

CHEMISTRY 101 LECTURE

INTRODUCTORY GENERAL CHEMISTRY



Ticket Number 3156

5:25 – 7:30 P.M. Tuesday and Thursday

Room: INST-2003

Instructor:Professor Charles Mallory

Email:.....Charles.Mallory@ieee.org

Web Address:<http://www.themalloryfamily.net>

Check this location often. This location will contain old quizzes, tests, handouts study guides and the laboratory manual.

Prerequisites:

- ☞ Any college level Introductory Chemistry Course with a grade of C or better.
Note: High School Chemistry courses do not satisfy this requirement unless the student earns a satisfactory grade on the Chemistry Placement test administered by Los Angeles Mission College. Contact your instructor if you wish to set up an appointment to take the Chemistry Placement Test.
- ☞ Mathematics 125 (Intermediate Algebra) with a grade of C or better
- ☞ Concurrent enrollment in MATH 240 (Trigonometry) or MATH 260 (Pre-Calculus) is recommended. This is especially important if you intend to enroll next semester in Chemistry 102 and/or Physics 6

Required Materials:

- ☞ General Chemistry 9th edition by Ebbing (**Required NOW**)
Online book is available for rental; see my website for a link.
- ☞ Periodic Table of the Elements
- ☞ Scientific Calculator (**Required NOW**)
- ☞ Optional: "General Chemistry - Study Guide for General Chemistry" by Bookin, Houghton Mifflin, 8th edition. A copy of the study guide is available in the Library for reference use.

Class Description:.....This course is designed for both the science majors. The course covers fundamental chemical principles and theories with special emphasis on stoichiometry, atomic structure, periodic table, chemical bonding, solutions, acids and bases, oxidation-reduction, and properties of gases. This class is equivalent to CSUN Chemistry101.

SLO:.....Student Learning Objectives:

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.

College Student Learning Objectives:

1. Written and Oral Communication
2. Problem Solving
3. Math Competency

Assessment Method:

1. Embedded questions in exams.
2. Evaluation of lab reports and lab notebooks.

Chemistry 101 Grading

Homework:Homework **will** be given for each chapter. The test and final questions will come from these questions. The assignments will **NOT** be collected but you are expected to have completed them. I will know if you have completed the homework when I grade your tests. Please note that the test questions **will** come from the homework.

Attendance:.....This will be taken at the beginning of each class meeting. Attendance will be utilized when determining the final grade for borderline students and will count for 5% of your final grade. Please note that the material will come very fast and missing a class will be detrimental to your understanding of the material **and** your final grade in the class.

You will not be automatically dropped if you do not attend. If you decide to not complete the class it is your responsibility to drop.

Tests:.....The questions will primarily come from the homework questions from the book. The tests will count for 40% of your final grade.

Final:.....The final questions will primarily be taken from the tests. The final will be cumulative and cover all tests. The final will count for 15% of your final grade. **Failure to take the final exam will result in an automatic fail in the course.**

Office Hours:.....Mondays 5:30 – 7:30 PM

Grading:The grade you will earn will be based on the following scale and a semi-modified scale.

A	90% - 100%
B	80% - 89%
C	65% - 79%
D	55% - 64%
F	0% - 54%

I guarantee that you will receive at least the above grade if not higher due to modifications of the curve to fit the class performance.

Grade Breakdown:The final grade is based upon your grades in both the laboratory and lecture.

Lecture (59%)	
Exams (4)	40%
Final	13%
Attendance	5%
Code of Academic Integrity	1%
Laboratory (41%)	
Lab Reports	15%
Lab Unknowns	5%
First Lab Exam	5%
First Lab Notebook	2%
Second Lab Exam	5%
Second Lab Notebook	3%
Final Lab Exam	5%
Laboratory Safety Rules	1%
Total	100%

