SANTA CLARA UNIVERSITY SUMMER TERM, 2020

COURSE SYLLABUS

<u>INSTRUCTOR</u>: Dr. Steven L. Fedder E-mail: <u>sfedder@scu.edu</u> FAX: 554-7811

<u>TIME AND PLACE</u>: Alumni Science 120 M,T,W,R,F 9:00am to noon

OFFICE HOURS: Office - Daly Science 104

Times – Monday thru Friday, 12:45 – 2:45pm Other times may be possible by arrangement

<u>REQUIRED MATERIALS</u>:

- 1) <u>Chemistry, Structure and Properties, 2nd Edition</u>, by Nivaldo Tro, Pearson, 2019.
- 2) The Campus Bookstore is selling a package deal that includes both the e-text and a loose-leaf 3-hole punched text, and access to an ancillary called Mastering Chemistry, which some students find useful. You also need to purchase <u>my interactive handout package</u>, found separately at the Bookstore. A Solutions Manual can be helpful and perhaps shared with 2-3 others to lower cost.
- 3) A <u>pocket calculator</u> capable of scientific notation/logarithms, etc. Cost = \$15. A solar powered model eliminates the problem of dead batteries.
- A <u>3-ring binder</u> for notes to be interleaved with interactive course handouts. A 1" binder is ideal. <u>Also, a 2" 3-ring binder</u> for your loose leaf copy of the Tro textbook is vital.
- 5) For laboratory, a bound notebook, a lab coat, and safety goggles are required and all available at the Campus Bookstore

COURSE CONTENT:

Although most students entering SCU have taken a chemistry course in high school, it was often during the sophomore year and likely varied greatly in quality, so I assume minimal prior knowledge of chemistry but a high level of interest in learning about it. Chemistry 11 **learning objectives include** exposure to and an understanding of 1) the language of chemistry including chemical nomenclature, symbols and common units of measurement, 2) the internal structure of atoms, particularly the allowed energies of and behavior of an atom's electrons, 3) the concepts of ionic and covalent bonding, 4) the accepted theory predicting the shapes of molecules including the concept of atomic orbital hybridization, 5) stoichiometry; the chemical arithmetic associated with the formulas for chemicals and with balanced chemical reactions, 6) the driving forces involved in reactions of aqueous solutions of strong electrolytes, 7) the heat changes associated with chemical reactions and physical processes, and 8) the basics of the role of entropy and Gibbs free energy in chemical reactions and physical processes. The information will be integrated as much as possible and will be presented using relevant examples from the consumer, medical and environmental arenas to provide a context for the learning. <u>Pages 6-8 give a much more detailed list of learning objectives</u>.

<u>**RECOMMENDED APPROACH</u>**: Although everyone's learning style is somewhat different, the following suggestions seem to help most people.</u>

-Please <u>DON'T MISS CLASS</u>, unless it is absolutely unavoidable. If you do miss a class, please obtain class notes and any completed interactive handouts for that day from a classmate.

-Do any assigned reading before class.

-Take good notes, but not at the expense of listening to what I am saying. -you may want to bring 2-3 different color pens or pencils for more effective note taking. -don't forget to use your class notes and handouts as a substantial part of preparing for exams.

-If possible, please take 10 minutes before each class to <u>look over the notes from the previous class</u>; this is very valuable in resetting the context for the material.

-<u>Do assigned problems faithfully</u>, with an eye toward answering the question "What was the author trying to test my knowledge/understanding of with this question"?

-<u>Be coachable</u>; I've helped thousands of students learn chemistry over the years and certain approaches (like these suggestions here) really do work.

-<u>Ask questions</u> when you are confused; don't let "the veil" descend and not attempt to immediately pull it back up.

-Don't underestimate the importance of **repetition** in learning chemistry. In many ways, chemistry can be likened to a foreign language; by focusing on the things that are repeated frequently, you not only learn them, but get the idea that they must be more important than something you hear or read about only once. You'll want to essentially <u>master</u> the most basic concepts. <u>Reading over your lecture notes</u> (even if there isn't an exam coming up) helps with more repetition.

