



SCIENCE DIVISION

CHEMISTRY 101 SYLLABUS

Class Hours:	Lecture	M, W	11:10 am – 12:25 pm	Location:	MSA 003
	Conference	M, W	12:45 pm – 1:50 pm	Location:	MSA 003
	Laboratory	T, TH	11:10 am – 1:15 am	Location:	MSA 405

Course Professors:

- 1. Dr. Abraha Bahta, for Lecture and Conference**
Office Location: MSB 231/233
Phone: 310-287-4236/7222
Office Hours: T, TH 1:30 pm- 3:30 pm + by Appointment
E-mail: bahtaa@wlaac.edu
- 2. Professor Sharmistha Bandyopadhyaya, Laboratory Instructor**
Office Location: MSB 211
Phone: 310-287-8283 (Office)
310-287-8217 (Lab)
Office Hours: By Appointment
E-mail: Bandyos@wlaac.edu
- 3. Dr. Elisa Atti, Volunteer (Also Chemistry 60 Instructor)**
Office Location: MSB 211
Phone: 310-287-8283 (Office)
310-287-8217 (Lab)
Office Hours: By Appointment
E-mail: Attie@wlaac.edu

Welcome: During the course of the 2015 Fall Semester, you will continue to build upon a body of chemical knowledge you acquired in semesters past when you took other chemistry courses (such as chemistry 60, or equivalents). Topics covered in this course are inter-related and the challenge is to learn and discuss how a current topic is connected to previous ones. Thus, you will be tasked with learning how to methodically solve multi-concept problem sets that are often present at the end-of-chapters we are set to cover. Furthermore, you will continue to improve on your scientific writing, reading comprehension, chemical vocabulary and your critical thinking skills by learning to research, collect and evaluate information to solve chemical problems of greater complexities.

In your laboratory exercises, you will learn to apply various appropriate and effective techniques to undertake scientific inquiries and draw conclusions when analyzing physical and chemical processes. The theoretical and conceptual aspects that govern the experiments in this course are very much inter-twined with the lecture components of the course.

Most importantly, we wish to emphasize that your education is ultimately **YOUR** responsibility. **YOU** determine your level of success. Successful college students are self-motivated and understand the importance of studying the material, coming to class prepared and practicing skills learned. Your Professors shall certainly be supporting your efforts.

COURSE DESCRIPTION Topics covered for this course include: atomic picture of matter; chemical nomenclature, the periodic table and chemical periodicity; chemical reactivity and classification of chemical reactions; stoichiometric calculations; quantum theory and electronic atomic structures. The course also covers topics in thermodynamics and chemical equilibrium.

PREREQUISITE As specified in the College course catalog--- High School chemistry or Chemistry 60 with a grade of C or better. A description can be found on the Electronic Curriculum Development (ECD) System found at <https://ecd.laccd.edu/>. Once you click on "find a course" you will be able to see the official Course Outline of Record.

REQUIRED TEXTS

LECTURE Steven S. Zumdahl, and Susan A. Zumdahl, **CHEMISTRY**, Ninth Edition, Brooks Cole Cengage Learning, 2014.

LAB MANUAL J. A. Beran, ***Laboratory Manual for Principles of General Chemistry***, Tenth Edition, John Wiley & Sons, Inc., 2014.

OPTIONAL SUPPLEMENTARY MATERIALS:

- ***Study Guide*** for **CHEMISTRY**, by Paul B. Kelter. It provides you with a means of self-evaluation in determining how well you understand the materials of each chapter.
- ***Partial Solutions Guide*** for **CHEMISTRY**, by Thomas J. Hummel, Susan A. Zumdahl, and Steven S. Zumdahl. This provides detailed solutions for half of the end-of-chapter exercises. It can be helpful **IF** you look at the solutions only **AFTER** you try the exercises by yourself.
- ***Complete Solutions Guide*** for **CHEMISTRY**, by Thomas J. Hummel et al. It provides detailed solutions for all of the end-of-chapter exercises in **CHEMISTRY**. I have placed a copy on **reserve** in the **library**.
- ***Solving Equilibrium problems with Applications to Qualitative Analysis***, by Steven S. Zumdahl. It provides thorough, step-by-step procedures for solving equilibria related problems.

