Cañada College
Science & Technology

CHEM 210
GENERAL CHEMISTRY I

section AAX — CRN 92010
section ABX — CRN 92633

General Chemistry I is the first semester of a two semester series. This 5 unit course will be taught from 08/16/17 through 12/06/17 with a final exam on 12/13/2017. The Fall 2017 class (sections AAX & ABX) with Prof. Nick DeMello (email nick@chemlectures.com) and Prof. Guibo Zhu (email: zhug@smccd.edu)

Course Description:

A comprehensive general chemistry course covering basic concepts, theories and laws of chemistry with emphasis on reasoning and problem-solving skills. Topics include but are not limited to chemical history, nomenclature, stoichiometry, thermochemistry, atomic structure, quantum chemistry, molecular geometry and chemical bonding. The laboratory component of this course introduces students to both qualitative and quantitative techniques appropriate for data collection, exploration and analysis of a variety of chemical systems. This course is transferable to the UC and CSU systems.

Prerequisites:

- Math 120 or 123 (or equivalent). Chemistry is a math-intensive subject, every chapter will require algebra.
- Chemistry 192, high school chemistry, or the equivalent is recommended.

Required Materials:

- A Mastering Chemistry digital access code for online homework.
  Digital access for online homework is being delivered through our bookstore's Inclusive Access program. The digital materials will automatically be charged to your student account at a deeply discounted price.
- Textbook: Nivaldo J. Tro Chemistry, a Molecular Approach, 4rd Ed., Pearson / Prentice Hall.
  The textbook is available at the bookstore for $49. This deeply discounted price is available as long as you don't opt out of the digital content. A digital copy of the textbook is available through Canvas.
- A spiral bound notebook for doing calculations in class, taking notes, and recording observations in lab.
- Pencils (2) with an eraser should be brought to every class.
- Internet access (online homework assignments will be required).
- No laboratory manual needs to be purchased, experiment and other lab activity descriptions will be posted online for students to download, print, and bring to class. No extra copies of the descriptions or worksheets will be available in the lab—be sure to printout and bring your copy.
- Laboratory safety goggles (can be purchased at the campus bookstore) are required for all lab experiments.
- A simple scientific calculator. The calculator must have scientific notation, log and square root functions. Anything more than that is a not needed and will likely slow you down. Keep it simple. Cell phones, PDAs, smart phones, laptops, and other personal electronics devices are not allowed during exams or quizzes and may be damaged by corrosive fumes or spills in a chemistry lab. Do not expect to use one in place of the required simple scientific calculator.

Structure

Lecture & Discussion:

Lecture will be held from **11:10am to 12:25pm (1 hr 15 min) Mon & Wed, in room 114 building 22**. Lecture attendance is required. You must sign the daily lecture attendance sheet to have your attendance recognized — not signing the sheet is the same as not attending class. Students missing more than two consecutive lectures, more than four lectures in total, or any lectures during the first two weeks of class, may be dropped from the class without notice.

Lectures will parallel the content in the class textbook. Prior to lecture, students are required to read the assigned textbook through the section indicated on the course schedule. Students are encouraged to write down any questions that occur during reading for discussion in lecture and to make note of definitions and formulas introduced in the text. The lecture will assume students have read the assigned sections.

Homework:

Homework problems will be assigned for each chapter. Homework assignments will include questions and calculations similar to those found on the midterms and final exam. Most homework assignments will use the online Mastering Chemistry system. Homework due dates are shown in Mastering Chemistry, roughly one per week. The Mastering Chemistry access is being delivered through Canvas. When you login to Canvas and click on any of the Mastering links, you will be taken to the content without having to register, setup an account or enter an access code. If you have any questions about this charge to your student account or if you wish to opt out and have your account deactivated, you will need to go to the bookstore and talk with someone at the counter.

Laboratory:

Lab meetings will be held from **in room 0305 building 18 on Mon & Wed**. Lab attendance is required.

