

Chemistry 51 – FUNDAMENTALS OF CHEMISTRY

<u>Day/Time</u>: TTh 4:35-6:40 pm <u>Section</u>: 3057 & 3058 Room: CMS 028

I'm Professor Said Pazirandeh Welcome to my class!



Office Location:

Center for Math and
Science, room #242

<u>Drop in Times:</u>
TuW 3:30-4:30,
or another more
convenient time for both
of us.
Drop by for help

You can always email profpaz@earthlink.net paziras@lamission.edu

or just to say hi!

Office Phone/Voicemail (818) 364-7705

Highly Recommended:

- Attend every class
- Bring lecture notes
- Annotate notes
- Participate in discussions
- Put deadlines in your calendar
- Plan ahead
- Complete all assignments

SUCCESSFUL STUDENTS ARE PREPARED, ON TIME, FOCUSED, AND RESPECTFUL

WEBSITE FOR SUCCESS

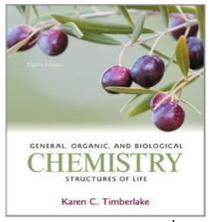


WWW.PROFPAZ.COM

This site has digital resources:
- class syllabus – practice problems email- class assignments
- practice exams
-study guides – lab videos

HANDOUTS on class website for LECTURE OUTLINE.
PRINT- bring to every class!

Required Text:



Or LAMC custom version, 2nd edition.

LOS ANGELES MISSION COLLEGE-FALL 2013

CHEMISTRY 51-SECTIONS 3057 & 3058

Lecture: TTh 4:35-6:40; Room: CMS-028 Lab (3057): TTh 6:50-8:15; Room: CMS-203 Lab (3058): TTh 6:50-8:15; Room: CMS-201

INSTRUCTOR (Lecture): Said Pazirandeh **OFFICE PHONE: (818)364-7705**

E-MAIL: profpaz@earthlink.net **OFFICE: CMS-242**

WEBSITE: www.profpaz.com OFFICE HOURS: TuW 3:30-4:30

INSTRUCTOR (Lab): Jeanne Cassara OFFICE PHONE: (818)364-4237

E-MAIL: cassarjl@lamission.edu **OFFICE HOURS: TBA**

INSTRUCTOR (Lab): Charles Mallory **OFFICE PHONE:** (818)364-4223

E-MAIL: mallorcp@lamission.edu **OFFICE HOURS: TBA**

WEBSITE: http://www.themallorvfamily.net/

DESCRIPTION:

CLASS Chem 51 is an introductory class in general chemistry and is designed for students in the following majors: Nursing, Allied Health Sciences; Dietetics, Physical Therapy, Food Science & Environmental & Occupational Health. This course may also be taken to satisfy the Physical Science requirement for General Education. Chemistry 51 at LA Mission College is equivalent to Chemistry 103 or Chemistry 105 at CSUN.

PREREQUISITE: Mathematics 115 (Elementary Algebra) or 123B (Elementary and Intermediate Algebra II) with a grade of "C" or better, or appropriate Math placement results.

MATERIALS:

REQUIRED 1. **Textbook**: "General, Organic, and Biological Chemistry", by Timberlake, 1st Edition, Custom Published for LA Mission College.

In this course you will be using **MasteringChemistry**[®], an online tutorial and homework program that accompanies your textbook. To access the online system, you will need an access code that can be obtained in one of the following ways: Student Access Code that has been packaged with your new textbook, or you can purchase access online at www.masteringchemistry.com.)

- A copy of the textbook is available on Reserve in the Library.
- 2. Lab Manual: "LABORATORY CHEMISTRY FOR THE HEALTH SCIENCES", 2nd Edition (1999) by Maria Fenyes. Available in the LA Mission College Bookstore.
- 3. Lab Notebook: This is a quadrille paper, hard cover "Comp Book", available in the L.A.Mission College Bookstore and in the C.S.U.N. Bookstore.
 - You must have the Laboratory Notebook by the second class meeting. You are required to report all laboratory work in your Laboratory Notebook (See Appendix II for the proper use of the Laboratory Notebook) During the Laboratory Activities you are not permitted to take notes on any kind of loose paper or any notebook, other than the Laboratory Notebook. You may not perform an experiment if you do not have your Laboratory Notebook with you.
- 4. **Periodic Table of Elements:** This is available in the LAMC bookstore and on my website. You must have one Periodic Table with you during all class sessions.
- 5. **Scientific Calculator:** Need not to be an expensive type, but it must perform the following operations: Multiplication, Division, Addition, Subtraction, square root, 1/x, and log. You are required to have your calculator with you during all class sessions (both lectures and labs).
- 6. Safety Goggles: Unless specifically instructed otherwise by your instructor, you must wear safety goggles during laboratory work. Safety goggles are available for purchase in the LAMC Bookstore. You are required to have your safety goggles by the second class session. You may keep your goggles locked in your laboratory locker.
 - Failure to wear goggles when directed by the instructor is grounds for dismissal from the laboratory.
- 7. **Notebook:** A 3-ring binder is recommended for keeping class notes organized.

