

LOS ANGELES MISSION COLLEGE-SPRING 2012
CHEMISTRY 51-SEC. 0150
Lecture: MW 10:40-12:45 ; Room: INST –2003
Laboratory: MW 9:00-10:30 ; Room INST–2012

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CLASS DESCRIPTION: 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.

REQUIRED MATERIALS

1. **Textbook:** “General, Organic, and Biological Chemistry”, by Timberlake, 2nd Edition, Custom Published for LA Mission College.
➤ 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 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 3-ring binder is recommended for keeping class notes organized.

**STUDENT
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.

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
EVALUTATION:**

Your final grade in class is composed of the following:

Quizzes	100 points
Exams (3)	300 points
Final Exam	150 points
1 st Lab Exam	50 points
2 nd Lab Exam	50 points
Final Lab Exam	100 points
Lab Reports	250 points
Total	1000 points

**GRADING
SCALE:**

The final grades cutoffs are as follows:

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.

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 **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.	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:	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, Fall 96)

TENTATIVE LECTURE SCHEDULE

Week	Date	Chapter	Lecture Topic	Text Reference
1	Feb. 6	1	Introduction to class; Scientific Method	P.1-P.2
	Feb. 8	1	Measurements; SI Units; Significant Figures	1.1-1.5
2	Feb. 13	1	Unit Conversions; Density	1.6-1.8
	Feb. 15	2	Energy & Heat	2.1-2.4
3	Feb. 20	----	President's Day (College closed)	-----
	Feb. 22	2	Classification & Properties of Matter/Review for Test 1	2.5-2.7
4	Feb. 27	-----	Test 1 (Chapters 1 & 2)	-----
	Feb 29 Mar. 2	3 -----	Periodic Table; Atomic Theory <i>Last day to drop without a "W"</i>	3.1-3.3 -----
5	Mar. 5	3	Atomic Structure	3.4-3.6
	Mar. 7	3	Electron Configuration; Periodic Trends	3.7-3.9
6	Mar. 12	3	Ionic Compounds – Naming and Writing Formulas	5.1-5.4
	Mar. 14	5	Covalent Compounds – Naming and Writing Formulas	5.5-5.6
7	Mar. 19	5	Molecular Shapes & Polarity	5.7-5.8
	Mar. 21	5	Attractive Forces in Compounds	5.9
8	Mar. 26	-----	Review for Test 2	-----
	Mar. 28	-----	Test 2 (Chapters 3 & 5)	-----
9	April 2-9	-----	Spring Break (College closed)	-----
10	April 11	6	Types of Chemical Reactions/Balancing Equations	6.1-6.3
11	April 16	6	Single & Double Replacement Reactions	Notes
	April 18	6	Mole Calculations; Stoichiometry	6.4-6.6
12	April 23	6	Mass Calculations; Limiting Reactants	6.7-6.8
	April 25	6	Percent Yield/Review for Test 3	6.8-6.9
13	April 30	-----	Test 3 (Chapter 6)	-----
	May 2 May 4	8 ----	Solutions & Solubility <i>Last day to drop with a "W"</i>	8.1-8.3 -----
14	May 7	8	Solution Concentrations	8.4-8.5
	May 9	8	Solution Properties	8.6
15	May 14	10	Acids & Bases	10.1–10.2
	May 16	10	Ionization of Water & pH Scale	10.3–10.4
16	May 21	7	Gases & Their Properties	7.1-7.4
	May 23	7	Gas Laws	7.5-7.9
17	May 30 (10:00-12:00)		Final Exam (Chapters 7,8 & 10)	-----

LABORATORY SCHEDULE

Week	Date	Exp. #	Activity	Points
1	Feb. 6	----	Introduction to Lab; Safety Video	----
	Feb. 8	----	Check-in	----
2	Feb. 13	1	What Chemists Do; Identification & Analysis	10
	Feb. 15	2	Colorful Chemistry with Food Dyes	10
3	Feb. 20	----	President's Day (College closed)	-----
	Feb. 22	4	Separation of a Mixture of Sand & Salt	20
4	Feb. 27	4	Complete Exp. 4 Periodic Table Video	----
	Feb 29	----	Graphing with Excel	XC
5	Mar. 5	5	Physical Properties of Household Liquids (Part I)	20
	Mar. 7	5	Physical Properties of Household Liquids (Part II)	----
6	Mar. 12	-----	Lab Exam I (Exp 1-4, Periodic Table Video) (You may use your lab notebook)	----
	Mar. 14	7	Specific Heat of a Liquid (Part I)	20
7	Mar. 19	7	Specific Heat of a Liquid (Part II)	----
	Mar. 21	15	Identification of Metal Ions	10
8	Mar. 26	17	Molecular Shape & Polarity	20
	Mar. 28	10	Combination Reactions	30
9	April 2-9	-----	Spring Break (College closed)	-----
10	April 11	10	Decomposition Reactions	----
11	April 16	-----	Lab Exam II (Exp 5, 7, 15, 17) (You may use your lab notebook)	-----
	April 18	11	Single Replacement Reactions	20
12	April 23	12	Double Replacement Reactions	20
	April 25	9	Percentage of Copper in Malachite	15
13	April 30	9	Percentage of Copper in Malachite (Calculations)	----
	May 2	13	Table Salt from Baking Soda	15
14	May 7	3	Electrolytes & Non-electrolytes	30
	May 9	3	Electrolytes & Non-electrolytes (cont'd.)	----
15	May 14	Hand out	Properties of Acids & Bases	10
	May 16	----	TBA	----
16	May 21	-----	Check-out	----
	May 23	-----	Lab Final Exam (Exp 3, 9-13) (You may use your lab notebook)	-----