- Section AAX will meet **8:10am - 11:00am (2 hr 50 min)**
- Section ABX will meet **2:10pm - 5:00pm (2 hr 50 min)**

Students must sign the daily lab attendance sheet to have attendance recognized — not signing the sheet is the same as not attending class. This is a separate sign in sheet from the lecture attendance sheet. Two or more absences from lab may result in the student being dropped without notice. There are no make-up labs.

Lab sessions will include chemical experiments, skill workshops, and other activities. Descriptions of each days lab activity are listed on the class website by date. Some lab activities may span two lab periods. Students must review these descriptions, complete any pre-lab questions or preparations prior to lab, and bring printouts of experimental descriptions and/or worksheets to the corresponding lab session. Many lab activities may begin with a pre-lab quiz and require a post lab report. Students unable demonstrate proper preparation may not be allowed to participate in that days lab activity.

Students will work in pairs, groups of four, or individually depending on the activity. Student pairs will be selected on the first day of lab and will share an assigned lab drawer for the semester. Each pair will be responsible for the equipment in their drawer. Each team member is individually responsible for recording all experimental data, including printing out their own copy of any spectra or other results produced in the lab. Each student is individually responsible for producing and submitting their own report for each experiment.

Chemistry labs are dangerous. The chemicals we employ and study are interesting because of their tendency to change one substance into another. In other words, *almost every chemical you work with is either corrosive, toxic, volatile, mutagenic, combustible or otherwise dangerous*. Students are required to view a safety video detailing the college safety policies and achieve a passing grade on the subsequent safety quiz before conducting any experiments. Students who disregard any laboratory safety policy at any time in the semester will be asked to leave the lab and will earn no points for that activity. At the discretion of the instructor, 4 or 8 pts may be removed from the students lab safety score as a one time warning instead.

Safety policies include (but are not limited to):

- Safety goggles must be worn at all times in the lab, unless the instructor specifically tells you otherwise.
- Students must wear clothes that adequately cover legs, arms, and feet. No open toed shoes, no shorts, etc.
- No draping or baggy clothing. Long hair must be tied back. Most lab fires start in loose hair or clothing.
- No food or drink is permitted in the lab or in the halls outside the lab. While there is adequate ventilation in the labs for most practices, many foods readily absorb chemical vapors and can become toxic in a lab environment.

Reports and other assignments are due at the start of the lab period following completion of the activity, unless your instructor specifies otherwise. Students may submit lab reports only for activities in which they participated. Missed labs will result in zero points for that activity.

Exams:

There are four midterm exams (100 points each) and a final exam (160 points). Midterm Exams (4) will be held during lab period (see the class schedule for dates). Students are required to bring a scientific calculator, pencils (2), and an eraser to each exam. No scantron forms or blue books are required. Notes are not allowed during exams. A periodic table will be provided. A missed midterm exam will result in zero points for that exam. There are no make-up exams. Exams cannot be taken early.

The Final Exam is from **11:10am to 1:40pm on Wed Dec 13th in room 114, building 22**. The final exam is comprehensive and is required. Not taking the final exam will result in a failing grade for the course.

Grading

There is no curve. There is no extra credit. Grades are based on a percentage of total points achieved to total points possible. Points are earned for exams, homework, lab workshops, lab experiments and lab safety. The total points expected to be offered this semester is approximately 1,000 — broken down as follows.

400 pts	Midterm Exams (4 exams; 100 pts each)	40%	
160 pts	Final Exam (comprehensive; 160 pts)	16%	Exams 60%
36 pts	Workshop Practice Exams (9 pe's; 4 pts each)	3½%	
200 pts	Homework (11 chapters; 16-20 pts each)	20%	
196 pts	Lab Experiments (best 14 scores; 14 pts each) (includes 4 pt pre-lab quiz & 10 pt post-lab report)	19½%	Projects 40%
8 pts	Lab Safety Quiz	1%	
1,000 pts		100%	

Students who earn 90% or more of the available points will receive an A grade. Students who earn less than 90% but 80% or more of available points will receive a B grade. Students who earn less than 80% but 70% or more of available points will receive a C grade. Students who earn between 70% and 55% will receive a D grade.