Tentative Lecture Schedule

Day	Chap	Topic
Tuesday, Feb 8, 2011	1	Introduction to class Chemistry and Measurement – An Introduction to Chemistry
Thursday, Feb 10, 2011	1	Chemistry and Measurement – Physical Measurements
Tuesday, Feb 15, 2011	2	Atoms, Molecules and Ions – Atomic Theory and Atomic Structure, Chemical Substances: Formulas and Names
Thursday, Feb 17, 2011	2	Atoms, Molecules and Ions – Chemical reactions: Equations
Thursday, Feb 17, 2011	Last Day to Add	
Tuesday, Feb 22, 2011	3	Calculations with Chemical Formulas and Equations – Mass and Moles of Substance, Determining Chemical Formulas
Tuesday, Feb 22, 2011	Last Day to Drop classes without incurring fees or with a refund	
Thursday, Feb 24, 2011	3	Calculations with Chemical Formulas and Equations – Stoichiometry: Quantitative Relations in Chemical Reactions
Tuesday, Mar 1, 2011	--	Review for Test 1
Thursday, Mar 3, 2011	TEST 1 (Chapters 1-3)	
Friday, Mar 4, 2011	Last Day to Drop classes without receiving a "W"	
Tuesday, Mar 8, 2011	4	Chemical Reactions – Ions in Aqueous Solution, Types of Chemical Reactions
Thursday, Mar 10, 2011	4	Chemical Reactions – Working with Solutions, Quantitative Analysis
Tuesday, Mar 15, 2011	5	The Gaseous State – Gas Laws
Thursday, Mar 17, 2011	5	The Gaseous State – Kinetic-Molecular Theory
Tuesday, Mar 22, 2011	6	Thermochemistry – Understanding Heats of Reaction
Thursday, Mar 24, 2011	6	Thermochemistry – Using Heats of Reaction
Tuesday, Mar 29, 2011	--	Review for Test 2
Thursday, Mar 31, 2011	Cesar Chavez Day – College Closed	
Tuesday, Apr 5, 2011	TEST 2 (Chapters 4-5)	
Thursday, Apr 7, 2011	6	Thermochemistry
Tuesday, Apr 12, 2011	7	Quantum Theory of the Atom – Light Waves, Photons and the Bohr Theory
Thursday, Apr 14, 2011	7	Quantum Theory of the Atom – Quantum Mechanics and Quantum Numbers
Tuesday, Apr 19, 2011	Spring Break – College Closed	
Thursday, Apr 21, 2011	Spring Break – College Closed	
Tuesday, Apr 26, 2011	8	Electron Configurations and Periodicity – Electronic Structure of Atoms, Periodicity of the Elements
Thursday, Apr 28, 2011	9	Ionic and Covalent Bonding – Ionic Bonds
Tuesday, May 3, 2011	Test 3 (Chapters 6-8)	
Thursday, May 5, 2011	9	Ionic and Covalent Bonding – Covalent Bonds
Friday, May 6, 2011	Last Day to Drop classes with a "W"	
Tuesday, May, 10, 2011	10	Molecular Geometry and Chemical Bonding Theory – Molecular Geometry and Directional Bonding
Thursday, May 12, 2011	10	Molecular Geometry and Chemical Bonding Theory – Molecular Orbital Theory
Tuesday, May 17, 2011	11	States of matter; Liquids and Solids – Changes of State, Liquid State, Solid State
Thursday, May 19, 2011	12	Solutions – Solution Formation
Tuesday, May 24, 2011	12	Solutions – Colloid Formation & Colligative Properties
Thursday, May 26, 2011	Test 4 (Chapters 9-12)	
Tuesday, May 31, 2011	FINAL EXAM (Chapters 1-12)	

ASSIGNED PROBLEMS (Ebbing, 9th Ed)

You will find below a list of assigned problems listed by chapters. Solving these and additional problems is highly recommended and constitutes the best preparation for the course. It is your responsibility to know how to solve these problems and others similar to them. The **boldfaced underlined** problems represent those that should be attempted as a **minimum** preparation and study for the course. Some of the questions in the Lecture tests and the Final are very similar to these problems.

