

## <u>Chemistry 102 – GENERAL CHEMISTRY II</u>

<u>Day/Time</u>: MW 5:15-6:40 pm <u>Section</u>: 0150 & 0151 Room: CMS 236

I'm Professor Said Pazirandeh Welcome to my class!



## Office Location: Center for Math and

Science, room #242

<u>Drop in Times:</u>
TW 3:30-4:30,
or another more
convenient time for both
of us.
Drop by for help
or just to say hi!

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

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

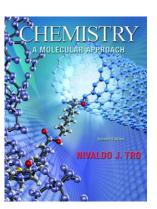


#### WWW.PROFPAZ.COM

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:**



#### LOS ANGELES MISSION COLLEGE-FALL 2013 CHEMISTRY 102-SECTIONS 0150 & 0151

<u>Lecture: MW 5:15-6:40 ; Room: CMS-236</u> <u>Lab (0150): MW 6:50-10:00 ; Room: CMS-206</u> <u>Lab (0151): MW 6:50-10:00 ; Room: CMS-210</u>

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

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

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

INSTRUCTOR (Lab): Maria Fenyes OFFICE PHONE: (818) 364-7600 X 4336

E-MAIL: mariafenyes@earthlink.net OFFICE: CMS 210

**OFFICE HOURS:** MW 10:00 – 10:35 PM

INSTRUCTOR (Lab): Gayane Godjoian OFFICE PHONE: (818) 833-3382

E-MAIL: godjoig@lamission.edu OFFICE: CMS 244

OFFICE HOURS: T 10:00 AM-1:30 PM

TH 10:00 AM-12:00 PM

#### 1. **PREREQUISITES**:

➤ Chemistry 101 with a grade of C or better.

#### 2. RECOMMENDED:

> Completion of Math 260 (Precalculus) or a higher level Math class with a grade of "C" or better

#### 3. **TEXTBOOK**:

- Required: "Chemistry: A Molecular Approach", Nivaldo Tro (2<sup>nd</sup> Edition; ISBN 978-0-321-61578-5)
- Copy of the Textbook will be available on Reserve in the Library.

#### 4. **LABORATORY NOTEBOOK:**

- Required: This is a **quadrille paper**, hard cover "Comp Book", available in the LAMC Bookstore and in general office supply stores. You are required to have your laboratory notebook by the 2<sup>nd</sup> class meeting.
- You are required to report all laboratory work in your Laboratory Notebook (See Page 5 f this outline for the proper use of the Laboratory Notebook).

#### 5. SCIENTIFIC CALCULATOR

- Need not to be an expensive type, but it must perform the following operations: Addition, Subtraction, Multiplication, Division, Square Root, 1/x, and Logarithms.
- > You are required to have your calculator with you for all class sessions (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.
- While in the laboratory, students must wear safety goggles at all times, unless otherwise directed by the instructor. Failure to wear goggles unless directed by the instructor is grounds for dismissal from the lab.

#### 7. PERIODIC TABLE OF THE ELEMENTS

- You are required to have your own Periodic Table of the Elements with you, for all class sessions.
- > The particular type of Periodic Table used for this course is available online at my website.

# CHEMISTRY 102 is a demanding course! IF YOU WISH TO DO WELL IN THIS CLASS, YOU CANNOT AFFORD TO BE ABSENT!

## **STUDENT LEARNING OUTCOMES**

- 1. Describe, explain and model chemical and physical processes qualitatively at the molecular level in order to explain macroscopic properties.
- 2. Solve quantitative chemistry problems through integration of multiple ideas and demonstrate reasoning clearly and completely.
- 3. Analyze results of laboratory experiments, evaluate sources of error and prepare clear and organized laboratory reports.
- 4. Perform laboratory techniques safely and accurately and maintain a laboratory notebook according to standard scientific guidelines.
- 5. Design, construct and interpret graphs accurately.

#### **GRADING SCALE**

- You will be assigned a unique student code and password and can check your grade online. More detailed information will be given by the instructor after the 2<sup>nd</sup> week of class.
- Your grade in the class is composed of the following components:

ASSIGNMENT	POINTS	% OF TOTAL
• QUIZZES (10 x 15 points each)	150	15
• TESTS (3 x 100 points each)	300	30
• FINAL EXAM	150	15
• LABORATORY REPORTS	100	10
• LABORATORY UNKNOWNS	100	10
• LABORATORY EXAMS		20
First Lab Exam	50	
Second Lab Exam	150	
TOTAL	1000	100

• The grading scale in the class is as follows:

