

WEST LOS ANGELES COLLEGE
CHEMISTRY 60: INTRODUCTION TO GENERAL CHEMISTRY
SPRING 2015

Instructor: Elisa Atti

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Lecture: T, Th 1:00-2:25 pm MSA 005

Conference: T 2:35-4:40 pm MSA 005

LAB: Th 2:35 –4:40 pm MSA 402

Section #: 0491

Office: MSB 211

Office hour: T, Th: 11:30 am-12:30 pm

Course description and objectives

This course is an introduction to basic chemistry for high school graduates who are reentering college after a long absence and/or for students who need this course in preparation for Chemistry 101. This course is also recommended for students who did not take high school chemistry.

This course provides an introduction to the general principles and laws of modern general chemistry. Topics include chemical measurements, properties of atoms and molecules, chemical reactions, stoichiometry, and properties of gases.

The laboratory exercises include gravimetric and volumetric analyses, elementary qualitative analysis, and experiments in solution.

Student Learning Outcomes:

Upon a successful completion of the course, you will be able to:

- Use dimensional analysis with proper attention to units and significant figures.
- Understand the properties and classification of matter.
- Demonstrate knowledge of reaction energies, reaction rate, and equilibrium.
- Understand the basic model of the atom.
- Be able to name and classify simple inorganic and organic compounds.
- Write simple chemical equations to represent chemical reactions and balance them to illustrate the conservation of matter. Identify basic types of chemical reactions.
- Use chemical equations and information about molar masses to predict quantitatively the masses of reactants and products in chemical reactions.
- Identify types of chemical bonds and molecular shapes. Explain how intermolecular forces determine the states of matter.
- Calculate solution concentration units such as molarity. Understand the concept of dilution.

- Be able to identify the main physical attributes of the liquid state, the solid state, and the gaseous state and the energy associated with phase changes.
- Understand the gas laws and their application in quantitative problems.
- Apply the knowledge of acids and bases to calculation of pH and titration.
- Demonstrate knowledge of reaction energies, reaction rate, and equilibrium.
- Understand safety, transfer, and measurement of chemicals in a laboratory setting.

Suggested Text Book:

- Zumdahl Introductory Chemistry, A Foundation 7th Ed, Houghton Mifflin Company.

Required Laboratory Manual:

- James F. Hall, Introductory Chemistry in the Laboratory, D. C. Heath and Company. 7th Edition.

Materials:

- Scantrons for exams and final. Scantron is not required for quizzes.
- Calculator.

Material provided by instructor:

Printouts of each lecture's power point presentation are provided to students attending each class. HOWEVER, PRINTOUTS ARE NOT INTENDED AS A SUBSTITUTION FOR STUDENTS' NOTES, OR FAMILIARITY WITH THE TEXTBOOK. The power point presentation shown during each lecture is merely an aid to the instructor, from which to expound and discuss in detail the topics presented. Printouts are not necessarily inclusive of all material covered during the lecture. The instructor strongly encourages students to take detailed notes in order to gain mastery of lecture material.

Attendance:

Students are encouraged to attend ALL lectures, to arrive on time, and to remain for the entire lecture. While attendance is not mandatory, mastery of the material, and success on quizzes, exams, and final, will be strongly correlated to students' level of attendance. (Students who attend do well; those who don't, do not. I have not seen any exceptions.)

LABORATORY ATTENDANCE AT ALL LAB SESSIONS IS REQUIRED (MANDATORY!). Students are expected to be prepared and to attend their laboratory section at the scheduled time. Students who arrive to class more than 15 minutes late may not be admitted.

LABORATORY ABSENCES: If you are absent, you must contact the instructor via email ASAP (ideally in advance, but no more than 24 hours after the missed lab). A compelling reason and documentation are required for consideration for partial credit; otherwise a score of zero will be reported. IF THE STUDENT IS ABSENT FROM ANY TWO LABS WITHOUT DOCUMENTED REASONS, THE INSTRUCTOR WILL DROP THE STUDENT FROM THE CLASS.

Email Correspondence:

Electronic mail is the official method of communication. Students' LACCD academic email addresses are recorded in the college's electronic directories. Please make sure to check it weekly.

Lab preparation and lab reports:

Chem. 60 is a laboratory course. Failure to perform the experiments and hand in reports on time will result in an unsatisfactory grade in the course.

For reasons of safety, lab work may be done only during the assigned laboratory periods, when the instructor is present.

Students must wear eye protection whenever they are in the lab! If you do not have the appropriate eye protection, you may be dismissed from the laboratory section with loss of credit for that exercise.