- Chapter 11.7, 1.9, 1.12, 1.16, 1.22, 1.41, 1.42, 1.44, 1.46, 1.48, 1.54, 1.57, 1.58, 1.61, 1.62, 1.69, 1.70, 1.73-1.80, 1.109, 1.110, 1.133, 1.134, 1.139, 1.152
- Chapter 22.1, 2.6, 2.7, 2.13, 2.16, 2.17, 2.21, 2.22, 2.23, 2.57, 2.58, 2.59, 2.60, 2.61, 2.62, 2.75-2.86, 2.97, 2.98, 2.125, 2.126
- Chapter 33.13, 3.14, 3.15, 3.16, 3.28, 3.34, 3.38, 3.42, 3.46, 3.57, 3.65, 3.66, 3.69, 3.75, 3.76, 3.79,3.80,3.81, 3.82, 3.84, 3.91,3.92,3.107,3.110, 3.112
- Chapter 44.2, 4.3, 4.5, 4.10, 4.11, 4.15, 4.17, 4.18, 4.29, 4.30, 4.32, 4.33, 4.44, 4.47, 4.48, 4.51,4.52, 4.55, 4.56, 4.57, 4.58, 4.59, 4.60, 4.61, 4.64, 4.67 4.68, 4.69, 4.71, 4.74, 4.76, 4.77, 4.79, 4.81 4.91, 4.93, 4.99, 4.150
- Chapter 55.1, 5.15, 5.16, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24, 5.25, 5.26, 5.48, 5.50, 5.57, 5.59, 5.62, 5.63, 5.64, 5.67, 5.68, 5.69, 5.70, 5.71, 5.82, 5.83, 5.84, 5.87, 5.95, 5.113, 5.129
- Chapter 66.1, 6.4, 6.5, 6.7, 6.8, 6.9, 6.10, 6.21, 6.34, 6.39, 6.43, 6.45, 6.46, 6.47, 6.48, 6.49, 6.50, 6.51, 6.52, 6.53, 6.74, 6.75, 6.76, 6.78
- Chapter 77.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19, 7.20, 7.21, 7.22, 7.23, 7.24, 7.25, 7.26, 7.27, 7.28, 7.29, 7.30, 7.31, 7.32, 7.33, 7.34, 7.35, 7.36, 7.37, 7.38, 7.43, 7.44, 7.45, 7.46, 7.47, 7.48, 7.49, 7.50, 7.51, 7.52, 7.53, 7.54, 7.55, 7.56, 7.57, 7.58, 7.59, 7.60, 7.61, 7.62, 7.63, 7.64, 7.65, 7.66, 7.67, 7.68, 7.69, 7.70, 7.87,
- Chapter 88.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.24, 8.28, 8.42, 8.43, 8.44, 8.45, 8.46, 8.47, 8.48, 8.49, 8.50, 8.51, 8.52, 8.53, 8.54, 8.55, 8.56, 8.57, 8.58, 8.59, 8.60, 8.61, 8.62, 8.63, 8.64
- Chapter 99.5, 9.6, 9.8, 9.9, 9.10, 9.11, 9.12, 9.13, 9.14, 9.15, 9.16, 9.17, 9.18, 9.19, 9.20, 9.21, 22, 9.35, 9.36, 9.37, 9.38, 9.39, 9.40, 9.41, 9.42, 9.43, 9.44, 9.45, 9.46, 9.47, 9.48, 9.49, 9.50, 9.52, 9.55, 9.57, 9.59, 9.60, 9.61, 9.62, 9.63, 9.64, 9.65, 9.66, 9.67, 9.68, 9.71, 9.75
- Chapter 10 ...10.2, 10.4, 10.11, 10.12, 10.13, 10.14, 10.15, 10.16, 10.17, 10.18, 10.19, 10.20, 10.33, 10.34, 10.35, 10.36, 10.37, 10.38, 10.39, 10.40, 10.41, 10.42, 10.45, 10.46
- Chapter 11 ...11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 11.10, 11.13, 11.14, 11.37, 11.38, 11.39, 11.40, 11.41, 11.42, 11.51, 11.52, 11.53, 11.54, 11.61, 11.62, 11.63, 11.64, 11.65, 11.66, 11.67, 11.68, 11.69, 11.70, 11.71, 11.77
- Chapter 12 ...12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 12.8, 12.9, 12.10, 12.11, 2.12, 12.28, 12.33, 12.34, 12.35, 12.37, 12.38, 12.39, 12.40, 12.41, 12.42, 12.43, 12.44, 12.47, 12.49, 12.55, 12.57, 12.59, 12.61, 12.62, 12.63, 12.64, 12.67, 12.72, 12.76, 12.79, 12.80, 12.87, 12.88, 12.94, 12.101, 12.102

Please refer to the website for the latest update to the assigned problems.

