LOS ANGELES MISSION COLLEGE-SPRING 2013
CHEMISTRY 65 – SECS. 3153 AND 3154
Lecture: M,W 4:45 -6:10 ; Room: CMS –028
Laboratory: M,W 6:20-9:30; Room CMS–203

INSTRUCTOR (CMS 28): **Dr. Mike Fenton**
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OFFICE & PHONE: **CMS 243 & EXT. 7888**
OFFICE HOURS: **M 10:30 – 1:30 PM**
W 10:30 – 1:00 PM

INSTRUCTOR (CMS 203): **Dr. R. W. Gellert**
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OFFICE & PHONE: **PHYSICAL SCIENCE OFFICES**
OFFICE HOURS: **M, W (CMS206) 9:30– 10:00 pm**

CLASS DESCRIPTION: Chem 65 is an introductory course for science majors who have not taken any previous chemistry or who need a refresher course. It is designed to prepare students who wish to continue to general Chemistry 101. This course may also be taken to satisfy the Physical Science requirement for General Education. Chemistry 65 at LA Mission College is equivalent to Chemistry 100 and Chemistry 100L at CSUN.

PREREQUISITE: Mathematics 125 or 123C (Intermediate Algebra) with a grade of "C" or better.

REQUIRED MATERIALS

1. **Textbook**: "Introductory Chemistry", by Nivaldo J. Tro, 4th Edition,
   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 online at profpaz.com. 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:** Case-Hardened safety glasses or goggles. Unless specifically instructed otherwise by your instructor, you must wear safety goggles during laboratory work. Safety goggles are available in the LAMC Bookstore and in the CSUN Bookstore. You are required to have your safety goggles by the fourth 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 spiral notebook is recommended for taking lecture notes.

OPTIONAL MATERIALS

A. **Optional Textbook:** Study Guide for Zumdahl, 5th Ed., Houghton Mifflin, 1999

B. **<u>Lab Coat</u>** – protective clothing.

WELCOME TO CHEMISTRY 65 AT LOS ANGELES MISSION COLLEGE!

LET US WORK TOGETHER TOWARD YOUR ENJOYABLE AND SUCCESSFUL LEARNING EXPERIENCE!

HOW TO SURVIVE AND EVEN EXCEL IN CHEMISTRY 51

- **Chemistry 65 is a demanding course**. It demands much time due to the sheer volume of work you must process for laboratory and lecture. It demands much effort to understand and learn the many new concepts presented in the course. **You can** have a successful, even interesting semester if you practice some of the following hints.

- **Work on chemistry every day**. Do just 2 or 3 problems or read just a few sections of the current chapter. You will often need to try a problem several times before you fully understand it. You will need to read the text several times before you really know the material.

- **You cannot cram Chemistry! Don't try!** Try to stay ahead of lecture. Skim the anticipated lecture topic the day before class. Then you know what is in the book and need not take so many notes. You then can **listen and think during lecture**. Carefully read the examples and solved problems in the text. Cover the author's solution and work them yourself immediately after reading the text. Do the suggested end-of -chapter problems. You cannot solve test problems quickly and efficiently without **lots of practice.** If you cannot solve a suggested problem, or don't understand it, reread the appropriate section in the text and review your lecture notes. Look for a similar problem among the text's examples. Think about it for several days.

- **Ask for help** to get started from your instructor, a tutor, or a fellow student.

- **Look for connections** between the current lecture topic and previous topics or your prior knowledge of chemistry or physics. Look for practical applications of what you are learning.

- **Finally, don't panic**. Take the course one step at a time and let your understanding grow. You will be amazed at how much material you have assimilated by semester's end.

Resources

ME!!! I am your number one resource.

www.profpaz.com → This site has all of the lectures, lab manual, practice exams, and many other resources that will assist you through the material in this course.

LAMC Chem 65 on FACEBOOK → I will post course material, answer questions and place Chem 65 related information (websites, pictures, and videos) to enhance your educational experience. Also, this provides a forum for student:professor and student:student interaction. I encourage students to answer questions for their peers. Log on to facebook → search for LAMC Chem 65 and add.

Learning Center: Laboratories for Learning, Writing, Math & Science. Walk-in and appointment services offered. Call 818-364-7754 or visit www.lamission.edu/learningcenter

USE ANY OTHER RESOURCE THAT YOU HAVE AVAILABLE →TO SHARE WITH CLASS, SPEAK WITH ME AND I WILL ANNOUNCE THE RESOURCE TO THE CLASS.

