

LOS ANGELES MISSION COLLEGE-FALL 2019
CHEMISTRY 101-SECTION 15065 & 15076 OR 19211
LEC: TTH 5:15-6:40 PM (CMS-236)
LAB (15076): TTH 1:50-5:00 PM (CMS-210)
LAB (19211): TTH 6:50-10:00 PM (CMS-210)

INSTRUCTOR (LEC): Said Pazirandeh
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OFFICE: CMS 242
OFFICE HOURS: MW 9:00-10:00 AM
W 2:00-3:00 PM
F 11:00-1:30 PM

INSTRUCTOR (Lab 21503) : Darius Vosooghi
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OFFICE PHONE: (818) 364-7600 X-
OFFICE: CMS 237
OFFICE HOURS: TBA

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 (4th Custom 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 1-4292-1954-8)
You are required to have your lab manual by the 2nd class meeting.

4. LABORATORY NOTEBOOK:

- Required: A bound type carbon-less notebook (available in LAMC bookstore; item # 978-1-930882-74-4).
You are required to have your laboratory notebook by the 2nd 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	20
EXIT TICKETS	10	LAB TESTS	10
TESTS (2)	30	GROUPWORK	5
FINAL EXAM	15		
TOTAL	65 %	TOTAL	35 %

- The grading scale in the class is as follows:

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

- 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 2nd 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.

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 LECTURE SCHEDULE*

Week	Date	Text Reference	Topic
1	Aug 27	-----	Introduction to class – Review of course content
	Aug 29	3.2-3.6	Classification of Compounds/Ionic Nomenclature
2	Sep 3	3.7-3.10	Molecular Nomenclature/Composition of Compounds
	Sep 5 <i>Sep 8</i>	3.11-3.12 -----	Writing & Balancing Equations/Organic Compounds <i>Last day to drop without a “W”(online only)</i>
3	Sep 10	4.2-4.5	Stoichiometry/Solution Concentration and Dilution
	Sep 12	4.5-4.8	Aqueous Reactions/Other Double Replacement Reactions
4	Sep 17	4.9	Redox Reactions/Balancing Redox Reactions
	Sep 19	5.2-5.5	Simple Gas Laws/Ideal Gas Law & Its Applications
5	Sep 24	5.6-5.7	Mixture of Gases/Gases in Chemical Reactions
	Sep 26	5.8-5.10	Kinetic Molecular Theory/Real Gases
6	Oct 1	-----	Test 1 (Chapters 3-5)
	Oct 3	6.2-6.5	1 st Law of Thermodynamics/Calculating Heat & Work
7	Oct 8	6.6-6.7	Thermochemical Equations/Constant Volume Calorimetry
	Oct 10	6.8	Constant Pressure Calorimetry/Thermochemical Equations
8	Oct 15	6.9	Hess’s Law/ Std Enthalpies of Formation
	Oct 17	7.2-7.3	Light, Waves and Energy/ Bohr’s Model of Atom
9	Oct 22	7.4-7.6	Wave Nature of Electron/Quantum Mechanics
	Oct 24	8.2-8.5	Electron Configuration & Periodic Table
10	Oct 29	8.6-8.9	Periodic Properties
	Oct 31	9.2-9.4	Ionic Bonding/Lattice Energy & Born-Haber Cycle
11	Nov 5	-----	Test 2 (Chapters 6-8)
	Nov 7	9.5-9.8	Covalent Bonding/Lewis Structures/Resonance
12	Nov 12	9.9-9.10	Exceptions to the Octet Rule/Bond Energies
	Nov 14 <i>Nov 17</i>	10.2-10.5 -----	Molecular Shapes & Polarity <i>Last day to drop with a “W” (online only)</i>
13	Nov 19	10.6-10.7	VB Theory/Hybridization of Atomic Orbitals
	Nov 21	11.2-11.5	Intermolecular Forces
14	Nov 26	13.4-13.5	Factors Affecting Solubility/Solution Concentrations
	Nov 28	-----	Thanksgiving Holiday (College closed)
15	Dec 3	13.6	Colligative Properties involving Nonelectrolyte Solutes
	Dec 5	13.7	Colligative Properties of Strong Electrolytes
16	Dec (5:30-7:30)	-----	FINAL EXAM (Chapters 9-12)

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

TENTATIVE LABORATORY SCHEDULE*

Week	Date	Experiment No.	Experiment Title
1	Aug 27	-----	Introduction to Lab Procedure & Policies/Check-in
	Aug 29	-----	Chem 65 Review-Measurements & Error
2	Sep 3	-----	Chem 65 Review-Units and their Conversions
	Sep 5	5	A Cycle of Copper Reactions
3	Sep 10	8	Determination of a Chemical Formula
	Sep 12	-----	Complete experiments 5 and 8
4	Sep 17	Handout C	Standardization of Base and Titration of Vinegar
	Sep 19	Handout C	Standardization of Base and Titration of Vinegar (cont'd)
5	Sep 24	Handout A	Net Ionic Equations
	Sep 26	13	Reactivity of Metals with HCl-Method A-Prelab Discussion
6	Oct 1	13	Reactivity of Metals with HCl-Method A
	Oct 3	-----	Lab Test 1 (Exp 5, 8 & H/O C)
7	Oct 8	14	Heat Capacity of Metals
	Oct 10	14	Heat Capacity of Metals-Interactive Lab
8	Oct 15	15	Enthalpy Changes in Chemical Reactions
	Oct 17	15	Enthalpy Changes in Chemical Reactions-Interactive Lab
9	Oct 22	-----	Quantum Mechanics Video
	Oct 24	17	Emission Spectra-Prelab Discussion
10	Oct 29	17	Emission Spectra
	Oct 31	-----	TBA
11	Nov 5	16	Serial Dilution
	Nov 7	16	Serial Dilution (cont'd)
12	Nov 12	18	Ionic & Covalent Bonding
	Nov 14	-----	TBA
13	Nov 19	Handout	Lewis Structures/Resonance Worksheet
	Nov 21	Handout	Valence Bond Theory-Hybridization of Orbitals Worksheet
14	Nov 26	Handout	Intermolecular Forces
	Nov 28	-----	Thanksgiving Holiday (College closed)
15	Dec 3	-----	Check out-Review for Lab Final
	Dec 5	-----	Lab Final (Remaining experiments)

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