RESOURCES: There are several resources available for your use during this course. Proper and timely utilization of these resources are very important in your success in the course. These resources include:

- Profpaz website
- Tutoring throught the Science Success Center (SSC)
- Mentoring and networking through the STEM Center

LEARNING **OUTCOMES:**

- 1. Conceptualize, model and explain chemical processes qualitatively at the molecular level.
- 2. Extract appropriate information, analyze and synthesize experimental results to reach correct conclusions.
- 3. Perform laboratory techniques safely and accurately and maintain a laboratory notebook according to standard scientific guidelines.
- 4. Describe and explain the properties and behavior of solids, liquids, gases and mixtures

ATTENDANCE:

- CHEMISTRY IS A DEMANDING SUBJECT!
- YOU CANNOT AFFORD TO BE ABSENT IF YOU WISH TO DO WELL IN THIS COURSE.
- THERE IS NO MAKE-UP FOR MISSED LABORATORY WORK.
- College regulations state that a student may be excluded from a course following accumulation absences equal to a week of course work.

COURSE

Your final grade in class is composed of the following:

EVALUTATION:

Quizzes	100 pts
Exams (3)	300 pts
Final Exam	150 pts
1 st Lab Exam	50 pts
2 nd Lab Exam	50 pts
Final Lab Exam	100 pts
Lab Reports	200 pts
Lab Notebook	20 pts
Online Homework .	30 pts .
Total	1000 points

GRADING The final grades cutoffs are as follows:

SCALE:

A	90% - 100%
В	80% - 90%
C	65% - 80%
D	55% - 65%
F	Below 55%

NOTES:

- No make up exams are given for students being absent on the day of the exam.
- If serious and compelling reasons prevent the student from being present on the day of one of the exam, the instructor should be informed **IN ADVANCE** for possible arrangements.
- Maximum of one make-up exam and one make-up quiz per semester is allowed.

LABORATORY WORK

- During laboratory work 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 are performed in pairs.
- 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 one week after the class period in which the experiments have been performed (this is to allow working students to meet the deadline).
- Late reports are subject to 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 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).

THERE IS NO MAKE-UP LABORATORY WORK

INSTRUCTIONS FOR LABORATORY NOTEBOOK

- Each student must have a **<u>quadrille ruled, sewn</u>** Laboratory Notebook in which to record data and observations, do calculations, and analyze results of the lab work.
- The Lab Notebook must be brought with you to every lab session and all data and observations must be recorded <u>directly into the Notebook</u> (nowhere else) <u>and in ink</u> (no pencil). Laboratory records are legal documents in industry and research. They are required to support patent applications or to resolve disputes or originality of research.
- You will write only on the <u>right hand pages</u>. The left-hand pages are reserved for calculations and notes that do not belong on the right hand page.
- Begin with a <u>TITLE PAGE</u> State the course, section number, semester, the instructor's name, your name and your locker number.
- The second page is an <u>INDEX</u>. As you do each experiment, list it by title and enter the numbers of the pages containing text for it. Leave a second page for continuation of the Index. At the bottom of the second index page, give the <u>complete bibliographic information</u> for the laboratory text used. (Title, author, publisher, date.) When you do this you can cite a reference simply by "Text"; otherwise you must cite the complete reference each time.
- The remainder of the <u>right-hand pages</u> in the Notebook should be <u>numbered sequentially in</u> <u>the upper right corner of the page</u>.

The **FORMAT** of the pages for each lab experiment is as follows:

TITLE: Here you enter the title of experiment. Page Number

PURPOSE: Write a short statement (one or two sentences, in your own words) of

the purpose or the goal of the experiment.

PROCEDURE: Cite a reference to the appropriate text(s). Any changes made by the

instructor may be noted on the left-hand side of the page.

DATA/OBSERVATIONS: Prepare a data table in which you will record the measurements you

make in the lab. The lab Report Form often will provide a good format, but it is wise to check with the instructor about the amount of space to be

allowed when observations, rather than measurements, are to be

recorded.

Be careful to indicate units wherever appropriate.

RESULTS: This presents, in table form, the final answers to any required

calculations. All work (i.e., set-ups for all **calculations**) must be shown

on the **left-hand page**.

CONCLUSIONS: Write a few words of conclusion, indicating any experimental errors and

their effects on your results. Also state whether or not you achieved the purpose of the experiment, or how the experiment supported the concepts

you learned in the lecture.

As you work, enter your Data/Observations in ink. If you make an error or repeat an exercise, <u>DO NOT ERASE ANYTHING</u>. You may draw a line through the offending information and then enter the new value (It may be necessary to do this on the left-hand page, if there is no room on the right-hand page.)