Do not wear contact lenses in the lab. They can absorb or trap some organic vapors and fumes and could cause eye damage.

BEFORE coming to lab, students are EXPECTED:

- (1) to have read and outlined the experiment
- (2) to have completed the pre-lab exercises
- (3) to understand the day's experiment

Preparation is required for your safety as well as the safety of your fellow students.

Students are required to have the front page of their lab report signed by the instructor BEFORE leaving the lab. This will constitute proof of attendance.

Students are expected to complete the pre-lab questions BEFORE the start of each lab session. The instructor will check for completion of these questions at some point during the lab. Experimental data must be entered during the lab, while post-lab questions can be answered at home.

ATTENDANCE ITSELF IS NOT SUFFICIENT. A PASSING GRADE IN THE COURSE WILL BE CONTINGENT ON SUCCESSFUL COMPLETION OF ALL ASSIGNED EXPERIMENTS.

Testing and Grading:

- **Exams:**

There will be five 2-hour exams (tentative dates given on exam schedule). You may drop the lowest of the five exam scores. The four remaining exam grades cumulatively account for 40% of your final course grade.

A final examination, which contributes an additional 40% to your course grade, will be given at the scheduled time. **The final exam will be comprehensive, meaning it will include material from the ENTIRE length of the course, and ALL textbook chapters covered.**

During exams students may leave the exam hall only after submitting their exam paper. A student who leaves the hall for any reason will not be allowed to come back and finish the exam, or make any changes in his/her answers.

A student who comes to the exam hall after the exam has started will not be allowed to take the exam if at least one student has already left the exam hall prior to the late student's arrival.

A compelling reason and documentation are required for consideration for make-up exams. Consideration for make-up exams will be given only if requested before the date of the exam, or for documented medical reasons.

- **Quizzes:**

In addition to exams, there will be 4 quizzes. The quizzes account for 8% of your final grade.

There are NO MAKE-UP QUIZZES.

- **Laboratory:**

Lab reports are to be turned in one week after each lab, at the very next lab meeting. Late reports will received a partial credit if turned in no later than one additional week past its due date. Lab reports turned in more than 14 days past the lab they correspond to will receive a score of zero.

Your laboratory grade will contribute 12% to your final course grade.

Summary:

Lecture	Exams (100 points each)	400
	Quizzes (20 points each)	80
	Final	400
Laboratory	Lab Reports (10 points each)	120
	Estimated Total Points	1000

Grading Scale:

The final course grade is determined strictly on the basis of the total number of points accumulated. After all accumulated points in the course are totaled (maximum 1000 points), the final grades for the course will be assigned according to the following percentages:

> 85 : A

84 – 70: B

69 – 55: C

54 – 50: D

< 50: F

Students should keep a record of all scores received, and confirm scores with their instructor at the end of the semester. If there is a discrepancy, the scores recorded in the grade book prevail, unless proof of instructor error can be produced.

Important General Rules:

THE COLLEGE ACADEMIC HONESTY POLICY (PLEASE READ YOUR CATALOG) WILL BE ABSOLUTELY UPHELD FULLY IN THE COURSE. NEITHER CHEATING NOR COPYING WILL BE TOLERATED.

To discourage tampering of quiz or exam answers, instructor will photocopy scantrons and will randomly photocopy exams and quizzes. Any quiz or exam returned with a claim of scantron error in which responses have been altered in any way will be considered deliberate cheating, and the exam will receive a grade of zero.

During quizzes or examinations, use of cell phones is not permitted. Sharing of calculators is not permitted.

Cell phones and any noise-emitting devices must be turned off during class.

Suggestion for Success in Chem60:

The assigned readings and practice questions (problems) are designed to cover most of the important concepts presented in this course. It is possible you will need to locate and practice more exercises than are given on the "suggested" list in order to gain acceptable mastery of the material.

PLEASE UNDERSTAND THAT YOU CANNOT LEARN MERELY BY OBSERVING. IF YOU SIMPLY OBSERVE OTHERS SOLVING PROBLEMS, OR PERFORMING LAB EXPERIMENTS, OR ONLY READ THE SOLUTIONS IN THE SOLUTIONS MANUAL, YOU WILL BE SEVERELY HANDICAPPED IN PERFORMING DURING EXAMINATIONS.

Campus Resources:

- Office of Disabled Student Programs and Services (DSP&S). Student Services Building (SSB) 320 | (310) 287-4450.

West Los Angeles College recognizes and welcomes its responsibility to provide an equal educational opportunity to all disabled individuals. The Office of Disabled Students Programs and Services (DSP&S) has been established to provide support services for all verified disabled students pursuing a college education. DSP&S students may qualify for: priority registration, registration assistance, special parking permits, sign language interpreters and assistive technology (WLAC College Catalog).

