Long Beach City College
Fall 2011
CHEM 2: Section70464 Instructor: J.F. Myrtle, PhD

Lecture: Mon: 2:00 pm – 4:50 pm D 334
Wed: 2:00 pm – 2:20 pm D 334
Lab: Wed: 3:00 pm – 4:50 pm D 304

Contact: jmyrtle@beachchemistry.com
jmyrtle@lbcc.edu
Website: www.beachchemistry.com

Prerequisite: MATH 110 or MATH 110B or MATH 880 or qualification through the math assessment process or one year high school Elementary Algebra with a grade of B or better as reflected in the second semester grade.

Course Description: 4.0 hours lecture, 2.0 hours laboratory per week
Chem 2 is a prerequisite for CHEM 1A and prepares science or pre-professional majors, who are required to take CHEM 1A but lack adequate preparation. This course provides basic knowledge and problem solving techniques necessary for CHEM 1A-B. Formula and equation writing, basic gas laws and stoichiometry are stressed. Successful completion of CHEM 2 with a grade of "C" or better fulfills the prerequisite for Chem 1A. Note: Students should be aware that many schools (CSULB included) do not allow credit for CHEM 2, once CHEM 1A (or the equivalent course at that school) has been successfully completed.
This course may be taken credit/no credit. Note the schedule deadline for so designating.

Required Materials
- Textbook: "Foundations of College Chemistry", Hein & Arena. Alternate edition or standard edition, 13th ed., John Wiley & Sons Inc.
- Lab Manual: Experiments for Chem 2, published at LBCC.
- Safety goggles: Goggle style, available in LBCC bookstore
- Calculator: Basic scientific model with "log" function and scientific notation
  Note: Programmable calculators are not allowed on tests.

Recommended:
- Student solutions manual for textbook problems strongly recommended
- Internet access with a PC for access to the class web site: www.beachchemistry.com
- 3 ring binder, 2" size with pockets (flat-sided rings highly recommended), set up with dividers labeled as follows: Class Notes; Handouts; Exercises; Quizzes; Tests, Labs

Assessment Activities

Exams (4 @ 100 points)	400
Quizzes (10 @ 10 points)	100
Laboratory Experiments	200
Exercises	100
Comprehensive Final Exam	200
Course Total	1000

See course schedule for dates of exams and quizzes. All exams are closed book and notes.
Each exam covers the materials since the previous exam, but the final exam is cumulative.

Grading Scale
Course letter grades will be based on the following percentage of total points possible.
A = 88 – 100 % B = 78 – 87 % C = 65 – 77 % D = 55 – 64 % F = below 55 %

Note: Because chemistry is a laboratory science

- Passing work (55% or more of possible points) in the laboratory portion of the course is required in order to earn an overall grade of "C" or higher, regardless of test and quiz scores.
- A minimum of 65% in the lecture portion of the course (quizzes, tests, final exam) is required in order to earn an overall grade of "C" or higher, regardless of lab scores.

Quizzes and Exams:

- Be present and on time for all exams and quizzes. Late arrivals will *not* be given extra time.
- There are no make-up exams, quizzes, or laboratories. Missed exams will result in a zero, except in rare circumstances. Only valid, provable emergencies with prior notification of instructor via e-mail prior to a lab will be considered. See the instructor immediately on returning.
- Exams dates are posted in the schedule and last about one hour. If given at the start of class, lecture will follow the exam. They are closed book and notes. A Periodic Table without element names will be provided.
- Quizzes are given weekly at the start of the period. There are no make-ups.
- It is your responsibility to come to class every day prepared with pencils, an eraser and a permitted calculator. Calculators may not be shared during exams and quizzes.

Homework:

- **Textbook Problems**: Within-chapter Practice exercises and even-numbered end-of-chapter problems are routinely assigned according to a separate schedule. Working them is essential to gaining understanding and preparing for tests. Practice problem answers are at the end of the chapter. **Answers to even-numbered problems are provided in Appendix V at the end of the book**. *These will not be collected.* They are a necessary investment in, and a requirement, for your success.
- **Class exercises**: Each chapter will include exercises using instructor-provided worksheets handed out in class. Some may be assigned as homework to be turned in for grading at the start of the next class or as the instructor directs. Such work, if turned in late, will be penalized.
- **Lab Reports**: These are collected for grading and are prior to the start of the next class period unless otherwise directed.

