

ORANGE COAST COLLEGE

Chemistry 130: Introductory Chemistry Summer 2009 4 Units 6 weeks: 06/08 – 07/16/2009

Lecture Section 10134: M, T, W, Th: 8:00 am – 10:05 am Room: CHEM 219

Lab Section 10138: M, T, W, Th: 10:20 am – 12:25 pm Room: CHEM 126

Instructors

Dr. J. Mickey Laux (weeks 1, 5 & 6)

Office Phone and Voice Mail: (714) 432-0202, ext #21135

Website: <http://occonline.occ.cccd.edu/online/jmlaux>

e-mail: jmlaux@mail.occ.cccd.edu

Office Hours: 7:30 am to 8:00 am (Room 231) M/T/W/Th

Ms. Lisa Visco (weeks 2, 3, & 4)

Website: Blackboard

e-mail: lvisco@occ.cccd.edu

Office Hours: Immediately following Lab (Room 126) M/T/W/Th

Course Description

Chemistry 130 is a study of the basic principles of chemistry designed primarily for the students intending to take Chemistry 180/185, but who need more preparation. The chapters to be covered include 1 through 18. Intermediate algebra with a C grade or better is a prerequisite.

Required Texts

Introductory Chemistry Text, Zumdahl, Steven S., D.C. Heath & Company, 6th Edition.
Solutions Guide is optional.

Grading

During the semester there will be one lab experiment or worksheet set each day, 1 or 2 Homework assignments for each chapter (none dropped), 7 quizzes worth 45 points each (with lowest quiz grade dropped), a Midterm and a cumulative Final Exam. All overall totals are scaled to the appropriate point totals below.

Grading will be determined by the following scale:

90 - 100%	A	Quizzes:	270 pts
77 - 90%	B	Midterm:	200 pts
65 - 77%	C	Labs:	200 pts
50 - 65%	D	Homework:	130 pts
0 - 50%	F	<u>Final:</u>	<u>200 pts</u>
		Total:	1000 pts

Summer moves FAST, so punctuality and attendance are huge, and 10 extra credit points will be awarded to all who never miss class (both lecture and lab) and are never late (both lecture and lab). Another 10 pts are available for any who turn in ALL assignments on time (including labs) and take all quizzes and exams. NO exceptions!

Last day to withdraw with a full refund: June 9th.

Last day to withdraw without a "W": June 17th.

Last day to withdraw with a "W": July 7th.

Midterm and Final Exam

These 200 point exams will cover all material discussed in lecture and lab up to that point. The Final will weigh more on the material covered after the Midterm, except for concepts used throughout the semester. All equations and constants necessary for the exams are provided. A Periodic Table along with any other added tables are stapled to the back of the exams. These are very long (but easy, of course!), so plan to use the entire lecture period. Bring calculators and a Scantron form (a section of the exams are multiple choice and True/False).

Quizzes

There will be a total of seven quizzes given, covering key material and worth 45 points each. The lowest grade is dropped at the end of the semester. They are at the beginning of lab, so be on time! Quizzes are about 20 to 25 minutes in length, with lab resuming after. There are no make up quizzes allowed for ANY reason (this is why a quiz is dropped, in case of emergencies or other situations). Bring a calculator! Show all work for partial credit.

Labwork

There will be one experiment or worksheet set (or both!) per lab session. The total is curved to 200 pts at the end of the semester. The hands on experience is a must for understanding the lecture material, so no lab grades are dropped. It is VERY important to be on time for labs since the first few minutes are used to explain procedures and safety issues. You could endanger others if you miss this, and you may be kicked out of lab for that day.

The beginning of each lab period is used to touch up on lecture material, take quizzes, go over the experiment and cover the prelab assignments. All experiments must be completed in lab and cannot be taken home.

Dr. Laux and Lisa Visco will be covering the lab sections this summer. When finished with each lab, you should clean up your area and lock your items up. There are no make-up labs for any reason for safety concerns.

Labs are critical for understanding material, and if you miss more than two labs, the BEST grade you can get is a "C". If you miss 4 labs or more, you will automatically receive a failing grade (I'd drop instead if I were you!).

More on lab procedures and safety issues will be discussed the first lab session.

Homework

There will be 1 or 2 homework (HW) assignments assigned for each chapter (assigned after we finish each chapter in lecture), all being due the next class meeting after being assigned (good idea to go to class!). These are very critical to doing well in this class!!!! Practice makes perfect, right??? Late work is not accepted for any reason, so if you will be missing class, have a friend turn it in or drop it off early. Include your name and ID# on your HW as well as the Chapter #. Each HW is worth varying points, with the overall total curved at the end of the semester to 130 points (13 %).

All assigned problems and relevant reading will be posted on my website under "assignments" on the day it is assigned. There may also be handouts or postings with specific problem sets from the text.

For calculation-based questions, all work must be shown to receive credit. I am looking for how you solve problems and set up equations in the HW, not necessarily your correct answer every time.

Cheating (or Academic Dishonesty to be politically correct)

Bad news!! If caught cheating on an exam or quiz, you will receive a failing grade. In the lab, any copying of data is plagiarism and will result in a zero for that lab. You're paying to learn and apply that knowledge to your life and nobody ever learned by cheating. Naughty naughty!!