- Instructional Support (Tutoring) & Learning Skills Center . Heldman Learning Resources Center (HLRC) | (310) 287-4486

Important Dates:

Last day to withdraw without a "W": February 20, 2015

Last day to withdraw with a "W": May 8, 2015

For other important deadlines, please refer to your semester class schedule.

Lecture Schedule (Tentative)

Date	Week #	Lecture Topic	Reading Assignment
Tu 2/10	1	Introductory remarks; Math review (See Appendix) Measurements and calculations	Chapter 1, 2
Th 2/12		Measurements and calculations	Chapter 2
Tu 2/17	2	Matter	Chapter 3, 4
Th 2/19		Matter and energy	Chapter 3,10
Tu 2/24	3	Nomenclature of inorganic compounds	Chapter 5
Th 2/26		Nomenclature of inorganic compounds	Chapter 5
Tu 3/3	4	Chemical reactions	Chapter 6
Th 3/5		Reactions in aqueous solutions	Chapter 7
Tu 3/10	5	Chemical composition	Chapter 8
Th 3/12		Chemical composition	Chapter 8
Tu 3/17	6	Chemical quantities	Chapter 9
Th 3/19		Chemical quantities	Chapter 9
Tu 3/24	7	Modern atomic theory	Chapter 11
Th 3/26		Modern atomic theory	Chapter 11
Tu 3/31	8	<i>Campus Closed</i>	
Th 4/2		Chemical Bonding	Chapter 12
Tu 4/7		<i>Spring Break</i>	
Th 4/9		<i>Spring Break</i>	
Tu 4/14	9	Chemical Bonding	Chapter 11
Th 4/16		Gases	Chapter 13
Tu 4/21	10	Gases	Chapter 13
Th 4/23		Liquids and Solids	Chapter 14
Tu 4/28	11	Liquids and Solids	Chapter 14
Th 4/30		Solutions	Chapter 15
Tu 5/5	12	Solutions	Chapter 15
Th 5/7		Acids and bases	Chapter 16
Tu 5/12	13	Acids and bases	Chapter 16
Th 5/14		Equilibrium	Chapter 17
Tu 5/19	14	Equilibrium	Chapter 17
Th 5/21		Organic chemistry	Chapter 20
Tu 5/26	15	Organic chemistry	Chapter 20
Th 5/28		Organic chemistry	Chapter 20
Tu 6/2	16	<i>Final Week</i>	
Th 6/4		Final Exam: 1:45pm – 3:45pm	

Note: This schedule is subject to change at the discretion of the instructor.

Laboratory Schedule (Tentative)

Week	Date	Experiment	Laboratory Equipment
1	Th 2/12		Check in, Laboratory safety
2	Th 2/19	Exp 1 and 2	Mass determinations and Use of volumetric glassware
3	Th 2/26	Exp 5	Density determinations for: Solids, liquids, solutions
4	Th 3/5	Exp 9	Calorimetry
5	Th 3/12	Handout	Nomenclature of inorganic compounds
6	Th 3/19	Exp 7	Properties of some representative elements
7	Th 3/26	Exp 19	Preparation and properties of oxygen
8	Th 4/2	Exp 11	Acid-Base reactions
	Th 4/9		<i>Spring Break</i>
9	Th 4/16	Exp 10	Precipitation reactions
10	Th 4/23	Exp 16	Stoichiometry of magnesium oxide
11	Th 4/30	Exp 18	Lewis structures and molecular shapes
12	Th 5/7	Video	Boyle's and Charles's laws
13	Th 5/14	Exp 21	Ideal gas law
14	Th 5/21	Exp 26	Acid-base titration
15	Th 5/28		Check out

Note: This schedule is subject to change at the discretion of the instructor.

Exam Schedule (Tentative)

	Date	Chapters
Exam I	Tu 2/24	1, 2, 3, 4, 10
Exam II	Tu 3/17	5, 6, 7, 8
Exam III	Tu 4/21	9, 11, 12
Exam IV	Tu 5/12	13, 14, 15
Exam V	Tu 5/26	16, 17, 20
Final	Th 6/4	All chapters

Note: This schedule is subject to change at the discretion of the instructor.

Quiz Schedule (Tentative)

	Date	Chapters
Quiz I	Tu 2/17	1, 2
Quiz II	Tu 3/10	5, 6, 7
Quiz III	Tu 4/14	9, 11
Quiz IV	Tu 5/5	13, 14, 15

Note: This schedule is subject to change at the discretion of the instructor.