

LOS ANGELES MISSION COLLEGE-SUMMER 2019
CHEMISTRY 101-SECTION 11390 & 11391
LEC: MTWTH 8:45-10:10 AM (CMS-236)
LAB: MTWTH 10:25 AM-1:40 PM (CMS-206)

INSTRUCTOR (LEC): Said Pazirandeh
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OFFICE HOURS: BY APPT.

1. **PREREQUISITES:**

- Chemistry 65 with a grade of C or better.
- Mathematics 125 (Intermediate Algebra) with a grade of C or better

2. **TEXTBOOK:**

- Required: "**Chemistry: A Molecular Approach**", Nivaldo Tro (4st Ed; ISBN 978-1-323-44796-3)
- Copy of the Textbook will be available on Reserve in the Library.
- See helpful hints for selecting textbook available on profpaz.com.

3. **LABORATORY MANUAL:**

- Required: "**Chemistry in the Laboratory**" by J. M. Postma, (7th Edition; ISBN 9781429219549)
You are required to have your lab manual by the 3rd class meeting.

4. **LABORATORY NOTEBOOK:**

- Required: A bound type carbon-less notebook (available in LAMC bookstore).
You are required to have your laboratory notebook by the 3rd class meeting.
- You are required to report all laboratory work in your laboratory notebook. **Your lab instructor will provide more information on the requirements for maintaining this lab 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.

STUDENT LEARNING OUTCOMES

1. Describe, explain and model chemical and physical processes qualitatively at the molecular level in order to explain macroscopic properties. ([Assessment rubric](#))
2. Solve quantitative chemistry problems through integration of multiple ideas and demonstrate reasoning clearly and completely. ([Assessment rubric](#))
3. Perform laboratory techniques safely and accurately, analyze results of laboratory experiments, evaluate sources of errors, and use laboratory notebook to write formal laboratory report following standard scientific guidelines. ([Assessment rubric](#))

GRADING SCALE

- Your grade in the class is composed of the following components:

<i>ASSIGNMENT</i>	<i>% OF TOTAL</i>	<i>ASSIGNMENT</i>	<i>% OF TOTAL</i>
QUIZZES	10	LABORATORY REPORTS & UNKNOWNNS	25
EXIT TICKETS	10	PRE LAB QUIZZES	5
TESTS (2)	30	GROUPWORK	5
FINAL EXAM	15		
TOTAL	65 %	TOTAL	35 %

- The grading scale in the class is as follows:

A	90% – 100%
B	80% – 90%
C	65% – 80%
D	55% – 65%
F	less than 55%

- NOTES:**
- **Exit Tickets** are worksheets that are handed out after each lesson to provide practice and assessment of your knowledge on the topic discussed. They are due the next class meeting after distribution. No late Exit Tickets are accepted.
 - In order to conserve lecture time, some of the quizzes will be given during the scheduled laboratory session.
 - **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 are allowed.

TENTATIVE LECTURE SCHEDULE*

Week	Date	Text Reference	Topic
1	June 10	-----	Introduction to class – Review of course content
	June 11	3.2-3.6	Classification of Compounds/Ionic Nomenclature
	June 12	3.7-3.10	Molecular Nomenclature/Composition of Compounds
	June 13	3.11-3.12	Writing & Balancing Equations/Organic Compounds
2	June 17	4.2-4.5	Stoichiometry/Solution Concentration and Dilution
	June 18	4.5-4.8	Aqueous Reactions/Other Double Replacement Reactions
	June 19	4.9	Redox Reactions/Balancing Redox Reactions
	June 20	5.2-5.5	Simple Gas Laws/Ideal Gas Law & Its Applications
3	June 24	5.6-5.7	Mixture of Gases/Gases in Chemical Reactions
	June 25	5.8-5.10	Kinetic Molecular Theory/Real Gases
	June 26	-----	Review for Test 1
	June 27	6.2-6.5	1 st Law of Thermodynamics/Calculating Heat & Work
4	July 1	-----	Test 1 (Chapters 3-5)-Part 1
	July 2	6.6-6.7	Thermochemical Equations/Constant Volume Calorimetry
	July 3	6.8-6.9	Constant Pressure Calorimetry/Std Enthalpies of Formation
	July 4	-----	Independence Day – College closed
5	July 8	7.2-7.4	Light, Waves and Energy/ Bohr's Model of Atom
	July 9	7.5-7.6	Quantum Mechanics and Atomic Orbitals
	July 10	8.2-8.9	Electron Configuration/Periodic Properties
	July 11	-----	Review for Test 2
6	July 15	-----	Test 2 (Chapters 6-8)-Part 1
	July 16	9.2-9.4	Ionic Bonding/Lattice Energy & Born-Haber Cycle
	July 17	9.5-9.8	Covalent Bonding/Lewis Structures/Resonance
	July 18	9.9-9.10 -----	Exceptions to the Octet Rule/Bond Energies Last day to drop with a "W" (online)
7	July 22	10.2-10.5	Molecular Shapes & Polarity
	July 23	10.6-10.7	VB Theory/Hybridization of Atomic Orbitals
	July 24	11.2-11.5	Intermolecular Forces
	July 25	13.4-13.5	Factors Affecting Solubility/Solution Concentrations
8	July 29	13.6	Colligative Properties involving Nonelectrolyte Solutes
	July 30	13.7	Colligative Properties of Strong Electrolytes
	July 31	-----	Review for Final Exam
	Aug 1	-----	FINAL EXAM (Chapters 9,10,13)-Part 1

** This schedule is tentative and subject to change, based on instructor's discretion, as the class progresses.*

LABORATORY WORK

Laboratory work is an established part of courses in chemistry at college and universities. Laboratory work allows students to develop their skills in the following areas:

- **Practical skills:** e.g. safety, hazards & risk assessment; procedures, instruments, observation of methods.
- **Transferable skills:** e.g. team working, organization, time management, communication.
- **Intellectual stimulation:** e.g. connections with the ‘real world’, raising enthusiasm for chemistry.

