

**Los Angeles Mission College Chemistry 65 Syllabus
Spring Semester 2012**

Lecture Instructor: Dr. R. W. Gellert
Section: #3155

Tel: (818) 364-7600 x4238 (Use email!)
Office Hours: MW 8:25-9:00 PM
INST 2003
e-mail: gellerr@lamission.edu
alternate: rgellert@glendale.edu

Lec. MW 7:00-8:25 INST 2003
Lab. MW 5:25-6:50 INST 2012

Chemistry 65 is an introductory Chemistry Course. Pre-Requisites: Math 125 with a "C" or better, or appropriate math placement results.

Required - Textbook(s):

Introductory Chemistry, 6th Ed., by Steven S. Zumdahl, Houghton Mifflin, 1999 (Available in LAMC Bookstore).

Laboratory Manual: "Everyday Chemistry", Fenyves, Maria. (Available in LAMC Bookstore).

Laboratory Notebook: Bound Laboratory Notebook (National #53-110 quadruled paper, *hard cover Composition Book*) This is available in the LAMC Bookstore. You must have the Laboratory Notebook by the second class meeting. You are required to record all laboratory work in your Lab Notebook. (See Laboratory Manual Appendix II.)

Optional Textbook:

Study Guide for Zumdahl, 5th Ed., Houghton Mifflin, 1999

Other Supplies:

Safety Goggles: Case-hardened safety glasses or goggles (MUST BE WORN AT ALL TIMES IN LABORATORY WHEN EXPERIMENTAL WORK IS IN PROGRESS; your instructor will give details on this).

Scientific Calculator: Equipped with scientific notation and logarithm functions. You should have your calculator with you for all class sessions.

Optional Supplies: (1) **Lab Coat** –protective clothing. (2) **Periodic Table of the Elements:** This is available at LAMC Bookstore. However, a basic Periodic Table will be provided by the Instructor.

Attendance: 100% attendance is essential. CHEMISTRY IS A DEMANDING SUBJECT! YOU CANNOT AFFORD TO BE ABSENT IF YOU WISH TO DO WELL IN THIS COURSE.

Homework(end-of-Chapter Problems):

Homework (end-of-chapter problems) need not be turned in. However, the working of these exercises is an essential part of the learning process in a course of this sort and its importance cannot be over emphasized. It is suggested that you work on chemistry EVERY DAY! Do just 2 or 3 problems or read a few sections of the current chapter. You will often need to work problems of the same type several times before you fully understand it. Carefully read the examples and solved problems in the text. Attempt to solve the problem yourself after reading the text by covering up the authors' solution. Do as many end-of-chapter problems as you can or your time permits. Most of these problems are based on the chemical principles you have covered in the chapter or previous chapters. LEARN and understand

these PRINCIPLES! Remember you cannot solve test problems quickly and efficiently without LOTS OF PRACTICE. If you have difficulty with any of the end of chapter problems you can turn in the work you have done on the problem and your instructor will direct you toward the solution so you may solve the problem yourself.

At the end of the semester students will be able to,

1. Conceptualize, model and explain chemical processes qualitatively at the molecular level.
2. Apply mathematics to solve quantitative chemical problems.
3. Extract appropriate information, analyze and synthesize experimental results to reach correct conclusions.
4. Perform laboratory techniques safely and accurately and maintain a laboratory notebook according to standard scientific guidelines.

Course Grade

Your grade in Chemistry 65 will be based on the following:

MIDTERM EXAMS- three	40 %
(Exams will be announced in advance, No make-up exams given!)	
Weekly quizzes (9-12, 15 pts, drop 2-5 lowest)	10 %
LABORATORY WORK.....	30 %
Your laboratory work includes <u>Three laboratory open notebook exams,</u> <u>experimental reports,</u> and <u>unknowns.</u>	
There will be <u>No make-up</u> laboratory work.	
FINAL EXAM	20 %
TOTAL	100 %
Grading Scale: A: ~86-100 %, B: 75-85%, C: 65-75%, D: 55-64%	

WELCOME TO THE COURSE. LET US WORK TOGETHER TOWARD
AN ENJOYABLE AND SUCCESSFUL LEARNING EXPERIENCE.
I HOPE IT WILL BE WORTH THE EFFORT AND THAT
THE KNOWLEDGE ACQUIRED WILL ENRICH YOUR LIVES.