COURSE STUDENT LEARNING OUTCOMES (SLOs):

Upon satisfactory completion of the course, a student will possess these specific skills, competencies and/or knowledge:

1. -Provide names and formulas of binary and polyatomic inorganic compounds, as well as inorganic acids and bases.

2. -Employ dimensional analysis in solving mathematical computations.
3. -Differentiate various types of reactions.
4. -Write and balance chemical equations, including oxidation reduction reactions.
5. -Describe the nature of solutions.
6. -Prepare solutions of varying level of concentrations using different units.
7. -Solve solution stoichiometry problems.
8. -Determine acid-base strength in neutralization reactions.
9. -Describe the properties of ideal gases and predict deviations from ideality.
10. -Solve gas law problems using the equations for ideal gases as well as the Van der Waals equation for real gases.
11. -Describe the nature of solids and liquids and contrast them with the behavior of gases.
12. -Describe formations of crystals.
13. -Draw and interpret phase diagrams.
14. -Describe the concepts of internal energy and enthalpy.
15. -Apply Hess's Law and standard enthalpies of formation to calculate enthalpies of thermochemical reactions.
16. -Utilize bond energies and calorimetric data to predict whether a reaction would be exothermic or endothermic.
17. -Describe the different models of the atom.
18. -Assign and interpret absorption and emission lines using the Bohr Model.
19. -Apply the wave mechanical model to describe and assign quantum numbers and write electronic configurations of atoms.
20. -Describe the types of chemical bonds.
21. -Draw Lewis structures for simple and multi-centered molecules and ions.
22. -Utilize VSEPR Model to predict geometries of ionic and molecular species
23. -Employ Valence Bond Theory, hybridization, and Molecular Orbital Theory for further concepts in chemical bonding

Course SLOs are located on the West Los Angeles College SLO website. You can visit at http://www.wlac.edu/slo/course_slos.html. Follow the link on the page to the course SLO listing. Locate Science Division on the tabs at the bottom of the window. Click on the tab and locate your course. Besides the CSLOs (Course Student Learning Outcomes), included, for your reference, are also the ISLOs (Institutional Student Learning Outcomes) and the PSLOs (Program Student Learning Outcomes).

Program SLOs

1. Utilize an appropriate and effective scientific methodology to analyze physical and chemical processes in the workplace and in everyday living. (Theme: Scientific process).
2. Explain and analyze the chemical world—as chemistry is a basic science with connections to many careers.
3. Research and interpret scientific literature.

Institutional SLOs (A, B, C, D, F and H)

A. Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.

B. Communication: Effectively communicate thought in a clear, well-organized manner to persuade, inform, and convey ideas in academic, work, family and community settings.

C. Quantitative Reasoning: Identify, analyze, and solve problems that are quantitative in nature.

D. Self-awareness/Interpersonal Skills: Apply self-assessment and reflection strategies to interpersonal, work, community, career, and educational pathways.

F. Technical Competence: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

H. Ethics: Practice and demonstrate standards of personal and professional integrity, honesty and fairness; apply ethical principles in submission of all college work.

EVALUATION AND GRADING GUIDELINES

To ensure that you are keeping up with the readings, and as a means of re-enforcing learning of the lecture and lab materials, various forms of evaluations are employed:

- Frequent quizzes
- Midterm Exams
- Comprehensive Final Exam

The exams will primarily consist of some combination of multiple choice, fill-in, drawing, computation, and short answer questions. All students are responsible for taking all exams. You will be expected to provide SCAN-TRON # 882-ES answer sheets and a No. 2 soft lead pencil. All exams must be taken on the scheduled day and time. No make-up exams will be given for any reason. If a student misses midterm exam, for an excused absence with **a proper documentation**, the **lowest percentage** exam score from **all the other exams** given during the semester (including the final) will be used as the score for the missed exam. A **second missed exam** will be given a score of **zero** for that exam. If a student is absent (excused) for the final exam, he/she will be given an **incomplete**, as long as the student is in good standing going into the final. The incomplete can be made-up by taking the final within a year.