Where allowed by campus policy, a "+" prefix will be attached to B and C grades when a student earns points in the top half of each respective range. Students who earn less than 55% of the total possible points or who fail to take the final exam will receive a failing grade for the course. Final Grades will be posted in WebSMART approximately 14 days after the final exam. Final grades are not available prior to being posted in WebSMART.

Resources

Chem Website 210:

Announcements, forums, schedules, outlines, study aids, lab assignments, and other resources can accessed from the class page in Canvas. Mastering Chemistry will be used for most homework and can be accessed from Canvas. The lab experiments can be accessed from the online lab manual (URL below). A public class website can be accessed from the URL below (after week 3 this URL will redirect to the Canvas login page).

Chem website 210 (public) : http://chem.ws/210

Chem 210 Lab Manual: http://chemskills.com/labs

Outlines:

Chapter outlines are posted on the class website. These outlines iterate the specific topics we intend to cover in lecture and lab. Exams and assignments will focus on helping students internalize these topics. Additional topics may be added to the outline during the semester and not all will be tested for on in any given exam or assignment. Students are encouraged to use this course outline in preparing for lecture, reviewing chapters covered, preparing for exams, and determining if this class meets their personal goals in studying chemistry.

Student Learning Center:

The learning center provides computers with internet access. The student learning center is a well lit, distraction free environment ideal for studying alone or in groups. MESA provides **free** chemistry tutoring through the student learning center. Students are strongly encouraged to explore this valuable resource.

Students with Disabilities:

It is the policy of Cañada College to provide reasonable accommodations for individuals with disabilities pursuant to federal law and the college's commitment to equal educational opportunities. It is the responsibility of the student to present documentation to the instructor which clearly outlines all requested accommodations. Special needs students should contact the disability resource center at (650) 306-3259 for disability assessment and to learn of available resources.

Notices

About transitioning into a collegiate environment.

"We teach rose bushes and ivy where to grow. Infants, toddlers, and children are taught right from wrong and other essential lessons. Useful skills, necessary limits, and entertaining tricks are taught to service animals and pets. Teaching is acting upon another to cause them to know something. Out of necessity teaching is generally done without a subjects knowledge, regardless of their consent, and often against their will.

As children become adults, the educational process for them changes. We teach less and ask students to learn more. Required lessons are slowly replaced with opportunities to explore and seek out whatever knowledge a student may choose to make their own. Eventually teaching ends and young adults graduate from even our highest schools, but opportunities to learn may continue. The collegiate environment is not a school. There are no teachers here and enrollment is not required.

If you take this class, you are doing so of your own free will. You are choosing to attempt to master an extremely challenging subject. The faculty and staff of this college will do our best to assist you in your challenge. But passive attendance and simply doing as you are told will not be sufficient. The knowledge proffered here must be taken up, considered, and made your own. You face a difficult challenge. Success is not guaranteed, regardless of effort or intent.

This college also offers you the benefit of having your knowledge tested, graded and certified if you meet a level of mastery determined by the state and college. This certification is not a reward or payment for effort. It is recognition of learning, of what knowledge you succeed in making your own. It is a worthy achievement that few will accomplish. It is something to be proud of."

Academic Integrity Policy (from the Cañada College Catalog)

"As members of the college community, students at Cañada are expected to demonstrate integrity in all academic endeavors. Students are evaluated on their own merits, so they should protect academic integrity at Cañada College and be proud of their achievements.

General principles of academic integrity include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others and to avoid using another's work as one's own. Faculty, with the full support of the College, has the right to take standards of academic integrity into account when assigning grades. All students are expected to understand and abide by these principles.

