

**CHEMISTRY 111**  
**Spring Semester 2001**

**Instructor:** Dr. Frank Cheng; email: ifcheng@uidaho.edu; tel. 885-6387

**Lectures:** MWF 1:30-2:20 Renfrew Hall 111

**Office Hours:** TR 2:30 - 4:30, Please check Renfrew 26A, 26 & 27 by knocking on the doors.  
Other hours: stop in or make an appointment

**Textbooks:** General Chemistry, 6th edition, D.D. Ebbing & S.D. Gammon, Houghton Mifflin Company (1999); Laboratory Manual for Principles of General Chemistry, 5th edition, J. A. Beran, John Wiley & Sons, Inc. (1994)

**Web Page** <http://oxygen.chem.uidaho.edu/ifcChem111>

**Calculator:** An inexpensive calculator is required. You will need the calculator during class, recitation, laboratory, and on exams. It should have capabilities for square roots, logarithms, exponentiation (antilogarithms), and exponential (scientific) notation operations. Text entry calculators will not be permitted for use during exams or quizzes.

**Lectures:** You should read the textbook prior to lecture and take your own notes during lecture. Assigned exercises come from the group of problems at the end of each chapter. Answers to these exercises are given at the back of the textbook and will be on reserve in the library. Homework will not be collected and/or graded, however you are strongly advised to complete the homework problems within a week of their assignment. If you do not understand how to do any of the problems, ask your TA to work them through during the recitation period. If you understand how to solve the homework problems as well as the ones discussed in lecture you should be able to solve those you encounter on examinations.

**Recitation:** A recitation period is scheduled each week. The purpose of recitation is to review and go over problems relevant to recent lecture material and will emphasize the material covered during the previous week. You should be prepared for recitation class by doing all relevant homework problems. Ask specific questions of your teaching assistant.

**Quizzes:** A quiz will be given at the end of most recitation classes for a total of eleven quizzes for the semester. No quiz will be given on January 18, February 8, March 15, April 26 and May 10). No make-up quizzes will be given. If you miss a quiz for any reason, you will receive no credit for that quiz. One quiz score will be dropped at the end of the semester.

### **Homework Assignment**

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Chapter 1. Chemistry and Measurement

Problems: 4-7, 9, 11, 14, 16, 19, 22, 27, 29, 31, 33, 35, 39, 43, 45, 49, 53, 57, 59, 61, 65-71 odd, 87, 95, 117, 119, 123, 129, 137, 143

Memorize names and symbols for elements 1-38

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## Chapter 2. Atoms, Molecules, and Ions

Use the Stock system when naming a cation of an element that has more than one monatomic cation.

Problems: 4, 6, 8, 14, 19, 23, 24, 26, 27, 29, 31, 33, 37, 39, 41, 45, 47, 49, 51, 53, 57-91 odd, 99, 101, 103, 111, 113, 115

Chapter 4 Pages, 149 -151

Problems: 45, 47, 49

Memorize: Names and symbols for elements 47 - 56, 78 – 86

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## Chapter 3. Calculations with Chemical Formulas and Equations

Problems: 3, 4, 7, 8, 9, 10, 16, 17, 18, 19, 23, 25, 29, 31, 33, 35, 37, 39, 43, 45, 49, 53, 55, 57, 63, 69-89 odd, 93, 99, 101, 105

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## Chapter 4. Chemical reactions: An Introduction

Problems: 2-9, 11-14, 15, 17, 18, 21-41 odd, 45-79 odd, 83, 89, 93, 99, 103, 109, 113

Memorize: Table 4.1 and Table 4.3

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## Chapter 5. The Gaseous State

Problems: 10, 23, 24, 26, 27, 29, 30, 31, 33, 35, 39, 41, 45, Odds: 51-63, 69, 71, 75, 77, 81, 89, 91, 93, 95, 101, 105, 109, 113, 123

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## Chapter 6. Thermochemistry

Problems: 6-11, 13-21, 25, 28, 29, 33, 39, 41, 43, 47, 51, 53, 55, 59, 61, 63, 65, 67, 69, 71, 73, 77, 91, 93, 95, 105

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## Chapter 7. Quantum Theory of the Atom

Problems: 4, 6, 10, 11, 19, 24, 27, 29, 31, 35, 37, 39, 41, 45, 47, 63, 65, 73, 75, 79

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## Chapter 8. Electron Configurations and Periodicity

Problems: 3, 5, 9, 11, 12, 14, 17, 24, 27, 29, 31, 33, Odds: 37-53, 57, 59, 61, 67, 73, 79, 81

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## Chapter 9. Ionic and Covalent Bonding

Problems: 2, 4, 6, 8, 9, 12, 13, 14, 15, 16, 21, 24, 29, 31, Odds: 35-77, 81, 89, 91, 97

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## Chapter 10. Molecular Geometry and Chemical Bonding Theory; Sections 10.1-10.4

Problems: 1, 2, 3, 4, 7, 8, 9, 21, Odds: 23-39, 43, Odds: 51-59

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**Exams:** There will be three one-hour exams and a two hour final exam. Check below for the examination dates.