Hints for a successful Chemistry 101

Chemistry 101 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 ideas 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 two or three 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 the lecture. Skim the anticipated lecture topic the day before the class. Then you know what is in the book and need not take so many notes. You then can **LISTEN AND THINK DURING THE 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 text problems efficiently without **LOTS OF PRACTICE**. Reread the appropriate section in the text and review your notes. If you cannot solve a suggested problem or don't understand it, 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 or 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 of the materials you have assimilated by the end of the semester.

Significant Figures

	Example	Sig. Digits	Sci-Notation
1 All non-zero digits are significant			
	1.589	4	1.589E+00
	0.897	3	8.97E-01
	36000	2	3.6E+04
2 Significant Zero's			
a All sandwiched zero's			
	13.02	4	1.302E+01
	1.0002	5	1.0002E+00
	10.5	3	1.05E+01
b All trailing zero's preceded by a digit			
	5.000	4	5.000E+00
	20.000	5	2.0000E+01
	15.00	4	1.500E+01
3 Non significant Zero's			
a Leading Zeros			
	0.0200	3	2.00E-02
	0067	2	6.7E+01
b Trailing Zero's to the left of the decimal point in a number without a decimal point			
	56000	2	5.6E+04
	1360	3	1.36E+03

*NOTE: Write the numbers in exponential notation if you have any doubt. All zeros used to indicate the power of 10 (order of magnitude) are not significant.

Rounding

1 If the last digit to be retained in a number is followed by a number less than 5 (<5),

ROUND DOWN.

Round to 3 significant figures:

28.23	rounds to	28.2
578.1	rounds to	578

2 If the last digit to be retained in a number is followed by a number greater than 5 (>5),

ROUND UP.

Round to 2 significant figures:

5.998	rounds to	6.0
0.00258	rounds to	0.0026
3.6502	rounds to	3.7

3 If the last digit to be retained in a number is followed by 5 (0000000... implied),

ROUND the last digit retained to an **EVEN NUMBER**.

Round to 2 significant figures:

1.75	rounds to	1.8
1.050	rounds to	1.0
1.45	rounds to	1.4

Round to 4 significant figures:

67.835	rounds to	67.84
67.885	rounds to	67.88

Calculations

Uncertainty and Significant Figures

The **Least Accurate Number (LAN)** determines the number of digits to which the answer is expressed.

Addition and Subtraction

1. The LAN is the number with the least number of digits following the decimal point.
2. The answer (*sum* or *difference*) can have no more digits *following* the decimal point than the LAN.

Example:

What is the total mass of a mixture made by mixing the following substances?

212	g water (LAN)
1.8	g salt
1.88	g sugar
<hr/>	
215.68	g (incorrect)
216	g (correct)

Multiplication and Division

1. The LAN is the number with the least number of significant figures.
2. The answer (*product* or *quotient*) can have no more significant figures than the LAN.

Example:

Calculate the volume of a rectangular solid that has a length of 4.16 cm, a width of 2.2 cm, and a height of 2.00 cm.

$$\text{Volume} = \text{Length} \times \text{Width} \times \text{Height}$$

$$\text{Volume} = (4.16\text{cm}) (2.2\text{cm}) (2.00\text{cm})$$

LAN

$$\text{Volume} = \del{18.304 \text{ cm}^3} \text{ (incorrect)}$$

$$\text{Volume} = 18 \text{ cm}^3 \text{ (correct)}$$

Periodic Table

(This table will be provided to you for your exams)

Period IA

VIIIA

1	1 H 1.008	IIA										III A	IVA	VA	VIA	VIIA	2 He 4.003	
2	3 Li 6.941	4 Be 9.012											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
3	11 Na 22.99	12 Mg 24.31	IIIB	IVB	VB	VIB	VIIB	----- VIII -----			IB	IIB	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.95
4	19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.88	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.47	28 Ni 58.69	29 Cu 63.55	30 Zn 65.39	31 Ga 69.72	32 Ge 72.59	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
5	37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (98)	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
6	55 Cs 132.9	56 Ba 137.3	57 La* 138.9	72 Hf 178.5	73 Ta 180.9	74 W 183.9	75 Re 186.2	76 Os 190.2	77 Ir 190.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.5	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po (210)	85 At (210)	86 Rn (222)
7	87 Fr (223)	88 Ra (226)	89 Ac~ (227)	104 Rf (257)	105 Db (260)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)									