Any act which gains or is intended to gain an unfair academic advantage or which compromises the integrity of the academic standards of the college may be considered an act of academic dishonesty."

Common forms of academic dishonesty are: plagiarism, fabrication and cheating. Refer to the Cañada College Catalog for detailed definitions. Any student found pursuing any form of academic dishonesty will be subject to disciplinary action according to the guidelines described in the College Catalog.

Student Learning Outcomes

Upon successful completion of Chem 210 course, a student should be able to:

1. Recognize states of matter, classes of matter, properties of matter and discuss units of measurements of mass, length and volume.
2. Identify and name atoms, elements, ions, molecules, ionic compounds and molecular compounds.
3. Recognize chemical reactions and discuss moles and molar mass of elements and compounds.
4. Write laboratory reports, applying the scientific method.
5. Calculate moles and/ or number of molecules (or atoms) of a substance from grams and the formula or molar mass of the substance.
6. Determine the limiting reactant and the amount of excess reactant(s) remaining after the reaction from stoichiometry.
7. Perform conversions between units using the metric system, the English system, or between both.

CHAPTER ONE

The following is a list of important topics for students taking Chemistry 210, by chapters in the course textbook (Chemistry a Molecular Approach 3rd Ed by Nivaldo J. Tro). Exams and assignments will focus on helping students achieve these goals. Additional topics may be added during the semester and not all will be tested for on any given exam or assignment. Students are encouraged to use this outline as a baseline for reviewing chapters, preparing for exams, and determining if Chemistry 210 meets the student's personal objectives in studying chemistry.

CH 1: MATTER, MEASUREMENT AND PROBLEM SOLVING

3 lectures (all sections except 1.5)

Introduction (section 1.1 - 1.2)

- ☐ Know and understand the definitions of chemistry & matter.
- ☐ Be able to describe and apply scientific method.
- ☐ Differentiate between and give examples of a scientific law, hypothesis, observation & theory.
- ☐ Understand what an atom and molecule are, differentiate between them.

Classifying Matter (1.3)

- ☐ Recognize and give examples of the three primary states of matter.
- ☐ Predict macroscopic property changes due to state.
- ☐ Describe differences in molecular behavior due to state.
- ☐ Be able to differentiate between homogenous and heterogeneous samples of matter.
- ☐ Know how to recognize a pure substances and a mixture.
- ☐ Differentiate between elemental and compound substances.

Properties of Matter (1.4)

- ☐ Identify and give examples of properties that are extensive and intensive.
- ☐ Recognize and give examples of chemical and physical properties.
- ☐ Give examples of and understand the difference between chemical and physical changes.
- ☐ Describe physical processes for separating mixtures.
- ☐ Understand the concept of density.
- ☐ Calculate the density of matter and solve problems using the density equation.
- ☐ Qualitatively understand the relationship between density, volume, and mass.

Quantitative Measurement (1.7)

- ☐ Define a measurement and identify it's parts.
- ☐ Understand the definitions of precision and accuracy.
- ☐ Record a measurement with the correct uncertainty (analog & digital).
- ☐ Identify the significant figures and the estimated digit in a measurement.
- ☐ Express and utilize the rules for interpreting the significance of zeroes in a recorded measurement.
- ☐ Be able to express measurements in scientific notation.
- ☐ Identify and give examples of exact numbers.
- ☐ Carry the correct significant figures in multiplication/division and addition/subtraction operations.
- ☐ Use the order of operations to correctly calculate the significant figures in a complex calculation.

Dimensional Analysis & Units (1.6 & 1.8)

- ☐ Know the SI units for length, mass, time, temperature, and count.
- ☐ Know the meaning, abbreviation, and name of the basic ten SI prefixes (Giga to Femto).
- ☐ Use dimensional analysis to convert measurements to different units.
- ☐ Be able to use employ multiple conversion factors in dimensional analysis calculations.
- ☐ Express the correct significant figures in addition, subtraction, multiplication, and division results.
- ☐ Use dimensional analysis to convert conversion factors to different units.

