assignments can be discussed during office hours. Creating regular study groups is highly recommended for a successful semester.

Withdrawing from the course:
You can withdraw from the class by February 11th with no record or by May 3rd with a W on record.

Tentative Lecture Schedule and Lab Schedule are on WebAccess

Course Format
We will cover chapters 1 through 15 in the textbook. The lectures are designed to give you a foundation of the chemical concepts. I will be setting aside time in lecture to work problems from in-class handouts and homework assignments. Exams along with homework and lab assignments will be used to assess student learning. Additional details are provided below on the syllabus.

Responsibilities and Success
We share mutual responsibilities for your learning in this class. As the instructor, it is my responsibility to present material in a clear and organized manner and to assist you individually when you ask for help on labs and homework. As the student, it is your responsibility to put in the required time outside of class reading the text and doing homework and attentively attending class. Learning chemistry requires the investment of time and effort. Memorizing and attempting to learn rote problem solving strategies will not be sufficient for success in this class.

Tips for Success
1) Get the most out of studying – Schedule regular study time. The material must be mastered sequentially in manageable chunks – cramming is not effective for this material. • Find a peaceful, relatively distraction-free, well-lit place to study
• Try to study during your most productive, mentally alert times of the day
• Take short (5-10 minutes) active breaks each hour to keep yourself alert
• Be focused and stay actively involved while studying

2) Get the most out of your textbook. Read your textbook with pencil and paper at hand. Do the practice problems as you read the text.
3) Read or at least skim the chapter before lecture.
4) Recopy your lecture notes, preferably with one or two other students soon after

lecture. This will help you clear up mistakes and misconceptions.
5) Get the most out of lecture. Actively participate. Ask questions about homework that you don't understand. Ask questions to clarify concepts that aren't clear to you during lecture. Your probably are not the only student who is confused. Bring your calculator to class. We will frequently be using them to solve sample problems. This is a chance to practice problem-solving with your calculator.
6) Get the most out of your classmates. Form a study group to work on problems and worksheets and to study for exams.
7) Resources – Get help early! Ask for help when you need it both in class and out of class. Come to office hours and use e-mail. Chemistry tutors are also available in the MESA Center and in the new tutoring area in Library.

Class Schedule
A class schedule with key dates (e.g., exam dates, lab assignments, etc.) is posted on the class website. The schedule is liable to changes and you are responsible for keeping abreast of these changes.
Important Student Dates

January 22 SPRING 2013 SEMESTER CLASSES BEGIN
Jan. 22 – Feb. 2 SCHEDULE CHANGES (ADD & DROP PERIOD) - TWO WEEKS
February 1 Last day to DROP a full semester course to be eligible for a refund = 10% of course meetings – See Refund Policy Note:Students who add a full semester class after February 1st will NOT be entitled to a refund this includes open-entry courses
February 2 Last day to ADD a full-semester class (an Express Add Code must be used)
February 8 Lincoln's Day Holiday – College Closed – No Classes (No Saturday February 9th classes)
February 11 Last day to DROP a full semester course with "No Grade of Record"
February 15 Last Day to Petition for Spring 2013 graduation with $20.00 late fee
February 18 Washington's Day Holiday – College Closed – No Classes
February 22 Last day to Petition for Pass/No Pass grade option
March 25 - 29 Spring Recess – College Closed – No Classes (No Saturday Classes on March 23rd&March 30th)
April 1 Cesar Chavez Holiday – College Closed – No Classes
May 3 Last day to DROP a full semester course with a "W" grade
May 20 Evening Final (Monday night classes only)
May 24 – May 31 Final Exams (see exam schedule on page 96 for exact dates & times)
May 27 Memorial Holiday – College Closed – No Classes
May 31, 2013 Spring 2013 Semester Ends & Graduation Commencement Ceremony

This class is a huge time commitment. Please treat it as such! It is common for an intermediate General Chem class (at any school) to require 15 - 20 hours/week in homework and studying. For some people it will take more time, for some less. Keep this in mind when figuring out your schedule for this semester. Staying caught up with the class work throughout the semester will greatly help your grade and understanding of the material. Procrastinating and putting off doing work (cramming for exams) will have a serious negative affect on your grade.
You will benefit the most from your studying if your time is spread out uniformly during the week rather than concentrated into one or two study periods.

Conduct
• Please arrive on time to lecture and lab.
• Attendance to lecture is strongly advised. This is a fast-paced class covering new material every day.
• Any student who misses three unexcused lab periods ***will be dropped from the class.***
• Please turn off phones, pagers alarms or anything that can be disruptive during class.
• Mark assignments due dates and tests on your calendars. There are no “make-ups”.

Students with Disabilities: It is the policy of Hartnell College to accommodate individuals with disabilities pursuant to federal law and the University’s commitment to equal educational opportunities. It is the responsibility of the student to present documentation to the instructor that clearly outlines all necessary accommodations. DSPS students in need of accommodations should call Phone (831) 755-6760 for verification and determination of reasonable accommodations.