Lanthanide Series*	58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm (147)	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
Actinide Series~	90 Th 232.0	91 Pa (231)	92 U (238)	93 Np (237)	94 Pu (242)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (249)	99 Es (254)	100 Fm (253)	101 Md (256)	102 No (254)	103 Lr (257)

CHEMISTRY 101 LABORATORY

INTRODUCTORY GENERAL CHEMISTRY



Ticket Number 3156

7:35 – 10:00 P.M. Tuesday and Thursday

Room: INST-2003

- Required Materials:**
- ☞ Applied Chemistry, Chemistry 101 Laboratory Manual on line (**Required NOW**)
Online book is available; see my website for a link.
 - ☞ Periodic Table of the Elements
 - ☞ Scientific Calculator
 - ☞ Safety Goggles
 - ☞ Lab Notebook, This is a quadrille paper, hard cover “Comp Book” (**Required NOW**)

Laboratory Reports:... Laboratory reports are due one week after the completion date of the experiment.
Late reports will be subject to a 25% per week late penalty.

Laboratory Exams:.... Two exams will be given on the scheduled date only. These laboratory exams will be closed book, closed notes with the only resource being your laboratory notebook! No makeup exams will be given.

Lab Notebook:..... The laboratory notebook will be collected and graded twice throughout the semester. Anyone not having the laboratory notebook before the second day of class will be excluded from the laboratory. All notes **MUST** be taken down in the laboratory notebook. You will write your data in the notebook and **then transfer** the data to the laboratory report form. The grading of the laboratory notebook will be based upon the following 15 items.

1. Always write in ink.
2. Write only on the right-hand side of the page.
3. There will be no erasures, no “white out”, no missing pages
4. Never Remove a Page from the Laboratory Notebook.
5. Table of Contents
6. Experiment title (Table of Contents)
7. Page number (Table of Contents)
8. Experiment (Table of Contents)
9. Title (Experiment)
10. Page number and date (Experiment)
11. Purpose (Experiment)
12. Procedure (Experiment)
13. Data (Experiment)
14. Results (Experiment)
15. Discussion & Conclusions (Experiment)

Safety Goggles:..... During the experiments, unless specifically told by your instructor, you must **ALWAYS** wear safety goggles while in the laboratory. Failure to wear safety goggles will dismiss you from the laboratory. You may purchase your own goggles or you may use the ones provided in the laboratory.

Safety Rules:..... Failure to follow the safety rules will result in your dismissal from the laboratory. Safety is the responsibility of all persons within the laboratory. Make sure you read the Safety Rules and Regulations and follow all guidelines.