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 25% of your grade:
   A) Laboratory Reports and Unknowns: 12.5%
   B) Laboratory Exams: 12.5% (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!

INSTRUCTIONS FOR LABORATORY NOTEBOOK

- Each student must have a **quadrille ruled, sewn** 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 **directly into the Notebook** (nowhere else) **and in ink** (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 **right hand pages**. The left-hand pages are reserved for calculations and notes that do not belong on the right hand page.

- Begin with a **TITLE PAGE** State the course, section number, semester, the instructor's name, your name and your locker number.

- The second page is an **INDEX.** 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 **complete bibliographic information** 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 **right-hand pages** in the Notebook should be **numbered sequentially in the upper right corner of the page**.

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

TITLE:	Here you enter the **title** of experiment, and **date performed**.	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 in this section. If you need to add other calculations this may be entered on the **left hand side**.	
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 **in ink.** If you make an error or repeat an exercise, **DO NOT ERASE ANYTHING.** 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)

AND RESPONSIBILITES

- **Laboratory safety is everybody's responsibility. As a student in the chemistry lab you are responsible for understanding and following the guidelines below.**
- **Failure to do so may result in a reduction in your laboratory grade.**

GENERAL PRACTICES:

- Plan and conduct lab experiments in accordance to established directions and SAFE PRACTICES.
- Report unsafe practices, conditions and injuries to instructor or department chair.
- Maintain awareness of current safety or environmental practices.
- Exercise reasonable neatness as one of the best ways to avoid accidents and injuries.

SAFE PRACTICES IN THE LABORATORY:

- Know location of exits, fire extinguishers, fire blanket, fire alarm, safety shower, eye-wash stations and broken glass container in the laboratory.
- Wear eye protection whenever working with flames, concentrated acids and bases or instructed by the instructor.
- Restrain long hair, loose clothing and dangling jewelry.
- Shoes must be worn at all times.
- Clean your work station at end of laboratory from spilled chemicals, used matches, and other debris.
- Close reagent bottles after use, and wipe bottles clean if spill occurs.
- Clean up spilled chemicals immediately, using appropriate procedure.
- Keep containers of flammable liquids away from open flames.
- No eating, drinking, smoking or applying cosmetics in the laboratory.
- Do not perform unauthorized experiments, or use equipment without instructions.
- Do not return unused chemicals to the stock bottle. Share excess chemicals with other students or disposed of properly.
- Never leave heat sources such as hot plate or Bunsen burner unattended.
- Do not pipette by mouth. Use mechanical pipetting devices.
- Never work alone in the laboratory.

INCIDENTS:

- Report all spills and accidents, no matter how minor, to the instructor immediately.
- Wash your hands immediately and thoroughly if they come in direct contact with chemicals.
- In case of a chemical spill, use the emergency spill kit to contain and neutralize the substance.
- In case of broken glassware, do not touch the broken glassware with your bare hands. Always use a broom and dust pan and discard them in designated broken glass container.

UPON COMPLETION OF YOUR LABORATORY EXPERIMENTS:

- Return all items to their proper locations. These items may include ring stands, clamp rings, wire gauzes, matches, etc. Nothing should be left on the laboratory counter top.
- Dispose of all used chemicals according to the instructions provided by your instructor.
- Shut off all gas, water and vacuum fixtures.
- Return all reagent bottles and sample vials to the instructor bench.
- Clean up workstation from spilled chemicals, used matches and other debris.
- Secure locker on your station.
- Wash hands thoroughly before leaving laboratory.