The course will be allotted **1000 POINTS**. The chart below will serve as a guideline on how all points awarded to you in the course are allocated and the **final letter grades** will be assigned according to the percentages shown in the chart.

GRADING

Assignment Category	# of Assign.	Points/Assignment	Total Points	% of Total Grade
Quizzes	6	BEST 4 (50 PTS EACH)	200	20%
Laboratory Reports	13-15	Variant**	200	20%
Mid-Term	3	100	300	30%
Final	1	300	300	300%
Grand Total			1000	100%

880 - 1000 = A	770 - 879 = B	650 - 769 = C	540 - 649 = D	539 and below = F
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** A separate Laboratory Scoring Guide may be provided by the lab instructor. The lab scores will eventually have to be rescaled to 200 points to fit into the overall grading rubric.

CLASS POLICIES

Attendance

Because class discussions and conference drills are an integral part of this course, attendance is mandatory. Up to 3 absences are allowed. After that, you could be dropped. Students are expected to attend every class meeting, to arrive on time and stay throughout the class period; **furthermore**, 3 tardies = 1 absence. Thus, students **may be dropped** from class for a variety of reasons: **3 absences, excessive tardiness**, (or a combination of absences and tardiness that add to 3 absences), and **a no show during the first day of class.**

Preparedness

You are expected to arrive on time. You will come to each class session prepared. You will have your books, notebooks, handouts, pens/pencils, any work that is due, and you will be prepared to participate in topical discussions.

Contacting us

E-mail is the best and quickest way to contact us. Thanks to modern technology, our e-mails are linked to our phones. **If you have a problem, do not let it snowball. Contact us immediately.** You are expected to **ask questions and obtain help from your instructors via email and/or during office hours.**

Recording Devices

State law in California prohibits the use of any electronic listening or recording device in a classroom without prior consent of the instructor and college administration. Any student who needs to use electronic aids must secure my consent. If granted, a notice of consent shall be forwarded to the Vice President of Academic Affairs for approval (WLAC College Catalog). A link to the Catalog is provided:

http://www.wlac.edu/academics/pdf/WLAC_12-14Catalog_Policies.pdf

CAMPUS RESOURCES

If you are having problems, don't let them snowball. Come and talk with me and check out some of the campus resources available to you.

Office of Disabled Student Programs and Services (DSP&S)

Student Services Building (SSB) 320, tel (310) 287-4450.

West Los Angeles College recognizes and welcomes its responsibility to provide an equal educational opportunity to all disabled individuals. The Office of Disabled Students Programs and Services (DSP&S) has been established to provide support services for all verified disabled students pursuing a college education. DSP&S students may qualify for: priority registration, registration assistance, special parking permits, sign language interpreters and assistive technology (WLAC College Catalog).

Instructional Support (Tutoring) & Learning Skills Center

Heldman Learning Resources Center (HLRC) | (310) 287-4486

Improve your math fundamentals and chemistry knowledge with convenient, self-paced computer-aided courses in the Learning Skills Center. Increase your knowledge and learning success: sign up for tutoring in various college subjects (WLAC College Catalog).

Library Services

Heldman Learning Resources Center (HLRC) | (310) 287-4269 & (310) 287-4486

The WLAC Library provides instruction on how to use the online catalog, periodical and research databases. In addition to a large collection of books, periodicals and videos, the WLAC Library has course textbooks which students may use while in the Library. Web access is available in LIRL as well as meeting rooms. The upper floors provide a beautiful view ideal for study (WLAC College Catalog).