- If the entire page is in error, simply draw a diagonal line through the page and fold the page in half vertically.
- **NEVER, NEVER, TEAR OUT A PAGE** (other pages will fall out as well).
- BE PREPARED TO SHOW YOUR NOTEBOOK TO YOUR INSTRUCTOR AT ANY TIME!
- Additional Information about the proper usage of the Laboratory Notebook is found in Appendix II
 of the Laboratory Manual used for this course ("Everyday Chemistry" by Maria Fenyes, Los
 Angeles Mission College, Fall 96)

TENTATIVE LECTURE SCHEDULE

Week	Date	Chapter	Lecture Topic	Text Reference
1	Aug 27	1	Introduction to class; Scientific Method	P.1-P.2
	Aug 29	1	Measurments; SI Units	1.1-1.2
Sep 3 Sep 5 Sep 8	Sep 3	1	Errors in Measurements; Significant Figures	1.3-1.5
		1	Unit Conversions; Density Last day to drop without a "W"	1.6-1.8
3	Sep 10	2	Energy & Heat	2.1-2.4
	Sep 12	2	Classification & Properties of Matter	2.5-2.7
4	Sep 17		Review for Test 1	
4	Sep 19		Test 1 (Chapters 1 & 2)	
5	Sep 24	3	Periodic Table; Atomic Theory	3.1-3.3
5	Sep 26	3	Atomic Structure	3.4-3.6
6	Oct 1	3	Electron Configuration; Periodic Trends	3.7-3.9
6	Oc 3	5	Ionic Compounds – Naming and Writing Formulas	5.1-5.4
7	Oct 8	5	Covalent Compounds – Naming and Writing Formulas	5.6
7	Oc 10	5	Bond Polarity/Lewis Structures	5.5 & 5.7
8	Oct 15	5	Molecular Shapes & Polarity Attractive Forces in Compounds	5.8-5.9
	Oct 17		Review for Test 2	
9	Oct 22		Test 2 (Chapters 3 & 5)	
	Oct 24	6	Types of Chemical Reactions Activity Series	6.1-6.3 Notes
10	Oct 29	6	Mole Calculations	6.4-6.5
10	Oct 31	6	Stoichiometry	6.6-6.7
11	Nov 5	6	Llimiting Reactant/Percent Yield	6.8-6.9
11	Nov 7		Review for Test 3	
12	Nov 12		Test 3 (Chapter 6)	
	Nov 14 Nov 17	8	Solutions & Solubility/Aqueous Reactions Last Day to Drop with a "W"	8.1-8.3
13	Nov 19	8	Solution Concentration & Properties	8.4-8.6
	Nov 21	10	Acids & Bases	10.1-10.2
14	Nov 26	10	Ionization of Water & pH Scale	10.3-10.4
14	Nov 28		Thanksgiving Holiday (College closed)	
15	Dec 3	7	Gases & Their Properites	7.1-7.4
	Dec 5	7	Gas Laws	7.5-7.9
16	Dec. 10 (5:30-7:30)		Final Exam (Chapters 7,8 & 10)	

LABORATORY SCHEDULE

Week	Date	Exp. #	Activity	Points
1	Aug 27		Introduction to Lab; Safety Video	
	Aug 29		Check-in	
2	Sep 3	1	What Chemists Do; Identification & Analysis	10
	Sep 5	2	Colorful Chemistry with Food Dyes	10
3	Sep 10	4	Separation of a Mixture of Sand & Salt	20
	Sep 12	4	Complete Exp. 4	
4	Sep 17	5	Physical Properties of Household Liquids (Part I)	15
4	Sep 19		Physical Properties of Household Liquids (Part II)	
E	Sep 24	7	Specific Heat of a Liquid (Parts I)	15
5	Sep 26		Specific Heat of a Liquid (Parts II)	
6	Oct 1		Lab Exam I (Exp 1-4) (You may use your lab notebook)	
	Oc 3	15	Identification of Metal Ions	10
7	Oct 8	17	Molecular Shape & Polarity	15
,	Oc 10	17	Complete Exp 17	
0	Oct 15	10	Combination Reactions	25
8	Oct 17	10	Decomposition Reactions	
9	Oct 22	11	Single Replacement Reactions	15
9	Oct 24		Complete Exp 11	
10	Oct 29		Lab Exam II (Exp 5, 7, 15, 17) (You may use your lab notebook)	
	Oct 31	9	Percentage of Copper in Malachite	10
11	Nov 5		Complete Exp 9	
11	Nov 7	14	Table Salt from Soda Ash	10
12	Nov 12	3	Electrolytes & Non-electrolytes	20
	Nov 14		Complete Exp 3	
13	Nov 19		Net Ionic Equation Worksheet	
	Nov 21	12	Double Replacement Reactions	15
14	Nov 26	Handout	Properties of Acids & Bases	10
	Nov 28		Thanksgiving Holiday (College closed)	
15	Dec 3		Check-out	
	Dec 5		Lab Final Exam (Exp 3, 9-13) (You may use your lab notebook)	