TENTATIVE LECTURE SCHEDULE

Week	Date	Chapter	Lecture Topic
1	M, Feb 4	1, 2	Introduction to class; Scientific Method, Measurements
	W, Feb 6	2	Errors in Measurements, Significant Figures, SI Units,
2	M, Feb 11	2 & 3	Unit Convesions, Density & Physical and Chemical Properties/Changes
	W, Feb 13	3	Continue Classification of Matter and Energy
3	**M, Feb 18**	**---**	**Presidents Day (Non-Instructional)** **Last day to drop without a "W"**
	W, Feb 20	4	Periodic Table, Atomic Theory (Atoms, Elements, and Ions)
4	M, Feb 25	4, 5	Atomic Structure: Molecules and Ionic Compounds
	W, Feb 27	5	Atomic Theory and Nomenclature
5	M, Mar 4	5	Nomenclature cont.
	W, Mar 6	6	**Exam 1 (Chapters 1–5)**
6	M, Mar 11	6	Mole Concept and Calculations
	W, Mar 13	6	Mass Percent and Empirical Formulas
7	M, Mar 18	7	Chemical Reactions: Classifying and Balancing
	W, Mar 20	7	Aqueous Reactions and Redox Reactions
8	M, Mar 25	8	Stoichiometry
	W, Mar 27	8	Limiting Reactant & Percent Yield
9	**Mar 29-Apr 5**	**---**	**Spring Break (College closed)**
10	**M, April 8**	**---**	**Exam 2 (Chapters 6-8)**
	W, April 10	9	The Modern Atomic Theory
11	M, April 15	9	Electron Configuration and Periodic Table Trends
	W, April 17	10	Chemical Bonding: Lewis Structures
12	M, April 22	10	Molecular Shapes: VSEPR
	W, April 24	11	Gases: KMT, Gas Laws
13	M, April 29	11	Gas Laws Cont. and Partial Pressures
	W, May 1 **May 3**	**---**	**Exam 3 (Chapters 9-11)** **Last day to drop with a "W"**
14	M, May 6	12	Intermolecular Forces
	W, May 8	13	Solution Concentrations and Properties
15	M, May 13	13	Stoichiometry of Solution Reactions
	W, May 15	14	Acid and Bases
16	M, May 20	14	Acid and Bases
	W, May 22	---	Review
17	**M, June 3** **(5:30-7:30)**	**------**	**Final Exam (Chapters 12-14)**

LABORATORY SCHEDULE (M or W)

Week	Date	Exp. #	Activity
1	Feb. 4 or Feb. 6	--- **1**	**Introduction to Lab; Safety Video** **Check in & What Chemist Do; Identification & Analysis**
2	Feb. 11 or Feb. 13	**1** **WS1**	**What Chemist Do: Identification & Analysis** **Measurements / Exercise A (DL from Moodle)**
3	Feb. 18 or Feb. 20	 **(H/O)**	**Presidents Day for Monday Class** **The Bunsen Burner (Wednesday class only)** **(DL from Moodle!)**
4	Feb. 25 or Feb. 27	**(H/O)** **2** **4**	**The Bunsen Burner (Monday class only)** **Separation of Food Dyes (both M and W classes)** **Separation of Salt & Sand (both M and W classes)**
5	Mar. 4 or Mar. **6**	**5** **5** **---**	**Physical Properties of Household Liquids (Part I)** **Physical Properties of Household Liquids (Part II)** **Graphing Data (Using Excel)**
6	**Mar. 11 or** **Mar. 13**		**Lab Exam I (Exp. 1, 2, 4, & 5, WS1, and B. Burner)**
7	Mar. 18 or Mar. 20	**WS2** **15**	**Nomenclature (DL from Moodle)** **Identification of Metal Ions: Fingerprints of Metals**
8	Mar. 25 or Mar. 27	**10** **10**	**Combination Reactions** **Decomposition Reactions**
9	**Mar. 29 through Apr. 5**		**Spring break**
10	**Apr. 8 or** Apr. 10	**12** **(H/O)**	**Double Replacement Reactions** **Writing Net Ionic Equations**
11	Apr. 15 or Apr. 17	**11** **9**	**Single-Replacement Reactions** **Percentage of Copper in Malachite**
12	Apr. 22 or Apr. 24		**Lab Exam 2 (Exp. 9-12, 15)**
13	Apr. 29 or May 1	**WS3** **(H/O)**	**The Chemical Bond: Lewis Structures** **Molecular Geometry: VSEPR and Lewis Structure**
14	May 6 or May 8	**20** **(H/O)**	**Density of CO_2** **Standardization of NaOH / Unknown Acid Tit (DL)**
15	May 13 or May 15	**(H/O)**	**Finish Unknown Acid Titration (DL)** **Check-Out**
16	May 20 or May 22		**Lab Exam 3 (Exp. 20, WS3, Mol Geometry, Acid/ Base Titration)**

STUDENT LEARNING OUTCOMES:

1. Conceptualize, model and explain chemical processes qualitatively at the molecular level.
2. Express mathematically and 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.
5. Represent and interpret data graphically.

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 FORM 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 EVALUTATION:

Your final grade in class is approximately composed of the following:

Quizzes	**10% of grade**
Exams (3)	**45% of grade**
Final Exam	**20% of grade**
Lab Exams	**12.5% of grade**
Lab Reports	**12.5% of grade**

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GRADING SCALE:

The tentative final grades cutoffs are as follows:
This course will likely be graded on a curve.

A	90% - 100%
B	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.