CHAPTER TWO

The following is a list of important topics for students taking Chemistry 210, by chapters in the course textbook (Chemistry a Molecular Approach 3rd Ed by Nivaldo J. Tro). Exams and assignments will focus on helping students achieve these goals. Additional topics may be added during the semester and not all will be tested for on any given exam or assignment. Students are encouraged to use this outline as a baseline for reviewing chapters, preparing for exams, and determining if Chemistry 210 meets the student's personal objectives in studying chemistry.

CH 2: ATOMS & ELEMENTS

3 lectures

History of the Atom, Part 1 (section 2.2 - 2.4)

- ☐ Know the contributions of Democritus, Empedocles, and Aristotle to atomic theory.
- ☐ Understand the law of conservation of mass.
- ☐ Know the law of definite composition and reconcile it with atomic theory.
- ☐ Know the law of multiple proportions and reconcile it with atomic theory.
- ☐ Understand John Dalton's four postulates that formed a basis for atomic theory.
- ☐ Describe the properties of electric charge.
- ☐ Understand J.J. Thomson's contribution to the discovery of sub atomic particles.
- ☐ Understand the differences in charge and mass of alpha, beta, and gamma radiation.
- ☐ Describe Millikan's oil drop experiment and show what two things it demonstrated.
- ☐ Describe Thomson's Plum-Pudding model of the atom and explain the reasoning behind it.
- ☐ Explain the existence of ions using the Plum-Pudding model.
- ☐ Describe Rutherford's gold foil experiment and state it's three most important observations.
- ☐ Understand the nuclear model of the atom and explain it's basis in Rutherford's observations.

Nuclear Structure (2.5 - 2.6)

- ☐ Name the three basic sub atomic particles and differentiate them by charge and mass.
- ☐ Understand the electronic and nuclear structure of cations and anions.
- ☐ Understand the physical significance of atomic number and mass number.
- ☐ Know how atoms of the same element may be different isotopes.
- ☐ Be able to write and interpret isotopic notation of different atoms, isotopes, and ions.

Periodic Table (2.7)

- ☐ Describe how the periodic table was originally organized.
- ☐ Understand that elements of the same family often have similar properties.
- ☐ Identify periods and families (or groups) in the periodic table.
- ☐ Know the family name of groups 1A, 2A, 7A, and 8A.
- ☐ Identify metals, metalloids, and non-metals on the periodic table.
- ☐ Identify the representative elements, transition elements, and inner transition elements.
- ☐ Recognize common properties that distinguish between metals and non-metals.
- ☐ Predict the most common charge on an ion from it's place in the Periodic Table.

Atomic Mass (2.8)

- ☐ Know how an AMU is defined.
- ☐ Calculate the average atomic mass of an element from natural abundance and atomic mass.

the Mole (2.9)

- ☐ Know Avogadro's number (6.022×10^{23})
- ☐ Convert between moles of objects and the number of individual objects.
- ☐ Using a periodic table, find the atomic mass and the molar mass of any element.
- ☐ Calculate the number of atoms in a pure elemental sample of known mass.
- ☐ Use the atomic mass to relate the number of moles of an element to it's mass.

CHAPTER THREE TOPICS

The following is a list of important topics for students taking Chemistry 210, by chapters in the course textbook (Chemistry a Molecular Approach 3rd Ed by Nivaldo J. Tro). Exams and assignments will focus on helping students achieve these goals. Additional topics may be added during the semester and not all will be tested for on any given exam or assignment. Students are encouraged to use this outline as a baseline for reviewing chapters, preparing for exams, and determining if Chemistry 210 meets the student's personal objectives in studying chemistry.

CH 3: MOLECULES, COMPOUNDS, & CHEMICAL EQUATIONS

3 lectures (all sections except 3.12)

Chemical Bonds (3.1 - 3.2)
- ☐ Understand the differences between a mixture and a compound.
- ☐ Know the difference between ionic, covalent, and metallic bonds.
- ☐ Describe the structural differences between ionic and molecular compounds.