**YOU MUST BRING A PHOTO ID TO ALL EXAMS**

**Make-up exams** will consist of the grade earned on the section of the final exam that pertains to the missed exam. Make-up exams will only given for illnesses with a doctor's note and by

approval by the instructor. Please see the instructor at least one week prior to the exam date to arrange approval.

<b>Course Work</b>	<b>3 credit hours</b>	<b>Points</b>	<b>Course percentage</b>
Hour Exam 1	Friday, February 9	100	12.5
Hour Exam 2	Friday, March 16	100	12.5
Hour Exam 3	Friday, April 27	100	12.5
Recitation Quizzes	Best 10 out of 11 quizzes	100	12.5
Final Exam	Tuesday, May 15 (1:30 PM)	200	25
<b>Chem 112 Lab</b>	<b>1 credit hour</b>		
Laboratory Quizzes	12 quizzes	60	8.75
Laboratories	12 labs	140	16.25
<b>Total</b>	<b>4 credit hours</b>	<b>800</b>	<b>100</b>

### **Chem 111 Laboratory**

**You are expected to come to lab adequately prepared.** Prior to each laboratory you should read the experiment and complete any pre-lab assignment. The pre-lab questions will not be turned in but you are expected to have done them prior to coming to lab. A short quiz will be given at the beginning of the labs. No lab grades will be dropped.

**Goggles:** Bring in the safety goggles that were given to you upon completion of Chemistry 111. Only departmentally approved safety goggles will be permitted in the laboratory. It is chemistry department policy that safety goggles must be worn at all times in the laboratory when anyone is working at an experiment or handling chemicals. One warning per semester will be given per student, a second violation will result in a grade of 0 points for the laboratory.

**Padlock:** (key or combination) with up to a 3/8 inch diameter shank. Please bring a lock to lab on check-in day.

**Make-up laboratories** will only be given for University excused absences. In order to make-up a lab you must make arrangements with Lab Services (885-7633) prior to your scheduled laboratory session (or within 24 hours of your scheduled laboratory session if advance arrangements are absolutely impossible).

**More than two unexcused absences** from lab results in a grade of "F" for the entire course. If you are repeating Chem 111 you may keep a previous lab grade providing the grade is a 70% or better and it was received in the past year.

**If necessary, laboratory scores will be normalized** at the end of the semester to remove large inconsistencies in grading between the different laboratory instructors.

**In most instances the laboratory will be written up and turned in before you leave the lab.**

**Attendance at check-out is required.** Failure to check-out at your scheduled lab time will result in a 10 per cent deduction of your total laboratory score.

### Chem 111 Laboratories

WEEK	Lab	Lab Points	Quiz Points
1/14	No Lab		
1/21	No Lab		
1/28	CHECK-IN; Web Handout: Measurement Part I	10 points	5 points
2/4	Web Handout: Measurement Part II	10 points	5 points
2/11	Web Handout: Copper	10 points	5 points
2/18	Lab Book: Volumetric Analysis: Acid/Base Titration Using Indicators	15 points	5 points
2/25	Lab Book: The Burning of a Candle	15 points	5 points
3/4	Web Handout: Graphing Activity	10 points	5 points
3/11	Lab Book: Job's Method for Determining the Stoichiometry of a Reaction	15 points	5 points
3/25	Web Handout: Spectroscopy of Food Coloring	10 points	5 points
4/1	Web Handout: Measurement of Fluoride in Water	15 points	5 points
4/8	Lab Book: Synthesis of Cobalt Oxalate Hydrate	10 points	5 points
4/15	Lab Book: Determination of the Composition of Cobalt Oxalate Hydrate	10 points	5 points
4/22	Web Handout: Molecular Geometry	10 points	5 points
4/29	CHECKOUT-Mandatory Attendance		
	<b>Lab Totals</b>	<b>140 points</b>	<b>60 points</b>

### Course Grade

**Grades:** Your course grade will be based on your final total number of points in the course. The final grade may be curved to some extent but the curve will not be harder than the following:

Grade	Cutoff Points out of 800 possible	Cutoff Percentage
A	680	85%
B	600	75%
C	496	62%
D	400	50%
F	Below 400	Below 50%

**Please note:** Since the final exam is cumulative if you earn a grade of "A" on the final you will earn a grade of "A" for the coursework regardless of your previous performance.