HOMEWORK:

Although I don't collect or grade homework, it is **<u>crucial to do</u>** it to convert the <u>passive learning</u> of the classroom and your readings into <u>active learning</u>. I will suggest end of chapter problems to try either at the close of each lecture, or a bit later via email. It is crucial to check your scu email account regularly. Most of these assigned problems are odd-numbered at the end of each chapter. The Study Guide/Solutions Manual that is available at the Bookstore has the solutions to all these odd numbered questions. If you want <u>more practice</u> you can do some of the even-numbered homework problems in the back of each chapter as well. If a question or problem still stumps you, even after consulting the Solutions Manual, that is when an email to me or visit to office hours is called for. You may also incorporate some material from the Mastering Chemistry product, which accompanies your textbook package. If you want additional or alternative explanations regarding certain topics you may want to investigate the free offerings from Khan Academy or other reputable resources available on the Web. Use whatever study techniques and resources you find work for you. College is very much about ascertaining your learning style and then managing your time very well.

ASSESSMENT:

- 1) Quizzes two of them (25 minutes long)
- 2) <u>Midterm exams</u> 2 of them (one half of class period)
- 3) Final exam Friday, July 3, 2020. Alumni Science 120
- 4) <u>Laboratory performance</u> contributes a small amount toward course grade.

GRADING:

2 quizzes at 50 points each	= 100 points
2 exams at 150 points each	= 300 points
Final exam	= 250 points
Laboratory	= pass/fail*
Total points	= -650 points

Grades will be based largely on your performance on the 3 quizzes, 2 exams and the final exam. Your grade is also influenced by your performance in the laboratory; see below.

LABORATORY PROCEDURES:

You must successfully complete and pass the laboratory section of the course in order to pass the class. Carefully review the schedule for the laboratory section provided in the laboratory manual found on Camino, a learning platform used by many faculty. I myself do not use Camino but it's essential for lab.

As required by the Department of Chemistry and Biochemistry, <u>laboratory attendance is mandatory</u>. The Chemistry 11 laboratory will be graded on a modified pass/no pass basis. Students must show proficiency in the laboratory portion of the course and fulfill the minimum attendance requirement as indicated below:

(1) In order to be eligible for a course grade of D- or higher you must not accumulate more than one unapproved absence or two total absences (for any reason excused or not) from lab. In rare cases make-up labs may be possible but this is left to the discretion of your individual laboratory instructor. IN ADDITION, A DEDUCTION OF 1% WILL BE MADE FROM YOUR LECTURE TOTAL IF YOU HAVE AN UNEXCUSED ABSENCE FROM LAB.

(2) The final course grade in Chemistry 11 will be determined by your accumulated points in lecture only since lab is pass/no pass. However, as an added incentive to do your very best in lab, points will be added to or deducted from your lecture total according to the following schedule:

Lab "grade" earned	How this influences your overall course grade
High Pass	A bonus equal to 2% will be added to your lecture point total
Pass	A bonus equal to 1% will be added to your lecture point total
Low Pass	No change in lecture point total
Fail	Failure in the entire course

COURSE LETTER GRADE:

Letter grades are based on how I feel the class has done relative to the difficulty of the exams and relative to students in the same class over a period of years. I'll include an approximate letter grade with each returned exam to give you a sense of what you've earned. Focus on the material and the grades will take care of themselves. Because + and - designations on letter grades carry numerical meaning at SCU, differences between one grade and another,e.g., an A- at 3.7 vs. a B+ at 3.3, are fairly small. This reduces the pressure on students and faculty. Try to make the paradigm shift from points and grades to learning as deliberately as you can in your transition from high school to college.

CORE PATHWAY ENTRY COURSE:

This course serves as an entry course into the Values in Science, Technology, and Society Pathway within the 2009 University Core. You can find information about Pathways on the Core Curriculum website <u>http://scu.edu/core</u> including specific Pathways, all courses associated with them, and the Reflection Essay prompt and rubric used to evaluate the final essay you will submit. <u>http://www.scu.edu/provost/ugst/core/pathways/resources/</u>. So be sure to save your work for from class to use in your reflection essay.

If you declare this Pathway, you may use a representative piece of work from this course as one of the Pathway materials you will upload via eCampus during your junior or senior year. Therefore, we recommend that you keep electronic copies of your work using Dropbox or Google Docs, in addition to saving copies on your own computer or flash drives. This may ensure you will have a range of choices for retrieving your saved files when you analyze and assemble your Pathway materials in preparation to write the Pathway reflection essay during your senior year.