COLLEGE POLICIES

Academic Integrity

Each student is expected to do his/her own work on all assignments, lab write-ups, examinations, etc. This is the narrative on **WLAC Policy on Student Academic Honesty** (Adopted by the WLAC Academic Senate June 2006): West Los Angeles College is committed to preparing students to compete confidently and effectively in a rapidly changing, information-driven, technological global community. Students are expected to be honest and ethical. No acceptable rationale for dishonesty can be based on physical, emotional or learning challenges.

The college expects that students to do their own academic work. Students are expected to mentally isolate themselves while taking quizzes and examinations. All responses ought to be based upon studied and memorized information, unless specifically instructed to use reference materials and/or specified notes.

Acceptable academic conduct does not include cheating, plagiarism or any other unethical academic behavior. It is the students' responsibility to know what conduct is academically honest. The following list includes some examples of academic dishonesty:

Plagiarism

- Submitting someone else's scholarly work, such as essays or term papers, as your own.
- Submitting someone else's artistic work as your own. (examples include musical compositions, computer programs, photographs, paintings, drawings)
- Copying, in part or in full, someone else's assignment.
- Including in your work without proper citation the ideas or language of another author.
- Including in your work without proper citation information downloaded from the Internet.

Cheating

- Consulting concealed notes during a quiz, test or exam.
- Using unauthorized prepared materials during a quiz, test or exam.
- Receiving information or answers from another individual during a quiz, test or exam.
- Copying information or answers from a classmate's paper.

- Using electronic devices that have not been authorized by the instructor during a quiz, test or exam.
- Inventing data for a laboratory experiment or case study.
- Submitting work prepared previously for another course.
- Talking during a quiz, test, or exam.

Other examples of academic dishonesty:

- Providing your work for someone else to copy.
- Allowing a fellow student to use answers on your paper during a quiz, test or exam.
- Passing information to a fellow student during a quiz, test or exam.
- Purposely allowing a classmate to copy your original work product, such as answers to assignments, lab reports, term papers, etc.
- Stealing tests or examinations.
- Removing tests or exams from a campus facility without the permission of the instructor.

Violators of the WLAC Policy on Student Academic Honesty are subject to disciplinary action. Depending upon the seriousness of the violation, the disciplinary action may be any or all of the following:

- The instructor may warn the student that the conduct is a violation of the WLAC Policy on Student Academic Honesty.
- The instructor may give a zero score or an “F” grade for the assignment or exam. In the case of assignments which are not averaged into the course grade (such as extra credit assignments) the penalty may be the subtraction of the points the assignment is worth.
- The instructor may report in writing the academic dishonesty incident to the Office of Student Services to be placed in the student’s disciplinary file.
- ◆ The instructor may send a written report to the Office of Student Services about the student’s violation of the Standards of Student Conduct (LACCD Board Rule 9803.12), and request that the college initiate disciplinary action leading to the suspension of the student from the college or the expulsion of the student from the college and the entire district as authorized by LACCD Board Rule 91101.11b. In all instances, the student has the right of due process when charged with a violation of the Standards of Student Conduct. Details of the Student Grievance Procedure may be found in the West Los Angeles College catalog and in the Schedule of Classes in the section on student conduct.

CLASSROOM ETIQUETTE AND CONDUCT

It is very simple! Get to class on time, every time and stay the whole time. When you arrive to class, make sure you have used the restroom, had a chance to eat, check your messages, etc. Walking in and out is rude and disruptive. If you need to leave early, or have some other problem, you need to notify me in advance. In the event that you are more than **ten minutes late, stay out** the whole period. Disrupting the class while

lecture is in progress is unacceptable. Furthermore, while lecture is in progress should you, for any reason leave the classroom; you are not to come back. It is absolutely unacceptable to disrupt the class by being in-and-out of the classroom during the lecture. Bathroom runs should be taken care of prior to coming to class. You might wish to control your liquid in-take in accordance to class duration. [If a **medical condition** exists that mandates the student to go to the bathroom frequently, the student needs to discuss the situation with us privately.]