Tentative Laboratory Schedule

Day	Exp#	Experiment Title	Report Weight	Unknown Weight
Tuesday, Feb 8, 2011	--	Tour of the Lab. Laboratory Procedures. Proper Use of Laboratory Notebook. Safety Video	--	--
Thursday, Feb 10, 2011	1	The Balance	1.0	--
Tuesday, Feb 15, 2011	--	Periodic Table of the Elements (Video). Check In	--	--
Thursday, Feb 17, 2011	2	Density; Part I and Part II*	0.5	0.5
Tuesday, Feb 22, 2011	2	Video: The Volumetric pipet / Density; Part III*	--	1.0
Thursday, Feb 24, 2011	3	Determination of the Empirical Formula of a Compound ⁽²⁾	1.0	--
Tuesday, Mar 1, 2011	4	Table Salt from Baking Soda	1.0	--
Thursday, Mar 3, 2011	5	Analysis of a mixture of table salt and baking soda*	--	2.0
Tuesday, Mar 8, 2011	6	Net Ionic Equations ⁽²⁾	2.0	--
Thursday, Mar 10, 2011	FIRST LABORATORY EXAM (Exp. 1, 2, 3, 4, 5, 6, Safety and Periodic Table Videos)** Hand in your notebook for grading			
Tuesday, Mar 15, 2011	7	Conductance in Solutions ⁽²⁾	2.0	--
Thursday, Mar 17, 2011	8	The Activity Series	2.0	--
Tuesday, Mar 22, 2011	9	Standardization of a Base	1.0	--
Thursday, Mar 24, 2011	10	Analysis of Vinegar	1.0	--
Tuesday, Mar 29, 2011	11	Stoichiometry involving a Gas Collected over water	2.0	--
Tuesday, Apr 5, 2011	12	Thermochemistry ⁽²⁾	--	--
Thursday, Apr 7, 2011	12	Thermochemistry ⁽²⁾ , continued (calculations)	2.0	--
Tuesday, Apr 12, 2011	SECOND LABORATORY EXAM (Exp. 7, 8, 9, 10, 11 & 12)** Hand in your notebook for grading			
Thursday, Apr 14, 2011	13	Separation of Cations by Paper Chromatography*	--	--
Tuesday, Apr 26, 2011	13	Separation of Cations by Paper Chromatography* continued	1.0	1.5
Thursday, Apr 28, 2011	14	Atomic Emission ^{(2)*}	2.0	1.0
Tuesday, May 3, 2011	15	The preparation and properties of NaHCO ₃ ⁽²⁾	2.0	--
Thursday, May 5, 2011	--	Complete experiments 14 & 15	--	--
Tuesday, May, 10, 2011	16	The Effect of Temperature on Solubility ⁽²⁾	1.0	--
Thursday, May 12, 2011	17	Chemical Bonding and Molecular Polarity	2.0	--
Tuesday, May 17, 2011	18	Crystal Structure ⁽²⁾	--	--
Thursday, May 19, 2011	18	Crystal Structure ⁽²⁾ , continued	2.0	--
Tuesday, May 24, 2011	--	Check out	--	--
Thursday, May 26, 2011	FINAL LABORATORY EXAM (13, 14, 15, 16, 17, 18)**			

(2) Indicates that for this experiment students will work in pairs.

* Indicates that for this experiment an unknown will be assigned.

** You may use your laboratory notebook (comp book) during this exam

Laboratory Notebooks

(Note: Your Notebooks will be graded using this criterion.)

General Directions

1. Always write in ink. (NO PENCIL!)
2. Write only on the right-hand side of the page. (The left-hand side of the page should be used for calculations, notes, etc...)
3. Number all right-hand pages in the upper right-hand corner.
4. Just beneath the page number indicate the date on which the laboratory work was done. When the experiment work is done on two different dates, indicate the second date (right-hand margin) at the point where the second day's work begins.
5. The laboratory notebook is an **original permanent record**. This means several things:
 - a. You must write down all data directly (in ink) in the lab notebook. There will be a grade penalty when a student disregards this rule. (The rule means: no writing in pencil; no writing on the lab report sheet, on pieces of paper, etc...)
 - b. There will be no erasures, no "white out", and no missing pages. One thin line may be used to cross out offending material. (Later you may discover that you need this information and this way you can retrieve it!)
 - c. **Never Remove a Page from the Laboratory Notebook.** (At some point this practice could have legal implications; patent fights are won and lost on the legitimacy of lab notebooks.) If you do make a dreadful error and would like to remove a page, do the following: draw a diagonal line across the entire page.
 - d. Holes and spots from chemical spills are legitimate artifacts; do not worry about them.

Format for the Laboratory Notebook

1. Leave one or two pages at the beginning for a **Table of Contents**. On this, list each experiment title (as you perform the experiment) and in a column at the right of the page, give the page number where the experiment write-up starts.
2. Begin each experiment on a fresh right-hand page. Each write-up includes:
 - a. **Title:** At the top of the page give the title of the experiment.
 - b. **Page number and date:** At the top right-hand of each page.
 - c. **Purpose:** Describe what you are doing and why. Describe what information you are attempting to gain by doing this experiment.
 - d. **Procedure:** Give references to the location of the procedure in the text and any deviations from the procedure in the text.
 - e. **Data:** This includes all the observations, measurements, etc... that you make in the laboratory. The data should be presented in tabular form. Check the report sheet to get ideas from the types of tables that are helpful for presenting data for that particular experiment.
 - f. **Results:** These include all the things that you have calculated from the data. Note: results are not calculations, but calculations based on data give results.
 - g. **Discussion & Conclusions:** A short paragraph discussing the results of the experiment. This section should answer the questions from the "Purpose" above. This is the place to mention significant sources of error and the effect they have on the results