CORE NATURAL SCIENCE WITH LAB FULFILLMENT:

One might assume that any lab science course has been approved to meet the Core Curriculum requirement for a natural science with lab course, but many do not. Chemistry 11 has been approved for that requirement and therefore meets it via the learning goals noted here. Students will

1.1 Demonstrate a basic understanding of the theory and concepts central to the study of a particular topic or discipline in the natural sciences. (Scientific Inquiry, Complexity, Critical Thinking)

1.2 Apply scientific reasoning and methods of inquiry, such as formulating testable hypotheses, identifying variables, or collecting experimental or observational data that explain phenomena in the natural world. (Scientific Inquiry, Complexity, Critical Thinking)

1.3 Interpret scientific data, qualitatively and quantitatively, in order to derive conclusions appropriate to the scope and quality of the data, attentive to concepts of probability, causation, and correlation. (Scientific Inquiry, Complexity, Critical Thinking, Mathematical & Quantitative Reasoning)

1.4 Recognize limitations of evidence produced by experimental and observational methods. (Scientific Inquiry, Complexity, Critical Thinking, Mathematical & Quantitative Reasoning)

STUDENT ATHLETES:

It is challenging to play a sport, with the time consuming practices and occasional traveling, and be successful in a subject as rigorous as chemistry. If you are an athlete, particularly in-season, please make prior arrangements with a classmate to obtain lecture notes, pickup handouts and pass along class announcements. Good planning really helps minimize the disruption of missing a class or two during the term.

SEXUAL HARASSMENT AND DISCRIMINIATION (Title IX)

Santa Clara University upholds a zero tolerance policy for discrimination, harassment and sexual misconduct. If you (or someone you know) have experienced discrimination or harassment, including sexual assault, domestic and dating violence or stalking, I encourage you to tell someone promptly. For more information, please go to <u>www.scu.edu/studentlife/about/osl.cfm</u> and click on the link for the University's Gender-Based Discrimination and Sexual Misconduct Policy or contact the University's EEO

and Title IX Coordinator, Belinda Guthrie, at <u>408-554-3043</u> or by email at bguthrie@scu.edu. Reports may be submitted online through <u>www.scu.edu/osl/report</u> or anonymously through Ethicspoint: <u>www.ethicspoint.com or http://stage-www.scu.edu/hr/quick-links/ethics-point</u>

OFFICE OF ACCESSIBLE EDUCATION

If you have a disability for which accommodations may be required in this class, please contact Office of Accessible Education, Benson 1, <u>http://www.scu.edu/oae</u> as soon as possible to discuss your needs and register for accommodations with the University. If you have already arranged accommodations through OAE, please discuss them with me during my office hours. Students who have medical needs related to pregnancy or parenting may also be eligible for accommodations.

While I am happy to assist you, I am unable to provide accommodations until I have received verification from the Office of Accessible Education. OAE will work with students and faculty to arrange proctored exams for students whose accommodations include double time for exams and/or assisted technology. (Students with approved accommodations of time-and-a-half should talk with me as soon as possible). OAE must be contacted in advance to schedule proctored examinations or to arrange other accommodations. The OAE would be grateful for advance notice of at least two weeks. For more info. contact OAE at 408-554-4109.

<u>ACADEMIC INTEGRITY PLEDGE</u>: Santa Clara University is implementing an Academic Integrity pledge designed to deepen the understanding of and commitment to honesty and academic integrity.

The Academic Integrity Pledge states:

"I am committed to being a person of integrity. I pledge, as a member of the Santa Clara University community, to abide by and uphold the standards of academic integrity contained in the Student Conduct Code."

I ask that you affirm this pledge and apply these principles to your work in this class.

ACADEMIC INTEGRITY DETAILS:

<u>Giving or receiving</u> unauthorized aid in any form is not tolerated and can result in course failure. Academic dishonesty includes looking at another student's paper during an exam, allowing another student to copy off your paper, the use of lecture notes, crib sheets or textbooks during an exam, the inappropriate use of programmable calculators and the use of text messaging to communicate during exams. You may not wear earphones or ear buds during any exam or have a cell phone in your exam desk area.

SOME IMPORTANT DATES:

Tuesday, June 16	- last day to withdraw from course with 100% tuition refund.
Wednesday, June 17	- last day to withdraw from course; without a W on transcript
Wednesday, June 17	- last day to withdraw from course; with a 50% tuition refund
Friday, June 28	- last day to withdraw from course; <u>a W will appear on transcript</u>
Friday, July 3	- final exam from 9:00am to noon, Alumni Science 120

<u>GENERAL LEARNING OBJECTIVES</u>: The primary objective of the general chemistry sequence is to give you a solid foundation in both theoretical and descriptive chemistry. Special emphasis will be placed on development of problem solving skills as well as on the application of basic chemical concepts. We will accomplish this goal using a variety of activities. These will include lectures, laboratory experiments, problem solving, examinations, and A LOT of individual effort outside of the classroom. It is VITAL to do all assigned end of chapter problems.