Chemical Formulas (3.3)
- ☐ Know how to interpret and write chemical formulas.
- ☐ Differentiate between three types of chemical formula (molecular, empirical, and structural).

Compound & Element Structure (3.4)
- ☐ Recognize monatomic, diatomic, and a polyatomic particles (molecule, atom, or ion).
- ☐ Identify the seven diatomic elements and the two polyatomic elements (P_4 and S_8)
- ☐ Identify a compound as ionic or molecular.
- ☐ Define a formula unit.

Nomenclature (3.5 - 3.7)
- ☐ Name elements and ions given their chemical formula.
- ☐ Be able to write the chemical formula of elements and ions.
- ☐ Know the definition and give examples of binary compounds.
- ☐ Understand the two base rules for naming all binary compounds.
- ☐ Be able to write the chemical formula for a binary compound, given its name.
- ☐ Name a binary compound that contains a metal which forms only one cation.
- ☐ Name a binary compound w/ a metal that can form multiple ions (classic and stock methods).
- ☐ Name a binary compound that contains two non-metals.
- ☐ Name binary compound or binary acid that contains hydrogen and a non-metal.
- ☐ Name and write the formula for the ammonium, hydroxide, peroxide, and cyanide ions.
- ☐ Name and write the formula for the polyatomic oxy-ions of P, S, C, N, Cl, Br, and I.
- ☐ Name and write the formula for the polyatomic oxy-ions of P, S, C, and peroxide with H.
- ☐ Name and write the formula for ionic compounds composed of polyatomic ions.
- ☐ Name and write the formula for the acids formed from the oxy-ions of P, S, C, N, Cl, Br, and I.

Formula Mass & Composition (3.8 - 3.10)
- ☐ Determine the molar mass of a compound from its chemical formula.
- ☐ Use the molar mass to relate the number of moles of a compound to it's mass.
- ☐ Calculate the theoretical percent composition of a compound form it's formula.
- ☐ Calculate experimental percent composition of a compound from experimental data.
- ☐ Calculate an empirical formula from the percent composition of a sample.
- ☐ Calculate the molecular formula from an empirical formula and a molar mass.

Introducing Chemical Equations (3.11)
- ☐ Understand the symbols used in a chemical equation.
- ☐ Translate a description of a chemical reaction into a chemical equation.
- ☐ Interpret a chemical equation to describe a chemical reaction.
- ☐ Recognize single displacement, double displacement, combination, and decomposition reactions.
- ☐ Balance a chemical equation.

Cañada College
Science & Technology
Fall 2017 Schedule

GENERAL CHEMISTRY I

CHEM 210

SECTIONS AAX & ABX

(SUBJECT TO CHANGE — 05.11.17)