Cell Phones, iPods, etc

Turn them off and put them away when class begins! Although it may not seem possible, you can survive without talking and texting on your cell phone, or listening to your iPod for 75-90 minutes. Talking and texting on cell phones not only distract you, but they are a distraction to the class. If you are expecting a “very important, i. e. more important than being in class, phone call”, then by all means stay away from class and wait for it! Surely, we all have loved ones we want to engage in a conversation over the phone. I am certain family members and friends can wait for the calls for 75-90 minutes, particularly if you have informed them that you will be in class during such and such time. Common courtesy dictates that a beeper or a ringing cell phone should not disrupt the classroom. According to District code 9803.15, disruption of classes or college activities is prohibited and will not be tolerated. Should that happen, you will be asked to leave the classroom; and there will be a three-way conference that includes the Dean of academic affairs, and the instructors before you are allowed to return to the classroom.

The WLAC Science Division has also adopted the following Policy on Student Conduct in Classroom:

1. Be honest and ethical; follow the rules described in the college’s policy on academic honesty.
2. Arrive before the start of class; wait until the previous class has been dismissed before entering the classroom.
3. Whenever you arrive to class late, open the door *quietly*, enter *quietly*, and close the door *quietly* so as not to disturb the class in session. Then, take a seat near the door, on the side or at the back of the classroom. Never walk in front of the instructor.
4. Do not eat or drink beverages in the classroom.
5. No gum chewing.
6. Sharpen pencils before class starts. Do not sharpen pencils during lecture.
7. Listen carefully when directions and announcements are being given. You are responsible for all information announced whether or not you were absent, tardy, or not paying attention.
8. Turn off or mute cell phones before entering the classroom.
9. Do not answer cell phones during class.
10. Do not leave the classroom during the lecture. Wait until the class is dismissed.
11. No talking during lecture. Do not chat with your classmates at any time during lecture, including during the time your instructor is putting information on the chalkboard.
12. Raise your hand and wait for recognition by the instructor to ask a question during lecture.
13. During the class, do not interrupt the instructor with personal questions. Wait until the class has been dismissed.

LECTURE/CONFERENCE SCHEDULE

<u>WEEK DATE</u>	<u>TOPICS AND PROBLEM SETS (FOR CONFERENCE)</u>
1. Aug 31- Sept 3	<p>Introductory Remarks</p> <p>APPENDIX 1 <i>Mathematical Procedures</i></p> <ol style="list-style-type: none"> 1. Exponential Notation 2. Multiplication & Division; Addition & Subtraction 3. Powers & Roots 4. Manipulating Logarithms 5. Graphing Functions <p>CHAP. 1: CHEMICAL FOUNDATIONS</p> <ol style="list-style-type: none"> 1. Some Fundamental Definitions 2. The Scientific Approach 3. Measurement in Scientific Study <ul style="list-style-type: none"> Features of SI Units Units and Conversion Factors Problem Solving Methodology 4. Uncertainty in Measurement <ul style="list-style-type: none"> Determining Significant Digits Significant Figures in Calculations Precision and Accuracy <p>Problem Set: PP. 34: 27-101 (ODD)</p>
2. Sept 8-10	<p>CHAP. 2: ATOMS, MOLECULES, AND IONS</p> <ol style="list-style-type: none"> 1. Elements, Compounds, and Mixtures 2. Dalton's Atomic Theory 3. Modern View of the Atom 3. Molecules and Ions 5. The Periodic Table 6. Nomenclature <p>Problem Set: PP. 74: 34-102 (EVEN)</p>
SEPT 9	WEDNESDAY QUIZ #1
3. Sept 14-17	<p>CHAP. 3: STOICHIOMETRY</p> <ol style="list-style-type: none"> 1. amu & Atomic & Molecular Masses 2. The Mole & Molar Masses 3. % Composition & other Calculations 4. Empirical & Molecular Formulas 5. Writing & Balancing Chemical Equations 6. Stoichiometric Calculations 7. Theoretical, Actual, and Percent Yields 8. Fundamentals of Solution Stoichiometry <ul style="list-style-type: none"> Solutes, Solvents and Molarity