The laboratory portion of the course will provide you with the opportunity to develop skills necessary for scientific discovery (e.g., critical thinking and observation skills, ability to handle chemical reagents and instruments safely). The laboratory experiments this quarter will include those designed to introduce you to topics not covered in lecture (enrichment) as well as those designed to reinforce or introduce some of the topics discussed in lecture.

BASIC LEARNING OBJECTIVES:

Goal 1: Learn the fundamentals of the properties of matter, measurement and uncertainty and acquire a thorough understanding of the modern theory of atomic structure.

1) Ongoing Skill:

- a. <u>Dimensional Analysis</u> Understand how to solve a quantitative problem by applying conversion factors. Careful analysis of units can be used to evaluate and create the approach to solving problems of varying levels of complexity. This is ongoing throughout the year and increases in complexity as your foundational knowledge increases.
- 2) Objectives for Chapter E (Independent Reading and Independent Problem Solving):
 - a. Learn and be able to use SI units, derived SI units and metric prefixes, including the recognition of the uncertainty in measurements, the correct use of significant figures.
 - b. Master the application of dimensional analysis to problem solving.
 - c. Understand the difference between accuracy and precision.
- 3) Objectives for Chapter 1 (Independent Reading and Independent Problem Solving):
 - a. Be able to distinguish elements from compounds, pure substances from mixtures and homogeneous from heterogeneous mixtures (solutions). Learn rudiments of mixture separation into pure substances and the distinction between physical and chemical properties (readings).
 - b. Comprehend the properties, atomic locations and interactions of protons, neutrons and electrons and the role these subatomic particles play in the identity of atoms and ions.
 - c. Recognize the importance of subatomic particles in determining the identity of isotopes and how isotopic abundance factors into average atomic mass.
 - d. Recognize how the atomic number goes into the arrangement of the periodic table
 - e. Learn the symbols and names of dozens of the common chemical elements, and begin to assimilate the terminology (language) of chemistry.
 - f. Apply Avogadro's number and the mole concept to allow conversion between the atomic/molecular level and the macroscopic level.
 - g. Understand how to formulate a testable hypothesis and design an informative experiment to explain phenomena observed in the natural world.
 - h. Be able to recognize limitations of experimental and observational methods and understand concepts of probability, causation, and correlation.

Goal 2: Acquire a thorough understanding of the modern theory of atomic structure and atomic level phenomena.

- 1) Objectives for Chapter 2 (Lecture, Reading and Problem Solving):
 - a. Understand the importance of and how to calculate the wavelength, the frequency and the energy of a photon.
 - b. Recognize the characteristics of electromagnetic radiation and how it interacts with matter.
 - c. Understand the phenomenon of atomic absorption and emission and be able to distinguish ground from excited state atoms.
 - d. Be able to calculate the energy of the transitions of electrons in atoms and the relationship to the energy of a photon.
 - e. Understand the implications of wave mechanics and the quantization of electrons energies and spin, including quantum numbers, atomic orbital energy, shape, orientation and electron capacity.

Goal 3: Learn the organization and information conveyed by the periodic table of the chemical elements.

- 1) Objectives for Chapter 3 (Lecture, Reading and Problem Solving):
 - a. Recognize the relationship between the principle quantum number of occupied orbitals, the shape of occupied orbitals and writing of electron configurations for atoms and monatomic ions.
 - b. Learn the rationale for the table's structure and the rationale for groupings of elements.
 - c. Know trends in metallic character, atomic radius, ionization energy, electrons affinity and electronegativity in the periodic table.
 - d. Know the relationship between position in the periodic table and the likely chemical bonding behavior of an element.

Goal 4 : Recognize how atoms are the building block of molecules, compounds and elements.

- 1) Objectives for Chapter 4 (Lecture, Reading and Problem Solving):
 - a. Depict valence electrons using representative element Lewis symbols.
 - b. Be able to determine the molecular and empirical formula of a compound.
 - c. Understand the difference between ionic and covalent bonding and be able to recognize ionic compounds and molecular compounds from the chemical formula.
 - d. Apply calculation conversions between grams and moles to chemical problems using molar masses.
 - e. Be able to name common cations and anions and ionic compounds given the chemical formula and be able to write the formulas of common cations and anions and ionic compounds given the name.
 - f. Be able to name covalent compounds given the chemical formula and be able to write the formulas of covalent compounds given the name.
 - g. Be able to determine empirical and actual formulas of chemical compounds from elemental analysis data. Also be able to calculate % composition from this data.