In this course, in the laboratory, you will work with another classmate as a “team” by sharing locker and equipment and collaborating on experimental work. Each group is expected to keep the contents of their lockers clean and undamaged, and will check out at the end of the semester. Damaged and missing equipment must be accounted for and will be replaced by the stockroom without any charge to the student.

- For each experiment performed, each member of the group is expected to
 - **take active part in the work,**
 - **record his/her data individually,**
 - **do his/her own calculations,**
 - **turn in an individual lab report for grading purposes**
- Laboratory Reports are due one week after the class period in which the experiments have been performed. **Late reports are subject to a penalty, as deemed appropriate by the lab instructor.**
- 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. Periodic pre-lab quizzes are given to assess your preparation and basic knowledge of the experiments at the beginning of some lab periods.
- There is no make-up allowed for laboratory work. If you are absent during an experiment, speak with the instructor to see if a report with your classmate’s data will be accepted for a prorated grade.



THE WHYs, WHATs AND HOWs OF LABORATORY NOTEBOOK

Each student is expected to keep a laboratory notebook to record data and keep experimental results in the laboratory. The notebook required is a carbon-less notebook that produces copies of recorded work automatically.

Why?

Keeping a laboratory notebook develops skills on how to collect, record and organize observations and other related information in a chemistry class. These skills are highly regarded in industry and academic laboratories as scientists and researchers are expected to accurately and properly record their observations, results and discoveries for proper credit for intellectual property and rights.

What?

A laboratory notebook is a personal record of your work in your chemistry class, and can therefore be somewhat different than other student's notebooks in the class. However, every student's notebook should have the following information within its content:

- Title of Experiment
- Objective or Purpose
- Summary of Procedure or a reference to it.
- Data & Observation
- Results and Calculations
- Answers to Questions and Problems assigned for the experiment

As mentioned above, while the style of your lab notebook might be different from the other students in the class, all notebooks must contain the critical information indicated above to properly document the results of the experiment. For some samples of lab notebook styles, see "[Guide to Preparing Your Lab Notebook](#)" on profpaz website.

How?

Learning how to keep a proper lab notebook in chemistry class is a process that will improve as you progress in this and other chemistry classes. To be successful,

- Follow all directions provided by your lab instructor.
- Read experiments prior to coming to lab and attempt to prepare some of your lab notebook prior to your class. This prelab preparation can include: Title, Purpose and Procedure or reference to it.
- Follow the [Do's and Don'ts](#) of preparing lab notebook.
- Use your instructor's feedback (verbal or written) to improve your skills for future experiments.

TENTATIVE LABORATORY SCHEDULE*

Week	Date	Experiment No.	Experiment Title
1	June 10	-----	Introduction to Lab Procedure & Policies/Check-in
	June 11	-----	Chem 65 Review-Measurements & Error
	June 12	-----	Chem 65 Review-Units and their Conversions
	June 13	5	A Cycle of Copper Reactions
2	June 17	8	Determination of a Chemical Formula
	June 18	-----	Complete experiments 5 and 8
	June 19	H/O	Standardization of Base and Titration of Vinegar
	June 20	H/O	Standardization of Base and Titration of Vinegar (cont'd)
3	June 24	H/O	Net Ionic Equations
	June 25	13	Reactivity of Metals with HCl-Method A-Prelab Discussion
	June 26	13	Reactivity of Metals with HCl-Method A
	June 27	-----	TBA
4	July 1	-----	Lecture Test 1-Part 2
	July 2	14	Heat Capacity of Metals
	July 3	14	Heat Capacity of Metals-Interactive Lab
	July 4	-----	Independence Day – College closed
5	July 8	15	Enthalpy Changes in Chemical Reactions
	July 9	15	Enthalpy Changes in Chemical Reactions-Interactive Lab
	July 10	17	Emission Spectra-Prelab Discussion
	July 11	17	Emission Spectra
6	July 15	-----	Lecture Test 2-Part 2
	July 16	H/O	Serial Dilution
	July 17	H/O	Serial Dilution (cont'd)
	July 18	18	Ionic & Covalent Bonding
7	July 22	H/O	Lewis Structures/Resonance
	July 23	H/O	Valence Bond Theory-Hybridization of Orbitals
	July 24	-----	TBA
	July 25	-----	TBA
8	July 29	22	Colligative Properties
	July 30	22	Colligative Properties (Cont'd)
	July 31	-----	Review for Final Exam
	Aug 1	-----	LECTURE FINAL EXAM-Part 2

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