TENTATIVE LECTURE SCHEDULE

Week	Date	Chapter	Lecture Topic	Quizzes
1	M, Feb 6	1, 2	Introduction, Scientific Method, Scientific Notation, Units,	
	W, Feb 8	2	Measurements; SI Units, Errors in Measurements; Significant Figures	Q1
2	M, Feb 13	2	Problem Solving and Dimensional Analysis, Temp.	
	W, Feb 15	3	Matter: Physical and Chemical Changes/ Properties	Q2
3	M, Feb 20	3	Cont.	
	W, Feb 22	4	Calculations, Elements, Atoms, and Ions	Q3
4	M, Feb 27	4, 5	Atomic Structure, Ionic Compounds	
	W, Feb 29	----	Exam 1 (Chapters 1–4, part 5)	
5	M, Mar 5	5,11	Nomenclature, Modern Atomic Theory	
	W, Mar 7	11	Electronic Structure of the Atom	Q4
6	M, Mar 12	6	Chemical Reactions: Evidence, Equations	
	W, Mar 14	7	Reactions in Aqueous solutions	Q5
7	M, Mar 19	7	Reactions in Aqueous solutions cont'd	
	W, Mar 21	8	Mole Concept and Chemical Composition	Q6
8	M, Mar 26	8,9	E. F. Mole- Mole, Mass-Mass Calc.,	
	W, Mar 28	---	Exam 2 (Part 5, 11, 6-8, part 9)	
***	April 2 ---	April 8	Spring Break (College closed)	*****
9	M, April 9	9	Limiting Reactant, %Yield	
	W, April 11	9,10	Thermochemistry	Q7
10	M, April 16	10, 12	Chemical Bonding	
	W, April 18	12	Molecular Structure	Q8
11	M, April 23	13	The Gaseous State	
	W, April 25	13	Partial Pressures, Kinetic Molecular Theory	Q9
12	M, April 30	12, 13	Gas Stoichiometry, Liquids and Solids	
	W, May 2	----	Test 3 (part 5, 9, 10, 12, 13 (TBD)	
13	M, May 7	14	Liquid and Solids cont'd	
	W, May 9	14	Solids cont'd	Q10
14	M, May 14	15	Solution Composition	
	W, May 16	15	Stoichiometry of Solution Reactions	Q11
15	M, May 21	16	Acids and Bases	
	W, May 23	16	Review	Q12
16	M, May 28 -	June 4	*** Finals Week *** Final Exam 6/4/12 8-10pm	

**Los Angeles Mission College Chemistry 65 Syllabus
Spring Semester 2012**

LABORATORY WORK

During the laboratory two students will share the contents of the same laboratory locker. Both students are jointly responsible for the contents of their shared locker. The majority (not all) of the experiments is performed in pairs.

However, for every experiment, **each student**;

- 1. Will take active part in the work,**
- 2. Report his/her data individually,**
- 3. Do his/her own calculations,**
- 4. Turn in an individual lab report for grading purposes, and**
- 5. Will be assigned an individual grade for every activity.**

Laboratory Reports are due no later than **one week** from the date experiment have been performed (this is to allow working students to meet the deadline). There is no penalty for turning in the laboratory report early ☺.

Late laboratory reports are graded with a penalty of **10%** per week.

Once the instructor has returned the graded lab reports to the class, lab reports for that particular experiment are no longer accepted for grading.

In order to work efficiently and meet the required deadline for turning in the lab reports, **you must come** to the laboratory well prepared.

This means:

- 1. Read carefully (several times, if needed) the Experiment you will perform (both Principles and Procedure) prior to coming to the lab.**
- 2. Think about what you will be doing and plan ahead.**
- 3. Prepare your Laboratory Notebook in advance (Purpose of the Experiment and the appropriate Data Tables may be prepared in your Laboratory Notebook in advance).
After the third laboratory session, you may not work in the laboratory if you do not have a Laboratory Notebook!
Please see pages 3 & 4 of this outline about proper usage of your Laboratory Notebook.**
- 4. The laboratory portion of the course makes up 30% of your grade:
A) Laboratory Reports and Unknowns: 15%
B) Laboratory Exams: 15% (open lab notebook)
There will be three Laboratory exams scheduled.
All exams will be of equal weight.**
- 5. THERE IS NO MAKE-UP LABORATORY WORK!**

Laboratory Experiments From

(Text: "EVERYDAY CHEMISTRY" by Maria Fenyes, Los Angeles Mission College, and Moodle Website, Dr. Gellert)

TENTATIVE LABORATORY SCHEDULE

Week	Date -MW	Exp. /Exc.	Activity
1	Feb. 6	---	Introduction to Lab- No activities
	Feb. 8	---	Check-in; Safety Video
2	Feb. 13	3	The Density of Common Metals and Alloys, Part I
	Feb. 15	3	The Density of Common Metals and Alloys, Part II
3	Feb. 20	HOLIDAY	President's Day (College Closed)
	Feb. 22	1	What Chemists Do; Identification & Analysis; Exercise A: Math Drill
4	Feb. 27	Exercise B	Names and Formulas (DL:Download from Moodle!)
	Feb. 29	2	Colorful Chemistry with Food Dyes; Chromatography (LE1)
5	March 5	DL	The Bunsen Burner (DL:Download from Moodle!)
	March 7	4	Quantitative Separation of a Mixture of Sand & Salt
6	March 12	15	Identification of Metal Ions (Flame Test): Fingerprints of Metals; Periodic Table Video (Lecture)
	March 14	-----	Lab Exam I (Exp. 1, 2, 3, Burner, 4, PT Video)
7	March 19	5	Physical Properties of Household Liquids (Part I) Graphing Data (Using Excel)
	March 21	5	Physical Properties of Household Liquids (Part II)
8	March 26	DL	Empirical Formula of MgO
	March 28	Exercise C	Balancing Chemical Reactions
---	April 2 ---	--- April 8	Spring Break (College Closed)
9	April 9	10	Combination Reactions
	April 11	10	Decomposition Reactions
10	April 16	12 & DL	Double Replacement Rxns – DL Writing Net Ionic Eqns.
	April 18	11	Single-Replacement Reactions
11	April 23	7	Specific Heat of a Liquid (Part II ONLY)
	April 25	9	Percentage of Copper in Malachite
12	April 30	Exercise D	Molecular Geometry: VSEPR and Lewis Structure
	May 2	20	Density of CO ₂
13	May 7	----	Lab Exam 2 (Exp. 5, 7, 10, 11, 12, EF MgO)
	May 9	DL	Standardization of NaOH/ Acid- Base Titration
14	May 14	DL	Unkown Acid Titration
	May 16		Titration cont.
15	May 21		Check - out
	May 23		Lab Exam 3 - (Exp. 9, Exc D, 20, Acid/Base Titr.)