Goal 5: Obtain a thorough introduction to modern chemical bonding theories and their implications.

- 1) Objectives for Chapter 5 (Lecture, Reading and Problem Solving):
 - a. Learn to write the best Lewis Structures that accurately depicting bonding and nonbonding electrons.
 - b. When multiple Lewis Structures are possible learn to utilize the concepts of Formal Charge and the Octet Rule to predict the structure that contributes the most to the actual molecule.
 - c. Recognize resonance and how to write the needed number of resonance structures to accurately depict a molecule.
 - d. Learn the use of electronegativity as a predictor of ionicity in binary compounds and as a bond polarity predictor in molecules with covalent bonding and be able to predict if molecules have a zero or non-zero dipole moment.
 - e. Be able predict both VSEPR and actual geometry for simple covalent molecules and polyatomic ions.
- 2) Objectives for Chapter 6 (Lecture, Reading and Problem Solving):
 - a. Learn the atomic orbital hybridization model in relation to VSEPR theory.
 - b. Learn the difference between sigma and pi bonding, know what atomic orbital overlap is associated with any covalent bond.
 - c. Begin to learn the difference between the valence bond and molecular orbital theories of bonding.

Goal 6: Analyze the quantitative implications of chemical formulas and chemical reactions, including processes occurring in solution.

- 1) Objectives for Chapter 7 (Lecture, Reading and Problem Solving):
 - a. Be able to balance a chemical formula and recognize the importance of stoichiometric coefficients and subscripts in a chemical formula.
 - b. Perform calculations utilizing the stoichiometric coefficients in a balanced reaction.
 - c. Recognize combustion reactions and their ubiquitous importance.
 - d. Be able to complete and balance combustion reactions of C,H,O,N,S containing compounds.
 - e. Master all conversions and calculations relating to chemical reactions, including limiting reactant/theoretical yield/percent yield calculations and including reactions occurring in solution introduced in the next chapter.

Goal 7: Begin to learn and categorize selected types of chemical reactions in aqueous solution.

- 1) Objectives for Chapter 8 (Lecture, Reading and Problem Solving):
 - a. Determine chemical concentration with appropriate units, particularly molarity, and how and when to perform calculations for simple dilutions.
 - b. Learn the use of stoichiometry in solution calculations, specifically be able to apply the stoichiometry and limiting reactant concepts to solutions.
 - c. Learn to recognize and distinguish between Precipitation Reactions, Acid-Base Reactions and Oxidation-Reduction Reactions.
 - d. Learn to predict the products and states of Precipitation reactions.
 - e. Learn to recognize and name acids, bases and their salts.

- f. Learn to predict the products and states of Acid-Base reactions.
- g. Learn to recognize strong, weak and non-electrolytes and the role of non-electrolyte and weak electrolyte formation as a driving force for reactions of solutions of strong electrolytes.
- h. Learn to write and balance Molecular Equations, Complete Ionic Equations and Net Ionic Equations.
- i. Be able to assign Oxidation Numbers/States for each element in a compound.
- j. Learn to predict the products of Oxidation-Reduction Reactions and the spontaneity of these reactions.

Goal 8: Understand the various forms of energy and the various roles energy plays in physical processes and chemical systems and reactions.

- 1) Objectives for Chapter 9 (Lecture, Reading and Problem Solving):
 - a. Recognize the nature of the energy of the system and surroundings with respect to heat, work and potential energy.
 - b. Comprehend Enthalpy (heat of reaction), a major reoccurring property.
 - c. Learn the First Law of Thermodynamics and its chemical applications/implications.
 - d. Learn and use Hess's Law as applied to physical processes and chemical reactions.
 - e. Learn the role of enthalpy in physical and chemical processes, including the meaning and the manipulations of enthalpies of formation.
 - f. Understand the methods and calculations of basic calorimetry.
- 2) Objectives for Chapter 18 (Lecture, Reading and Problem Solving):
 - a. Learn the Second Law of Thermodynamics and its chemical applications/implications.
 - b. Define entropy and Gibbs free energy. Then, apply both to understand the thermodynamics of a chemical reaction.
 - c. Relate changes Gibbs free energy to changes in entropy and enthalpy to predict spontaneity of a reaction.
 - d. Calculate changes in entropy or Gibbs free energy of a reaction if given standard values, or changes in enthalpy for the reaction.

