

Lecture Syllabus for College Chemistry II

Chem 112 - Spring 2006

*Chemistry is "the art, craft, and business
of substances and their transformations."
Roald Hoffmann*

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Pre- and Corequisites

Prerequisite: C111/C111L with a grade of C or better

C112 accompanies the corequisite course, C112L

Required Materials

- Chemistry: The Science in Context. Gilbert, Kirss, and Davies; ISBN 0393161846; Norton (2004)
- Calculator capable of scientific notation and logarithms

Computer and internet access to the Boise State University Blackboard site is also required. Students are expected to check their BSU email and the Blackboard site daily.

Optional Materials

- Solution Manual, Student's Version. Durfey; ISBN 0393979865; Norton (2004)

Course Policies

Academic Honesty

Students in this course are expected to demonstrate academic honesty in all work. This requires that you know and adhere to the Boise State University Student Code of Conduct, which can be found at <http://www2.boisestate.edu/studentconduct>.

Assessment of Student Performance

The student's proficiency will be assessed by graded in-class problem-solving assignments and lecture-length quizzes, online homework, a comprehensive final examination, and a laboratory. (A separate, detailed laboratory syllabus is provided for that portion of the course.)

- There will be 4 in-class Large Quizzes, each worth 100 pts.
- There will be a comprehensive Final Exam worth 200 points.
- Exam and quiz dates will not be changed; there will be no make-ups offered.

Course Grading

- The course grade will be based on:

In-class Problem-solving	10%
Online Quizzes	10%
Large Quizzes (best 3 of 4):	36%
Final Exam	24%
Laboratory	20%

- Your combined lecture and lab scores will determine your final grade:

~90-100%	A
~80- 89%	B
~70- 79%	C
~60- 69%	D
~<60%	F

Class Structure

- This class will be approximately 70% lecture and 30% in-class problem-solving on a daily basis.
- The in-class problem-solving will usually come from (or be based on) the lecture of that day. You will work on these problems in small assigned groups, and hand in what you've completed before you leave class each day. These problems will be graded and returned to you at the next lecture session.
- Online quizzes will be assigned for each GKD Chapter; they will be posted in the "Assignments" section on Bb. The questions will be taken directly from GKD. You should work out the solutions neatly enough to be used for studying, but they will not be handed in; you will just record your final answers, which will be graded, online.
- Large Quizzes will be given on Wednesdays (see schedule at end of syllabus); they will **focus** on the material covered since the previous Large Quiz – however, as much of what we are learning builds upon material from previous chapters, each of these quizzes may be considered cumulative.
- Periodically, a take-home worksheet may be assigned.
- Additional homework problems are available in the textbook. Becoming successful at science is the same as becoming successful at music or art – the more you practice, the better you become!

Lecture Attendance

- You are responsible for learning the material provided in class, in the text, and on the internet. The daily activities in class (asking questions, independent and collaborative problem-solving, lectures which cover the fundamental principles of chemistry and help you to organize those concepts) will aid you in these efforts.

Conduct

- Up to 2 percentage pts will be awarded for conduct in the areas of promptness, courtesy, patience, and cooperation. Please note that your cell phone should be in silent mode during class; do all your cell phone messaging (verbal, text, etc.) outside the classroom.

The Blackboard Course Site

This course has an on-line component serviced by Blackboard (Bb). The Bb course site will be used to post announcements, grades, course documents (this syllabus is in the "**Course Documents**" section of the site), and online homework/quiz material. It is recommended that you access this site each evening and on weekends to look for announcements and updates.

If you were pre-registered for this course, you have already been enrolled in the Bb version of the course. If you registered later, provide your instructor with your name and student ID #, so you can be added to the course.

You can get to the Bb site for the course by pointing your browser to <http://blackboard.boisestate.edu>. Your username for your Bb account is your 9-digit BSU ID number. Initially, your password is also your ID number. The first time you login, you should change your password. If you have taken a previous course with Bb, your last password is still valid.

For instructions on changing your password, go to <http://itc.boisestate.edu>:

On the menu on the left, choose "Blackboard"
Scroll down the page to the heading "Blackboard Links for Students"
The FAQ list has instructions about changing your password

Chemistry 112 Core Learning Objectives

Critical Thinking/Problem Solving

- Clearly recognize and solve [chemical] problems using both qualitative/conceptual and quantitative/computational methods
- Construct arguments to support and explain specific characteristics and consequences of [chemical] processes

Communication Skills

- Identify, use, and articulate an understanding of [chemical] information derived from both written and spoken sources
- Develop and utilize speaking, listening, & interpersonal communication skills

Breadth of Knowledge and Intellectual Perspective

- Gain an awareness and understanding of the basic principals and methods used in the field of chemistry
- Apply problem solving skills and communication skills in a chemistry-specific context
- Demonstrate proficiency in the fundamentals of chemistry at a >70 % level, as measured by written exams, homework and laboratory assignments
- Apply these fundamental principles learned in the lecture and laboratory to understand the chemical phenomena observed in the laboratory as well as every day life

C112 Course Schedule Spring 2006

Week of:	Gilbert Kirss & Davies chapter:	Chapter progression:	Laboratory schedule:
Jan 17	10 The Solid State	10	Syllabus; Safety Policy; Check-in
Jan 23		10, 11	Chem 112 Bootcamp
Jan 30	11 Thermochemistry	11	What % of a Penny's Mass is Copper?
Feb 6	Large Quiz 1 Wednesday Feb 8	12	Determination of K _{sp}
Feb 13	12 Energy and Organic Chemistry	12, 13	Spectroscopic Determination of Aspirin Spec Determination of Nickel & Copper Ions
Feb 20	13 Entropy and Free Energy	13	
Feb 27	Large Quiz 2 Wednesday Mar 1	13, 14	Thermochemistry: Enthalpy of Reaction
Mar 6	14 Chemical Kinetics and Air Pollution	14	Thermochemistry: Hess' Law
Mar 13	15 Chemical Equilibrium	15	Synthesis of Soap
Mar 20	Large Quiz 3 Wednesday Mar 22	15	Kinetics of Dye Decomposition
Mar 27	<i>Spring Break – no classes scheduled</i>		
Apr 3	16 Acids, Bases, and Buffers!	16	Chemical Equilibrium
Apr 10		16	Phosphoric Acid Titration Curve
Apr 17	17 Electrochemistry	17	Phun with Phosphate Buffers
Apr 24	Large Quiz 4 Wednesday Apr 26	17, 18	Electrolysis of Water; Check-out
May 1	18 Materials Chemistry	18	Laboratory Final Exam
	Comprehensive Lecture Final Exam: Thursday, May 11 10:30 a.m. - 12:30 p.m.		

Note: Large Quiz and Final Exam dates will not be changed. Dates for covering the Chapter material are approximate; Large Quizzes may be considered cumulative, though they will *focus* on the most recent topics covered.