

GENERAL CHEMISTRY II  
CHEM 1412.011 (23308)  
LECTURE COMPONENT  
SPRING 2015  
COURSE SYLLABUS

Meeting Days / Times:	Tuesdays, 7:00 pm – 9:30 am in San Jacinto 106	
Prerequisite:	CHEM 1311 or CHEM 1411 with a grade of “C” or better.	
Course Description:	Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry.	
Instructor:	Mr. Dale L. Robinson	
Office:	San Jacinto 206	
Phone:	210-486-3375	
E-Mail:	<a href="mailto:drobinson@alamo.edu">drobinson@alamo.edu</a>	
Website:	<a href="http://www.dlrgenchem.com">www.dlrgenchem.com</a>	
Chat:	<a href="http://elluminatelive.alamo.edu">http://elluminatelive.alamo.edu</a>	
Text:	No textbook required. This course will use a combination of instructor-developed materials and other open source materials.	
Grading:	Exam Average (drop lowest)	45%
	Quiz Average (drop 2 lowest)	20%
	Problem-Based Learning	10%
	Comprehensive Final Exam	25%
	TOTAL	100%
Letter Grade Assignment:	A:	Semester score $\geq 90$
	B:	$80 \leq$ Semester score $< 90$
	C:	$70 \leq$ Semester score $< 80$
	D:	$60 \leq$ Semester score $< 70$
	F:	Semester score $< 60$

$$\text{Semester score} = 0.45 * \text{exam avg} + 0.20 * \text{quiz avg} + 0.10 * \text{pbl} + 0.25 * \text{final}$$

## COURSE POLICIES

Students are expected to arrive on time for class, remain in class for the full period and have regular attendance. Four (4) or more absences may result in the student being dropped from the course. Excessive tardiness or leaving early may be counted as an additional absence when, in the instructor's estimation, the student has missed the equivalent of one class. Students are responsible for all information missed while absent. Make-up work is allowed only for valid, documented reasons (examples: illness or military duty) and only if the missing grade can not be removed as a "drop" grade. Work missed due to tardiness, leaving early, or being out of the classroom during the class period can not be made up.

It should be noted that the above policies give the instructor the *option* to drop habitually absent students, but not the *obligation* to do so. Sometimes absences do not become a problem until late in the semester, when it is too late to drop the student. **The instructor is not responsible for any negative consequences that result from failing to drop a student who "should" have been dropped, or for dropping a student who did not want to be dropped.** A student with attendance problems who wants to continue in the course should discuss their situation with the instructor. A student who wants to withdraw from the course should fill out a withdrawal slip, get it signed by the instructor and turn it in at the Admissions Office. They should not depend on an instructor-initiated withdrawal. A student who stops attending but is still "enrolled" at the end of the semester will be assigned a performance grade, which will usually be an F since all missing work earns a grade of zero.

Students should keep all course-related material (notes taken in class, handouts, assignments, etc.) in a notebook that is taken to each class meeting. The course textbook and a scientific calculator should also be brought to every class.

The quizzes in this course may be a mix of in-class and out-of-class online assignments. Online quizzes will be in the Canvas learning management system and will be free to Palo Alto students (accessible through ACES).

To facilitate the development of skills in critical thinking, communication, and teamwork, this course requires the student to participate with other students in problem-based learning projects. In problem-based learning (PBL), you experience learning as it happens in the real world. Students work in groups of 2-4, and are presented with problems that might arise in real life. The student groups then apply the principles of chemistry to solve the problem. That is, the problem drives the learning, instead of the other way around. Student groups will keep the instructor informed of their meetings and division of labor along the way, and the final product will be a written report by the group that discusses the problem, presents and analyzes the appropriate chemical principles, and recommends a solution to the problem. The number of PBL assignments has not been set in advance, in order to allow flexibility in the amount of time the student groups need to solve a problem. Students are graded as a group, but the instructor reserves the right to make adjustments to individual student grades for significant differences in participation or cooperation among group members. The PBL grade accounts for 10% of your course grade.

Exams will generally be in the multiple choice format, though the instructor has the option of using other formats. You will be told prior to the exam what to expect with regard to format and number of questions.

Students are expected to uphold the principles of academic integrity in this course. A student who uses unauthorized materials or assistance in connection with a course assignment, or who presents the work of others as if it were their own (plagiarism) is guilty of academic dishonesty. A student who knowingly assists others in committing these offenses is also guilty of academic dishonesty. The penalty for academic dishonesty is a grade of zero on the affected assignment(s). Zeros assigned under these circumstances can not be dropped as the lowest grade. In the case of serious infractions, or repeat offenders, the incident(s) will be reported to Dean of Academic Affairs.

## LEARNING OUTCOMES

Upon successful completion of this course, students will:

1. State the characteristics of liquids and solids, including phase diagrams and spectrometry.
2. Articulate the importance of intermolecular interactions and predict trends in physical properties.
3. Identify the characteristics of acids, bases, and salts, and solve problems based on their quantitative relationships.
4. Identify and balance oxidation-reduction equations, and solve redox titration problems.
5. Determine the rate of a reaction and its dependence on concentration, time, and temperature.
6. Apply the principles of equilibrium to aqueous systems using Le Chatelier's Principle to predict the effects of concentration, pressure, and temperature changes on equilibrium mixtures.
7. Analyze and perform calculations with the thermodynamic functions enthalpy, entropy, and free energy.
8. Discuss the construction and operation of galvanic and electrolytic electrochemical cells, and determine standard and non-standard cell potentials.
9. Define nuclear decay processes.
10. Describe basic principles of organic chemistry and descriptive inorganic chemistry.

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TENTATIVE SCHEDULE

January 20	Unit 1
January 27	Unit 1 & 2
February 3	Unit 2
February 10	<b>EXAM 1</b> & Unit 3
February 17	Unit 3 & 4
February 24	Unit 4
March 3	<b>EXAM 2</b> & Unit 5
March 10	SPRING BREAK
March 17	Unit 5 & 6
March 24	Unit 6
March 31	Unit 7
April 7	<b>EXAM 3</b> & Unit 8
April 14	Unit 8
April 21	Unit 9
April 28	Unit 9 & 10
May 5	Unit 10 & <b>EXAM 4</b>
May 12	<b>FINAL EXAM 7:15 pm – 9:15 pm</b>

## Academic Calendar for the Spring 2015 (16-week) Semester

<b>Date</b>	<b>Day of Week</b>	<b>Event</b>
January 5	Monday	College opens
January 12	Monday	Faculty Report
January 19	Monday	Martin Luther King Day – College closed
January 20	Tuesday	Classes begin
January 24	Saturday	Weekend classes begin
February 4	Wednesday	Census date.
March 9 – 15	Monday - Sunday	Spring Break – College Closed
April 3 – 5	Friday - Sunday	Easter Holiday – College closed
April 17	Friday	Last day to withdraw
April 24	Friday	Fiesta Holiday – College closed Weekend classes will meet
May 8	Friday	Last day of classes
May 11 – 16	Monday - Saturday	Final Examinations
May 16	Saturday	End of Spring 2015 Semester
September 14, 2015	Monday	Last day for Incomplete (“I”) grades to be completed