Natural Science Core Learning Goals and Objectives: (Also shown on page 4)

Goal: Scientific Inquiry, Complexity, Critical Thinking, Mathematical and Quantitative Reasoning

- 1) <u>Objectives:</u>
 - a. Demonstrate an understanding of the theory and concepts central to the study of a particular area or topic treated by the natural sciences.
 - b. Understand how to formulate a testable hypothesis and design an informative experiment to explain phenomena observed in the natural world.
 - c. Be able to interpret data from scientific experimentation both qualitatively and quantitatively, in order to derive conclusions appropriate to the scope and quality of data.
 - d. Be able to recognize limitations of experimental and observational methods and understand concepts of probability, causation, and correlation.

LECTURE SCHEDULE

<u>Note</u>: We may cover material at a different pace than this; treat this as a rough calendar. I'll be more specific at the end of each class as we move through the course.

<u>DAY</u>	DATE	<u>CHAPTER</u>	PAGES	TOPICS
М	JUNE 15	Introductory R	emarks - Chapter E	Units, conversions, significant figures and density
	Pages 34-47 car	E	2-25	<u>Chemistry basics</u> : units, dimensional analysis, metric prefixes, significant figures in calculations – it's mostly historical discovery descriptions
Т	JUNE 16	1	48-62	Simple atomic structure, isotopes, atomic and mass numbers, atomic weights, Avogadro's number
W	JUNE 17	2	74-103	Features of electromagnetic radiation, quantization of electron energies (line spectra), quantum numbers and atomic orbital shapes and energies.
R	JUNE 18	Quiz 1 3	112-128	Electron configurations for atoms and simple ions, Effective nuclear charge (ENC) concept, periodic table trends in atomic radius, ionization energy (IE) and electron affinity (EA), Born/Haber cycle
F	JUNE 19	3 and 4	128-137	Distinguishing ionic from covalent compounds, naming ionic compounds and binary covalent molecular compde
		Ah, the we	ekend!!	
М	JUNE 22	EXAM I (CHAP) 4	T ERS E, 1, 2, 3) 138-148	Determining the empirical formula of compounds
Т	JUNE 23	4 and 5	158-192	Guidelines for Lewis structures for molecular covalent compounds and polyatomic ions, octet expansion
W	JUNE 24	5	204-227	Resonance concept, electron delocalization, VSEPR theory (role of lone pairs), molecular shapes,
R	JUNE 25	Quiz 2 5 and 6	228-239 250-256	Central atom hybridization, valence bond theory, bond lengths and strengths
F	JUNE 26	6	258-278	Details of pi bonding, complex molecule analysis Brief look at molecular orbital theory.
		Ah, the we	ekend!	
М	JUNE 29	EXAM II (CHAP) 7	TERS 4, 5, most of 6) 286-299	Writing and balancing reactions by inspection Climate change
Т	JUNE 30	7 and 8	299-306 318-347	Limiting reactant/theoretical yield, stoichiometry Concentration units and metathesis reactions
W	JULY 1	8 and 9	347-356 366-381	Thermochemistry terminology, constant volume and constant pressure calorimetry
R	JULY 2	9 18	381-401 797-826	Hess's Law, enthalpies of formation, standard entropy changes and intro to Gibbs free energy

F JULY 3

Emergency Response Planning

- 1. A fire alarm activation means leave the building immediately.
- 2. During an <u>Earthquake</u>, "Drop, Cover and Hold On." Once the shaking stops look around to make sure it is safe to leave the building.
- 3. Look at the <u>Fire Evacuation Maps</u> posted in the building so that you can understand what your evacuation options are to exit the building (<u>if you have a</u> <u>Fire Evacuation Map in the classroom, point to it</u>).
- 4. Leave the building in an orderly fashion. Please take only your phone and car keys. All other items should be left behind.
- 5. If individuals need assistance to leave the building, please help them get to the assembly area if you do not know where your building assembly area is located move 300 feet away from the building in a safe direction.
- 6. Once outside, move to the assembly area, stay at the assembly area and wait until Campus Safety Services advises you to move to another location or releases you to return to your building.
- 7. Your cooperation is necessary to provide an orderly and safe exit for our guests, students, faculty and staff if an emergency were to occur.