Tips

Come to class and take NOTES!! Bring a calculator to class everyday for when we cover problems during lecture. Work in groups if necessary for the homework assignments. Keep on top of things (reading, homework) and it will be smooth sailing. Fall behind and it'll be tough. ASK QUESTIONS if you don't understand. Use and abuse office hours and use email if necessary.

Beware! We move VERY fast in the summer, so dedicate 6 weeks and focus!

Tentative Syllabus Summer 2009 CHEM 130

M, 6/8	Syllabus; Ch. 1: The Scientific Method; Ch. 3: Matter Classification
T, 6/9	Ch. 3: Chemical Properties; Ch. 4: Elements, The Periodic Table, Atomic Theory & Structure
W, 6/10	Ch. 4: Isotopes, Ions, Ionic Compound Formation
Th, 6/11	Quiz #1 (In Lab); Ch. 5: Ionic Compound Nomenclature, Polyatomic Ions; Writing Formulas
M, 6/15	Ch. 5: Naming Acids and Covalent Compounds; Ch. 6: Writing and Balancing Chemical Eqns
T, 6/16	Ch. 7: Combustion, Synthesis, Decomposition Rxns, Solids and Solubility Rules,
W, 6/17	Quiz #2 (In Lab); Ch. 7: Precipitation Reactions, Ionic Equations
Th, 6/18	Ch. 18: Oxidation States & Redox Rxns; Ch. 7: Redox Reactions, Acid Reactions (some Ch. 16)
M, 6/22	Ch. 8: Atomic mass, Isotopic %, the Mole, Avogadro's #, Molar Mass
T, 6/23	Quiz #3 (In Lab); Ch. 8: % Composition, Empirical Formulas; Ch. 9: Stoichiometry
W, 6/24	Ch. 9: More Stoichiometry!, Limiting Reagents, % Yield
Th, 6/25	Ch. 11: EMR, Line Spectra, Quantum Mechanics, Bohr Model, Orbitals, Electron Configurations
M, 6/29	MIDTERM!!! (Chapters 1 – 9 and part of 18). No make ups!!
T, 6/30	Ch. 11: Periodic Trends; Ch. 12: Bonds, Lewis Diagrams, Molecular Shape, VSEPR Model
W, 7/1	Quiz #4 (In Lab); Ch. 12: Electronegativity, Bond Polarity, Molecular Polarity and Effects
Th, 7/2	Ch. 13: Gases and Pressure, Gas Laws and Equations, STP, Partial Pressures
M, 7/6	Quiz #5 (In Lab); Ch. 13: KMT; Ch. 14: IM Forces, Liquids, Vapor Pressure
T, 7/7	Ch. 14: Solids & Alloys; Ch. 10: Energy; Heating Curves
W, 7/8	Ch. 15: Solutions, Solubility vs. T and P, Concentration
Th, 7/9	Quiz #6 (In Lab); Ch. 15: Mass %, Molarity and Normality
M, 7/13	Ch. 17: Collision Model, Chemical Equilibrium, Le Chatelier's Principle
T, 7/14	Quiz #7 (In Lab); Ch. 17: Equilibrium Calculations, K_{sp} ; Ch. 16: Acids & Bases,
W, 7/15	Ch. 16: pH and Buffers
Th, 7/16	Cumulative Final Exam

CHEM 130 STUDENT LEARNING OUTCOMES:

The student will be able to:

1. Use unit equations and simple algebraic methods to solve computational problems in the areas of unit conversion, specific heat, stoichiometry, gas laws, and solution concentrations.
2. Write and balance total ionic and net ionic equations for chemical reactions, including predicting the products of ionic reactions and writing the correct ionic formulas.
3. Apply the principles of electron configurations, Lewis structural theory, and VSEPR theory to predict the structure and three-dimensional shape of simple inorganic and organic species from the chemical formula.
4. Use inorganic nomenclature rules to provide a systematic name for a chemical formula or a chemical formula from a systematic name.
5. Apply safe and proper laboratory techniques to make accurate, reproducible measurements of masses and volumes, and accurate, reproducible experimental observations.

METHOD OF STUDENT EVALUATION:

Skill demonstrations of laboratory procedures; a timed final exam and at least three prior timed exams involving written explanations and descriptions, and problem solving.

CHEM A180 STUDENT LEARNING OUTCOMES:

The student will be able to:

1. Use unit equations and algebraic methods to solve computational problems in the areas of unit conversion, stoichiometry, gas laws, thermochemistry, and solution concentrations.
2. Apply the principles of electron configurations, Lewis structural theory, VSEPR theory, molecular orbital theory, and valence bond theory to predict the structure, bonding, three-dimensional shape, and molecular polarity of simple inorganic and organic species from the chemical formula.
3. Use the atomic theory and kinetic molecular theory to explain the gas laws and the properties of ideal and non-ideal gases.
4. Write and balance total ionic and net ionic equations for chemical reactions, including predicting the products of ionic reactions and writing the correct ionic formulas.
5. Apply safe and proper laboratory techniques to make accurate, reproducible measurements of masses and volumes, and accurate, reproducible experimental observations.

METHOD OF STUDENT EVALUATION:

Skill demonstrations of laboratory procedures; a timed final exam and at least three prior timed exams involving written explanations and descriptions, and problem solving.