Study Materials: Chem 2 Website

- **Lecture Notes** page: Check the Chem 2 web page (http://beachchemistry.com/?page_id=3) for **Class Notes** used in class by the instructor for each chapter. Note that many supplemental materials and/or links to helpful animations are frequently listed on the web page for each chapter. In-class worksheet exercises may also be linked along with the answers. Lecture notes are password protected. You must obtain the password from the instructor.
- **Current Comments** page: Check for updates or changes to current assignments for each chapter. Exam grades may also be posted on a "Grades" page. This page is password-protected; results will be listed by student ID number.

Laboratory and Lab Safety

Note: There are no make-up labs. Missed labs receive a zero.

- Read the lab before entering the laboratory in order to finish the lab and work efficiently. Bring the lab manual for every lab.
- Safety requires that you be present in class for the pre-lab discussion. If you come late to a laboratory class you must first report directly to the instructor; do not start lab work until given instructor approval.

- You are expected to be familiar with all given safety rules and to follow them at all times while working in the laboratory. Failure to do so may result in dismissal from the lab and a zero on that lab report.
- If you make a mistake during an experiment, check with the instructor before doing anything else. Do not start over without instructor approval. Do not attempt to use another person's data.
- Record all appropriate qualitative and quantitative data directly onto the lab report form at the time the data are observed. Do not write data on scratch paper or any place other than your lab report. Make corrections by drawing a ~~single line~~ (no erasures, no white out, no scribble outs) through the incorrect data and writing the new data next to it. Calculations or results of other work may be corrected by erasing.
- Lab work will usually be conducted with a partner. However, laboratory reports should be written up independently.
  ***Note**: copying another person's work is considered plagiarism by both parties. I look for and easily find copying. The penalty for plagiarism is harsh.*
- Keep your lab report reasonably neat; it must be easily readable.
- Unless announced otherwise, lab reports are due ***before*** the beginning of the next class after the lab. Pages must be ***stapled*** in numerical sequence. Late lab reports will not be accepted. Being tardy or absent is ***not*** an excuse for late lab reports.
- You will be required to wear approved safety goggles in the laboratory while certain experiments are in progress. Shoes must be stable (no heels) and securely fastened to your feet. Long hair should be pulled back. No sandals or open-toed shoes. Don't even think about eating or drinking in the laboratory. Food and drink are not allowed in Building D.

Lab Drawers - During the first day of class you and your partner will be assigned a lab drawer and will "check-in" (verify and sign for the contents of the drawer). If anything is missing or broken when you check the drawer back out, you will have to pay for it. If you should decide to withdraw from the course, you will need to check out of your locker. Failure to do either may result in a lab charge, which will prevent registration for future classes and put a hold on all transcripts.

Dropping the course: Failure to drop the course by the last date to drop with a "W" will result in a grade of "F". You, not the instructor, are responsible for dropping the course.

Attendance:
Missing a single class puts you at a serious disadvantage and your grade in jeopardy. The class is fast paced and the topics are challenging. Each chapter builds on the foundations of the previous chapters, and with 17 chapters covered in 18 weeks, many chapters will be covered in a single class session. Attendance is taken. It is part of your class record. You are responsible for the information and assignments you miss when you are absent. Repeated absences from lectures (more than 3 total) will result in an instructor-initiated drop of the student.

Student Conduct:
Behavior: Polite and respectful behavior is expected at all times. Cell phones must be turned off. Disruptions such as being tardy, inappropriate talking, texting, ringing of a cell phone, listening to music devices, sleeping, etc. must be avoided.
Honesty: Copying another person's exercises, labs, or homework is plagiarism and a path to failure in this course. On an exam or quiz, I look for cheating and it will be dealt with harshly.

Succeeding:
Remember, this class is your investment in *you*, and you alone get to determine the return on investment. You must do the following if you are to succeed in this class:

- **Organize**: Create a 3-ring binder with tabs to organize your class work, as suggested in "recommended" materials, and organize a quiet area to work.
- **Study chemistry *daily***; 14 – 16 hours per week should be the norm.
- **Read ahead** in the text to gain an understanding of material coming up in the next class. The class lectures are designed to *supplement* your textbook readings. Lectures do not necessarily cover everything covered in the textbook and assigned homework.
- **Ask questions**: Use the class to solidify your understanding, to clear up the things you were uncertain about, and to help you outline what are the most important things to know. The only dumb question is the one not asked.
- **Work problems**: Solving problems both in the chapter readings and those assigned by the instructor are ***fundamental*** to success in this class.
- **Chem 20 website**: Go to the web site (http://www.beachchemistry.com/?page_id=453) for Dr. Myrtle's Chem 20 class for access to all the instructor's classroom lecture materials, and also to many addition resources, exercises, and links to supplemental animations.
- **Come prepared**: Bring pencils, paper, an eraser, an approved calculator, and all required class materials at all times. Be on time.
- **Organize study groups**: gather informally with classmates before or after class to study assigned problems. During class sessions, there will be many opportunities to work with other classmates in small groups while working in-class assignments. Plan to seek out others to work with when appropriate or indicated by the instructor.