- Problem set: PP. 128:** 23-125 (ODD)
4. Sept 21-24 **CHAP. 4: TYPES OF REACTIONS & SOLUTION STOICHIOMETRY**
1. The Role of Water as a Solvent
 2. The Composition of Solutions
 3. Aqueous Ionic Reactions
 4. Precipitation Reactions
 5. Acid-Base Reactions and Titrations
 6. Oxidation-Reduction Reactions
 7. Balancing Oxidation-Reduction Reactions
- Problem Set: PP. 181:** 23-109 (ODD)
- SEPT 23 WEDNESDAY QUIZ #2**
5. Sept 28-30
Oct. 1 **CHAP. 5 GASES**
1. Overview of the Physical States of Matter
 2. Gas Pressure and its Measurement
 3. The gas Laws and Their Experimental Foundations
 4. Gas Law Applications
- SEPT 30 WEDNESDAY FIRST MIDTERM (EXAM I)**
6. October 5-8 **CHAP. 5 Cont'd**
5. Gas Laws and Reaction Stoichiometry
 6. Kinetic Theory of gases
 7. Real Gases: Deviation from Ideality
- Problem Set: PP. 216:** 27-113 (ODD)
- CHAP. 7: ATOMIC STRUCTURE & PERIODICITY**
1. Electromagnetic Radiation
 2. The Wave Nature of Light
 3. Emission Spectrum of Hydrogen
 4. The Bohr Model
 5. Quantum Mechanical Model of the Atom
- Problem Set: PP. 321:** 31-125 (ODD)
7. Oct 12- 15 **CHAP. 7: CONTINUED**
1. The Aufbau Principle
 2. Orbital Diagrams of Atoms & Hund's Rule
 3. Electron Configurations and the Periodic Table
 4. Periodic Trends in Properties
- Problem Set: PP. 321:** 32-124 (EVEN)

- OCT 14 WEDNESDAY QUIZ #3**
8. Oct 19- 22 **CHAP. 8 BONDING: GENERAL CONCEPTS**
 1. Atomic Properties and Chemical Bonds
 2. The Ionic Bonding Model
 3. The Covalent Bonding Model
 4. Electronegativity and Bond Polarity
- Problem Set: PP. 382: 23-129 (ODD)**
9. Oct 26- 29 **CHAP. 8 CONTINUED ...**
- OCT 28 WEDNESDAY QUIZ #4**
1. Depicting Molecules and Ions with Lewis Structures
 2. VSEPR Theory and Molecular Shape
 3. Molecular Polarity and **PrSet:PP.**
 MolecuShape
10. Nov 2-5 **CHAP. 9 COVALENT BONDING: ORBITALS**
 1. Valence Bond Theory and Orbital Hybridization
 2. Molecular Orbital Theory and Electron Delocalization
 3. Integrating VB and MO Theories
- NOV 4 WEDNESDAY SECOND MIDTERM (EXAM II)**
11. Nov 9- 12 **CHAP. 9 CONTINUED**
- Problem Set: PP. 418: 15-68 (ALL)**
12. Nov 16- 19 **CHAP. 6 THERMOCHEMISTRY**
 1. The Nature of Energy & Its Units
 2. Heat of Reaction and Chemical Change
 3. Calorimetry
 4. Enthalpy and Enthalpy Changes
- NOV 18 WEDNESDAY QUIZ #5**

13. Nov 23 - 25 **CHAP. 6** **CONTINUED**
 5. Standard Enthalpies of Formation
 6. Hess's Law of Heat Summation
 7. Standard Enthalpies of Reactions
 8. Bond Energies
- Problem Set: PP. 267: 31-93 (ODD)**
NOV 26 THURSDAY COLLEGE CLOSED THANKSGIVING
14. Nov 30, Dec 1- 3 **CHAP. 10: LIQUIDS AND SOLIDS (SELECTIVE TOPICS)**
 1. An Overview of Physical States and Phase Changes
 2. Quantitative Aspects of Phase Changes
 3. Types of Intermolecular Forces
- NOV 30 MONDAY QUIZ #6**
15. Dec 7- 10 **CHAP. 11: PROPERTIES OF SOLUTIONS (SELECTIVE TOPICS)**
 1. Intermolecular Forces in Solution
 2. Solubility as an Equilibrium process
 3. Quantitative Ways of Expressing Concentration
 4. Colligative Properties of Solutions
- DEC 7 MONDAY THIRD MIDTERM (EXAM III)**

