Chemistry 131, 3 units, CRN 87075
MWF, Bilger 150, 10:30 am to 11:20 am

INSTRUCTOR: Dr Daniel Brayton (dbrayton@hawaii.edu)
OFFICE: Bilger 247B, email is the best way to contact me.
OFFICE HOURS: Mon and Wed 12:30 pm to 2:30 pm, or by appointment
EFFECTIVE DATE: starting January 13, 2014

CATALOG DESCRIPTION

Basic principles of inorganic chemistry with an emphasis on problem solving. First course of a two-course sequence designed to meet the one-year General Chemistry requirement for pre-med, science and engineering majors. Topics include chemical calculations, electronic structure, chemical bonding, states of matter and solutions.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

- Use the mole concept in solving stoichiometry problems involving solids, liquids, gases and solutions.
- Balance chemical equations, classify reactions, identify and analyze the role of the chemicals involved in chemical reactions.
- Predict the behavior of gases while undergoing changes in volume, pressure, temperature and quantity.
- Manipulate thermochemical equations and calculate the amount of energy involved in chemical reactions.
- Predict physical and chemical properties of elements based on electronic structure and location in the Periodic Table.
- Predict physical and chemical properties of compounds based on chemical bonding, geometry and intermolecular interactions.

COURSE TASKS

-participate in class, quizzes, homework, midterms, final exam

Text Book and Mastering Chemistry (Homework)

"Introductory Chemistry" 4th edition or custom edition by Russo and Silver (you can use earlier editions)
Mastering Chemistry on line homework (must have 4th edition version)

GRADING

Quizzes = 10 points ~7%	(End of class Friday, every ~3 weeks. Done in group work sheet fashion)
Each midterm = 30 points ~21.5%	(2 exams)
On-line homework = 10 points ~7%	(Mastering chemistry on-line)
Final = 60 point ~43%	***<u>Final Exam: Friday May 16th 9:45am to 11:45 am</u>***

1.) quizzes cover previous weeks work
2.) midterms cover ~1/4 of semesters material
3.) final is 2 hours, cumulative exam.
Grades are assigned as follows…
A = 100-90% B = 89-80% C = 79-70% D = 69-60% F = 59% and below
Curve will be applied if deemed necessary.

STUDYING FOR THIS COURSE

Your personal studying skills and habits are crucial to success in the class. You should be spending between ***5 to 10 hours a week*** studying ***<u>outside</u>*** of the class.
1. Use the lecture notes in class (bring them everyday)
2. Bring a calculator everyday to class (especially for the quizzes/exams)
3. Please ask questions if you do not understand something
4. Review your notes after class and do the homework assignments
5. Do the "self-tests" or practice exams handed out in class

Additional Information (This may be included in an appendix.)

- Sample exams and grading rubrics or scoring sheets will be available for students to monitor progress

OTHER POLICIES

1. Topics and exam schedule are listed below
2. It is expected that you have the math requirements need for this course. To review any concepts (algebra, exponential notation, significant figures, proportionality, percentages, logarithms, etc) go to the Math appendix in the textbook.
3. Missed Quizzes result in a **zero**. It you know you'll be absent notify me in advance. Lowest quiz score will be dropped.
4. For missed exams these require medical note, police report, obituary notice and you must notify me that day or before, ***<u>and</u>*** ***<u>not afterwards</u>***.

5. No-make ups to obtain a better grade are allowed
6. Disruptive behavior is not only rude to the instructor but the rest of the class. The instructor reserves the right to remove the student. This includes, excessive and rude comments, cell phones, beepers, sleeping, eating and drinking in class, etc…
7. Cheating will result in an "**F**" for the class so please don't do it.
8. Changes in schedule that are announced in class will be a week prior to the event. You are responsible for these whether present in class or not (ask/email me, another student, etc)

SCHEDULE OF COURSE

Chemistry 131 Tentative Schedule

Week	Dates	Chapter	Topics
1	1/13-1/17	1	What is Chemistry?
2	1/20-1/24	2	Numerical Side of Chemistry, **MLK Holiday (Monday 20th)**
3	1/27-1/31	3	Evolution of Atomic Theory **Quiz 1, Friday 1/31**
4	2/3-2/7	4	The Modern Model of the Atom
5	2/10-2/14		Review **Exam 1 chapters 1-3 Wed 12th**
6	2/17-2/21	5	Chemical Bonding and Nomenclature **Pres Day Holiday (17th)**
7	2/24-2/28	5	Chemical Bonding and Nomenclature **Quiz 2, Fri 2/25**
8	3/3-3/7	6	The Shape of Molecules
9	3/10-3/14	7	Intermolecular Forces and Phases of Matter
10	3/17-3/21	7	Intermolecular Forces and Phases of Matter **Quiz 3, Wed 3/19**
-	3/24-3/28	-	***No Class Spring break***
11	3/31-4/4	8	Chemical Reactions
12	4/7-4/11	8	Chemical Reactions and Review **Exam 2 Wed 9th**
13	4/14-4/18	9	Stoichiometry and the Mole **Good Friday 4/18**
14	4/21-4/25	9	Stoichiometry and the Mole
15	4/28-5/2	11	No Intermolecular forces? The Ideal Gas **Quiz 4, Wed 5/2**
16	5/5-5/7	11	Review for final, **Last day of class Wed May 7th**
17	**5/12-5/16**		***Final Exam: Friday May 16th 9:45am to 11:45 am***

Homework Assignments
Chapter 1, text book, # 9, 37, 45, 53, 57, 61, 65, 71, 77, 83, 91
Chapter 2; text book, # 3, 23, 29, 35, 49, 53, 58, 63, 67, 71, 75, 79, 81, 97
Chapter 3; text book, # 22, 23, 29, 37, 45, 57, 61, 65, 71, 77, 85, 91, 97
Chapter 4; text book, # 7, 16, 25, 31, 35, 43, 49, 53, 63, 67, 71, 77, 81, 83, 85
Chapter 5; text book, # 11, 29, 32, 39, 41, 47, 49, 53, 57, 61, 69, 75, 81
Chapter 6; text book, # 6, 19, 31, 39, 45, 49, 57, 63, 67, 71, 73, 77, 83
Chapter 7; text book, # 9, 25, 37, 39, 41, 45, 51, 57, 61, 67, 85
Chapter 8; text book, # 9, 19, 25, 33, 41, 45, 49, 57, 59, 63, 67, 71, 81
Chapter 9; text book, # 5, 18, 22, 31, 39, 41, 45, 53, 57, 63, 69, 73, 77, 83
Chapter 11; text book, # 7, 11, 17, 25, 29, 35, 37, 43, 49, 61, 69, 75, 78