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

## TENTATIVE LECTURE SCHEDULE

Week	Date	Text Reference	Topic
1	Aug 26	13.1-13.2	Introduction to class – Rates of Reactions
	Aug 28	13.3-13.4	Rate Laws
	Sep 2		Labor Day (College closed)
2	Sep 4	13.5	Temperature & Rate
	Sep 8		Last day to drop without a "W"
3	Sep 9	13.6-13.7	Reaction Mechanisms & Catalysis
3	Sep 11	14.1-14.5	Chemical Equilibrium & Equilibrium Constant
4	Sep 16	14.6-14.8	Calculations with Equilibrium Constant
4	Sep 18	14.9	Let Chaterlier's Principle/Review for Test 1
5	Sep 23		Test 1 (Chapters 13–14)
3	Sep 25	15.1-15.4	Introduction to Acids & Bases
6	Sep 30	15.5-15.6	Calculating pH of Strong Acids
6	Oct 2	15.6-15.7	Weak Acid & Base Equilibria
7	Oct 7	15.9-15.11	Acid Strength & Molecular Structure
7	Oct 9	15.8	Acid-Base Properties of Salts
0	Oct 14		Test 2 (Chapters 15)
8	Oct 16	16.1-16.3	Buffers/Common-Ion Effect
9	Oct 21	16.4	Acid-Base Titrations
9	Oct 23	16.5	Solubility Equilibria
10	Oct 28	16.8	Complex-Ion Equilibria
10	Oct 30	16.6-16.7	Selective Precipitation/Qualitative Analysis
11	Nov 4		Review for Test 3
11	Nov 6		Test 3 (Chapters 16)
	Nov 11		Veteran's Day (College closed)
12	Nov 13	17.1-17.4	Laws of Thermodynamics
	Nov 17		Last day to drop with a "W"
13	Nov 18	17.5-17.8	Gibbs Free Energy & Spontaneity
13	Nov 20	17.9	Free Energy & Equilibrium
1.4	Nov 25	18.2	Balancing Redox Equations
14	Nov 27	18.3-18.4	Voltaic Cells & Cell Notations/Std Cell Potentials
15	Dec 2	18.5	Cell Potentials, Free Energy and Equilibrium
	Dec 4	18.6	Cell Potential and Concentration
16	Dec 11 (5:30-7:30)		FINAL EXAM (Chapters 17, 18)

#### LABORATORY WORK

In all laboratory work each student will be assigned a locker, and responsible for its contents. The majority of the experiments are performed individually, however, a few are performed in pairs. For these experiments, each student:

- 1. Must 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 on Mondays following the week during which the experiments have been performed (this is to allow working students to meet the deadline).
- Assessing Late Penalty for lab reports is up to the instructor's discretion, and could equal to 10% of lab report grade for each day late.
- After 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).
- 4. After the first laboratory session, you may not work in the laboratory if you do not have a Laboratory Notebook. Please see page 5 of this outline about proper usage of your Laboratory Notebook.
- 5. 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> (no where 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</u> <u>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</u> in the upper <u>right corner of the page</u>. The <u>FORMAT</u> of the pages for each lab experiment is as follows:

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

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: Essentially, your conclusions should answer the Purpose or the Goal of

the Experiment.

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.

As you work, enter your Data/Observations <u>in ink.</u> 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!

## TENTATIVE LABORATORY SCHEDULE

Week	Date	Exp. #	Activity	Notes
1	Aug 26		Laboratory Procedures; Safety Discussion; Check-in	
	Aug 28	1	The Iodine "Clock" Reaction (Part I)	A
2	Sep 2		Labor Day (College closed)	
	Sep 4	1	The Iodine "Clock" Reaction, (Part II)	A
3	Sep 9	1	The Iodine "Clock" Reaction (Calculations)	A
	Sep 11	2	The Hydrolysis of t-Butyl Chloride	A
	Sep 16	2	The Hydrolysis of t-Butyl Chloride(Calculations)	A
4	Sep 18		First Lab Exam	
	Sep 18		(You may consult your Laboratory Notebook)	
5	Sep 23	5	Stresses on Equilibrium	A
	Sep 25	5	Stresses on Equilibrium	A
6	Sep 30	4	The Equilibrium Game	A
U	Oct 2	3	The Equilibrium Constant	A
7	Oct 7	3	The Equilibrium Constant (Calculations)	A
/	Oct 9	6	Acid & Base Strength	В
8	Oct 14	7	pH	В
8	Oct 16	8	pH of Various Solutions (Part I)	A
9	Oct 21	9	pH of Various Solutions (Part II)	C
9	Oct 23	9	Buffers	A
10	Oct 28	9	Buffers (Calculations)	A
10	Oct 30	10	pH Titration	C
11	Nov 4	10	pH Titration (Calculations)	C
11	Nov 6	11	Standardization of NaOH	D
	Nov 11		Veteran's Day (College closed)	
12	Nov 13	9	pH of Various Solutions (Part II)	C
	Nov 17			
13	Nov 18	13	A Solubility Product Constant	A
15	Nov 20	14	Qualitative Analysis	C
14	Nov 25	14	Qualitative Analysis	С
	Nov 27	14	Qualitative Analysis	С
	Dec 2		Check Out	
15	Dec 4		Second Lab Exam	
	Dec 4		(You may consult your Laboratory Notebook)	

#### **Notes:**

- A. Students works with a laboratory partner
- B. Student works with a laboratory partner
  An unknown will be assigned. Student performs unknown analysis individually
- C. Student works individually Unknown(s) will be assigned
- D. Student works individually No unknown(s) will be assigned