MONDAY

DAY

MEMORIAL

CAMPUS CLOSED

FINAL EXAMINATION

**MONDAY, DECEMBER 14, 2015
 (11:30 AM – 1:30 PM)**

TENTATIVE LABORATORY SCHEDULE

INSTRUCTOR: Professor Sharmistha Bandyopadhyaya

LAB MANUAL: J. A. Beran, **Laboratory Manual for Principles of General Chemistry**, Tenth Edition, John Wiley & Sons, Inc., 2014.

Week	Date	Exp. #	Laboratory experiment
1	9/1	CHECK IN	Lab Safety Video
	9/3	Dry Lab	The laboratory and SI
2	9/8	Expt 1	Basic Laboratory Operations
	9/10	Handout	Identification of Substances by Physical Properties
3	9/15	Expt #2	Identification of compounds by Chemical Properties
	9/17	Dry Lab	Inorganic Nomenclature 2a, 2b, 2c
4	9/22	Handout	Separation of Components of mixture
	9/24	Expt #3	Water Analysis: Solids
5	9/29	Expt #5	Percent of water in Hydrated Salt
	10/1	Expt #7	Empirical Formulas
6	10/6	Expt #6	Acids, Bases, and Salts
	10/8	Expt #8	Limiting Reactant
7	10/13	Expt #28	Chemistry of Copper
	10/15	Handout	Gravimetric Analysis of a Chloride Salt
8	10/20	Expt #9	Standardization of NaOH
			Determination of HCl
9	10/27	Expt #9	Vinegar Analysis
	10/29	Expt #10	Balancing Redox Reactions
10	11/3	Handout	Gas Laws (Boyle, Charles, Grahams)
	11/5	Handout	Atomic Structure
11	11/10	Video	Periodic Table and Law (A, B, C & D)
	11/12	Expt #11	Periodic Table and Law (E & F)
12	11/17	Expt #11	Redox Reactions Part A
	11/19	Expt #27	Redox Reactions Part B
13	11/24	Expt #27	Molar Mass of Volatile Liquid
14	12/1	Expt #12	Atomic Spectroscopy-H atom
	12/3	Handout	Writing Lewis Structures
15	12/8	Handout	Calorimeter and Specific heat
	12/10	CHECK OUT	

SOME PERTINENT NOTES ON LABORATORY WORK

ABSENCES: There will be **NO MAKE UP LABS!** A grade of **Zero** will be given for a missed lab session unless you can present a **DOCUMENTED** and **VALID** excuse.

LAB REPORTS: In general, a lab report must include the following:

A. The answers to the pre-Lab questions: Each experiment in the manual is preceded by a pre-laboratory assignment. This assignment has to be completed prior to your coming to the laboratory. The questions in this section are designed to assist you in the performance of the actual experiment. As part of your, lab report the prelab assignments must be discussed and turned-in prior to performing the particular experiment.

Every student must purchase the required Laboratory Manual and bring it to the laboratory every time.

B. Experimental Results/Observations: Make a practice of recording experimental events and data as they occur. Attempts will be made to do preliminary evaluation of your lab work during the laboratory sessions. When you work with a partner (or, on occasion, with partners), you are individually responsible for data collection **contemporaneously**. **No joint lab reports will be accepted** To the extent possible, time permitting, you must try to complete (collection and analysis of experimental data) on the same day you perform the experiment, and submit it for evaluation along with the pre-lab exercises. Otherwise, a lab report is due at **the beginning of the next lab period**. Late lab reports will be severely punished. They will not be accepted if they are **late** more than **two lab periods**.