Week	Date	Day	Lecture Chapter	Lecture Topics 11:10am-12:25pm	Read Through		Laboratory Activity Sec AAX — 8:10am-11:00am | Sec ABX — 2:10pm-5:00pm	
Week 1	14-Aug	M	Flex Day — Campus Closed — No Classes					
	16-Aug	W	1	Ch 1: Classification/Properties of Matter	1.4		Orientation, Homework Intro & Lab Check-In	
Week 2	21-Aug	M	1	Ch 1: Measurement & Significance	1.8	E1	Experiment: Classifying Matter	
	23-Aug	W	1/2	Ch 1: Unit Standards / Ch 2: Atomic Theory	2.4		Workshop: Dimensional Analsyis	W1
Week 3	28-Aug	M	2	Ch 2: Flavors of the Atom	2.7	E2	Experiment: Properties of Matter	
	29-Aug		Last Day to Add Class or Drop with Partial Refund					
	30-Aug	W	2	Ch 2: Atomic Mass & the Mole	2.9		Workshop: Counting Atoms	W2
	4-Sep		Last Day to Drop Class w/out W (withdraw)					
Week 4	4-Sep	M	Labor Day Holiday — No Classes					
	6-Sep	W	3	Ch 3: Chemical Formulas	3.4	E3	Experiment: Avogadro's Number	
Week 5	11-Sep	M	3	Ch 3: Nomenclature	3.7		EXAM #1 - Ch 1 & 2: Matter & Measurement	
	13-Sep	W	3	Ch 3: Molecular Composition	3.11	E4	Experiment: Empirical & Molecular Formula	
Week 6	18-Sep	M	4	Ch 4: Stoichiometry & Limiting Reactants	4.3		Workshop: Nomenclature	W3
	20-Sep	W	4	Ch 4: Solubility & Concentration	4.9	E5	Experiment: Elemental Analysis	
Week 7	25-Sep	M	4	Ch 4: Electrolytes & Ionic Equations	4.12		Workshop: Stoichiometry & Concentration	W4
	27-Sep	W	5	Ch 5: Pressure & the Gas Laws	5.3	E6	Experiment: Acetic Acid Titration	
Week 8	2-Oct	M	5	Ch 5: Gas Stoichiometry	5.7		EXAM #2 - Ch 3 & 4: Formulas & Equations	
	4-Oct	W	5	Ch 5: KMT & Real Gases	5.10	E7	Experiment: Net Ionic Reactions	
Week 9	9-Oct	M	6	Ch 6: Energy & Heat	6.4		Workshop: Gas Laws	W5
	11-Oct	W	Flex Day — Campus Closed — No Classes					
Week 10	16-Oct	M	6	Ch 6: Enthalpy	6.7	E8	Experiment: Gas Stoichiometry	
	18-Oct	W	6	Ch 6: Hess's Law	6.10		Workshop: Thermochemistry	W6
Week 11	23-Oct	M	7	Ch 7: Radiant Energy	7.4	E9	Experiment: Heat of Reaction	
	25-Oct	W	7	Ch 7: the Bohr Atom	7.5		EXAM #3 - Ch 5 & 6: Heat & Gas	
Week 12	30-Oct	M	7	Ch 7: the Schrödinger Eqn	7.6	E10	Experiment: Emission Spectra	
	1-Nov	W	8	Ch 8: Electron Configuration	8.4		Workshop: Quantum Mechanics	W7
Week 13	6-Nov	M	8	Ch 8: Periodicity Explained	8.7	E11	Experiment: Flame Test	
	8-Nov	W	8	Ch 8: Metallic Character	8.9		Workshop: Electron Configuration	W8
Week 14	13-Nov	M	9	Ch 9: Bonding	9.4	E12	Experiment: Magnetochemistry	
	15-Nov		Last Day to Drop Class with "W"					
	15-Nov	W	9	Ch 9: Electronegativity	9.8		EXAM #4 - Ch 7 & 8: Quantum Atomic Structure	
Week 15	20-Nov	M	9	Ch 9: Formal Charge	9.11	E13	Experiment: Recycling Aluminum	
	22-Nov	W	10	Ch 10: VSEPR	10.4		Workshop: Lewis Structures	W9
Week 16	27-Nov	M	10	Ch 10: Molecular Polarity	10.7	E14	Experiment: Synthesis of Aspirin (part 1)	
	29-Nov	W	10	Ch 10: Valence Bond & MO Theory	10.8		Experiment: Synthesis of Aspirin (part 2)	
Week 17	4-Dec	M	11	Ch 11: Intermolecular Forces	11.5		Workshop: VSEPR & Molecular Shape	W10
	6-Dec	W	11	Ch 11: Phase Change	11.9		Lab Check-Out & Review	
Finals	13-Dec	W	**FINAL EXAM (Comprehensive) — Wed Dec 13 — 11:10-1:40 PM**					
Grades	27-Dec		(Class Grades Posted in WebSMART 14 days after FINAL)					