Course Objectives:
During the course, students will**:**

1. Use scientific notation and round-off calculations based on error and significant figures.
2. Recognize metric units and common prefixes as well as using conversions factors to convert from one unit to another
3. Recognize and write symbols for elements and use them to name and write chemical formulas.
4. Balance chemical equations and perform quantitative stoichiometric calculations involving chemical reactions.
5. Perform calculations involving gas laws which would require understanding of the concepts of direct and inverse proportions.
6. Perform calculations involving concentration of solutions, including using percent as a proportionality factors.
7. Determine solubility qualitatively from the properties of solvents and solutes.
8. Identify strong, weak, and non-electrolytes qualitatively as well as write the corresponding chemical reaction.
9. Determine pH and classify solutions as basic acidic, or neutral.
10. Identify the element oxidized or reduced in a redox reaction.

Student Learning Outcome (SLO)
Chem 2 student learning outcomes – On successfully completing Chem 2, you should be able to...

- Differentiate between verifiable scientific facts and unsupported opinions.
- Appraise the role of chemistry in providing a basic scientific understanding of the physical world.
- Given the chemical formulas of reactants, students will be able to write the correct formula of products, identify the reaction type, and balance the equation.
- Calculate the basic quantitative relationships between the various reactants and products in a chemical system by applying the concepts and/or laws of chemistry.
- Recognize and use safe laboratory practices.

Chemistry 2 Class Schedule – Fall Semester, 2011 Dr. Myrtle

Wk / Date	Chapter / Lecture Topic	Laboratory	Activity
1. 8/15	1. Introduction to Chemistry 2. Measurement and significant figures	Lab check-in 1. Measurement and Density, Part 1	Lab check-in
2. 8/22	3. Elements and Compounds 4. Properties of Matter	1. Measurement and Density (cont'd), Part 2	Quiz 1 (Ch. 2)
3. 8/29	4. (Cont'd) Energy 5. Atomic Theory	2. Separation of a Mixture	Quiz 2 (Ch. 3, 4)
4. 9/7 (Wed)	6. Nomenclature	3. Nomenclature (worksheet)	Quiz 3 (Ch 5)
5. 9/12	**Exam 1 – Chapters 2 - 5**		
	7. Quantitative Composition of Compounds	4. Percent Water in a Hydrate	Quiz 4 (Ch 6)
6. 9/19	8. Chemical Equations 9. Stoichiometry (start)	Extended lecture	Quiz 5 (Ch 7)
7. 9/26	9. Stoichiometry cont'd	6. Stoichiometry and % Yield	
8. 10/3	10. Modern Atomic Theory • Quiz 7 (Ch. 9)	7. Single Replacement Reactions	Quiz 6 (Ch. 8, 9)
9. 10/10	**Exam 2 – Chapter 6, 7, 8, 9**		
	11. Chemical Bonds	8. Double Replacement Reactions	
10. 10/17	11. Chemical Bonds cont'd	9. Lewis Structures (worksheet)	Quiz 7 (Ch 10)
11. 10/24	12. Gases	10. Graham's Law of Diffusion	Quiz 8 (Ch 11)
12. 10/ 31	**Exam 3 – Chapters 10, 11**		
	13. Water and Properties Liquids	12. Thermochemistry	
13. 11/7	14. Solutions	11. Solutions	Quiz 9 (Ch 12)
14. 11/14	15. Acids and Bases	13. Acid / Base Titration	Quiz 10 (Ch13,14)
15. 11/21	**Exam 4 – Chapters 12, 13, 14**		
	16. Chemical Equilibrium	Extended lecture	
15. 11/28	16. Chemical Equilibrium cont'd	14. Le Chatlier's Principle	Quiz 11 (Ch 15)
16. 12/5	17. Oxidation Reduction to 17.3		
12/14	**---------- Comprehensive Final Exam D334 ----------**		

Note: Answers to all even-numbered textbook problems are found in Appendix V.

IMPORTANT DATES TO REMEMBER

Drop deadline with a refund of enrollment fees:…..…….. August 28
Last day to drop without a W:…….. Sept 5
Last day to use a permission number:…….. Sept 5
Last day to change their grading basis (pass – no pass):….. Sept 18
Last day to drop and receive a "W" mark:…… Nov. 20