STUDENT LABORATORY PRACTICES AND RESPONSIBILITIES

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, eyewash 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.
- Closed toe shoes must be worn at all times, (no sandals, no flip-flops etc...)
- 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 your lock on your locker.
- Wash hands thoroughly before leaving laboratory.

STUDENT SAFETY CONTRACT

Los Angeles Mission College

I, _____, have read and agree to follow all of the safety
(Student's name)

rules set forth by my instructor. I realize that I must obey these rules to ensure my own safety, and that of my fellow students and instructors. I will cooperate to the fullest extent with my instructor and fellow students to maintain a safe lab environment. I will also follow the oral and written instructions provided by the instructor. I am aware that any violation of this safety contract that results in unsafe conduct in the laboratory or misbehavior on my part, may result in being removed from the laboratory and receiving a failing grade in the lab.

Student Signature

Date

Code of Academic Honor and Integrity

Los Angeles Mission College
Departments of Physical and Life Sciences

Students at Los Angeles Mission College, because they are members of an academic community dedicated to the achievement of excellence and the pursuit of honor, are expected to meet high standards of personal, ethical, and professional conduct. These standards require personal integrity and a commitment to honesty. Without the ability to trust in these principles, an academic community and a civil society cannot exist. Los Angeles Mission College students and faculty are as committed to the development of students with honesty and integrity as they are to the academic and professional success of its students.

The **Academic Code of Honor and Integrity** is an undertaking of the students, both individually and collectively, that they will:

1. Not give or receive unpermitted aid during exams, quizzes or assignments
2. Not give or receive unpermitted aid in assignments, reports or any other course work that is to be used by the instructor as a basis for grading.
3. Do their share and take an active part in upholding the spirit and letter of the Code of Academic Honor and Integrity.

Some examples of conduct that are regarded as being in violation of the Academic Honor Code include:

- Copying from another's examination or quiz, or allowing another to copy from one's own papers
- Using any unpermitted source of information, human or other, during an exam, quiz or assignment that influences the grade; this includes the use of technological devices
- Any student-to-student collaboration that is unpermitted
- [Plagiarism](#) (plagiarism is defined as the use, without giving reasonable and appropriate credit to, or acknowledging the author or source, of another person's original work)
- Representing as one's own work as the work of another
- Giving or receiving aid on an academic assignment under circumstances in which a reasonable person should have known that such aid is not permitted

As a part of the effort to promote and instill an environment of honesty and integrity during quizzes and examinations, the following guidelines will apply for any courses in the Departments of Physical and Life Sciences:

1. Students will leave all books and all other non-essential items (e.g. paper, electronic devices, phones etc...) on the floor or inside their backpacks so that they are not useable nor block the sight line between professor and student. No electronic devices will be in reach.
2. Students will not communicate in any way that will dishonorably assist themselves or another student.
3. Students will leave the room during an exam only if permitted by the professor's policy. If permitted, only one student may leave the room at any time and be gone for only the average length of time needed for the stated purpose. Students will leave all purses, bags, books, phones, jackets, etc., in the classroom during the absence.
4. Students will promote the spirit and letter of the **Code of Academic Honesty and Integrity** by dissuading fellow students from dishonest activity and, when such casual persuasion does not work, informing the professor of the possible dishonest activity, either anonymously, or otherwise.
5. Students will make every effort to avoid the appearance of dishonesty or lack of integrity

Violation of this policy will not be tolerated and violators will be subject to penalties. The success of the **Code of Academic Honor and Integrity** is based upon the collective desire of students, faculty and the community to live in an environment that embraces respect for that which is right – both in the college and in society as a whole.

I have read and understand the Code of Academic Honor and Integrity and will abide by both its intent and its spirit:

Name (print) _____ Signature _____ Date _____