



Principles of Chemistry II

Chemistry 1220 - 001 • Dr. Harris
 Fall 2006 Course Schedule
 1:30 – 2:20 p.m., MWF
 Widtsoe 007
 Weekly 1-Hour Recitation
 4 credits

Dates		MON	WED	FRI
August 28 th – 30 th	September 1 st	Introduction	14	14
September	4 th – 8 th	Holiday	14	15
September	11 th – 15 th	15	15	15
September	18 th – 22 nd	[E1] 1:30 p.m. Widtsoe 007	16	16
September	25 th – 29 th	16	16	16
October	2 nd – 6 th	17	17	17
October	9 th – 13 th	17	[E2] 1:30 p.m. Widtsoe 007	19
October	16 th – 20 th	19	19	Holiday
October	23 rd – 27 th	20	20	20
October 30 th – 31 st	November 1 st – 3 rd	20	21	21
November	6 th – 10 th	21	21	21
November	13 th – 17 th	[E3] 1:30 p.m. Widtsoe 007	Comprehensive Make Up Exam	24
November	20 th – 24 th	24	Holiday	Holiday
November 27 th – 29 th	December 1 st	24	25 Extra Credit Information	25
December	4 th – 8 th	25	25	25
December	11 th	[Final] 11:30 a.m. Widtsoe 007		

Exam Number	Date	Chapters Included
1	Monday, 18 th of September	14 and 15
2	Wednesday, 11 th of October	16 and 17
3	Monday, 13 th of November	19 – 21
Final	Monday, 11 th of December	24 and 25 (20 questions) 14 – 17 and 19 – 21 (15 questions)

Dr. Doug Harris
 Office: Widtsoe 335, (435) 797-1609
 E-mail: harrisd@cc.usu.edu
 Office Hours: 10:30 – 11:30 a.m. MW

Materials

Brown, LeMay, and Bursten, *Chemistry – The Central Science*, 10th edition, Prentice Hall, 2007.

Scientific Calculator (no cell phone calculators)

Course web site: <http://www.chem.usu.edu/~harrisd/>

Coursework

Examinations, 3 @ 100.....	300
Recitation quizzes, Best 10 of 11 @ 10.....	100
Final Exam, comprehensive @ 150.....	150
TOTAL	550

Grades

100% - 92%	A
91% - 88%	A-
87% - 85%	B+
84% - 81%	B
80% - 77%	B-
76% - 73%	C+
72% - 64%	C
63% - 60%	C-
59% - 57%	D+
56% - 50%	D

Note: Scores rounded to nearest one's place (91.4% = 91% and 91.5% = 92%).

The instructor reserves the right to lower these cutoff scores.

Policies and Procedures

1. The administration of Chemistry 1220 will adhere strictly to the policies outlined in the USU Fall 2006 Semester Schedule of Classes.
2. Qualified students with disabilities may be eligible for reasonable accommodations. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, 797-2444 voice, 797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.
3. Anyone missing one of the scheduled regular exams for school excused absences will be eligible to take the Comprehensive Make-up Exam, offered on Wednesday November 15th at 1:30 pm in Widtsoe 007 by appointment with Dr. Harris. Due to the University Final Grade Submission Policy, the mandatory comprehensive final exam will only be rescheduled for school-excused absences.
4. Keep in mind that the practice exam serves as an assessment of your understanding of concepts presented in lecture. Hopefully you will be diligent about following the suggested study plan outlined at the beginning of the course. Exam questions may be the same or similar to the practice exam problems but may also be completely different. Although exam questions may be completely different from the practice exam problems, all exam questions will focus on the concepts discussed in lecture.
5. Scantrons will be provided by the instructor.
6. When taking the exam, be sure to answer the problem and immediately fill out the corresponding scantron bubble. Avoid waiting to fill out your scantron sheet when finished with your exam.
7. Double check your scantron sheet before turning it in. Make sure that all of your answers have been entered the way you want them to appear on your scantron. Once an exam scantron is submitted, it may not be retrieved in order to make additions and/or changes.
8. Please arrive early to take the exam. Exams and scantron sheets will not be handed out after the first completed exam scantron sheet has been submitted.
9. Exam cheating is a direct violation of the University Honor Code and will not be tolerated.
10. Although class attendance will not be officially taken, it will be absolutely essential that every effort is made in attending each lecture. All students will be held responsible for lecture material, worked problems, and/or course announcements that are presented in lecture.
11. If you choose to complete an optional extra-credit molecular modeling exercise, one percentage point (1%) will be added to your final grade percentage. This is helpful to those students who end up with a final borderline grade percentage. The extra-credit submission deadline will be at 11:30 a.m. Monday, December 11th when we meet to take the final exam. Further information will be given in class on Wednesday, November 29th regarding the specific details in producing the extra-credit assignment.

Main Course Objectives and Assessment

1. Prepare students to understand and solve a large variety of quantitative situations important for chemical kinetics, equilibria, and thermodynamics. Within this context, problems related to acid/base reactions, pH, electrochemistry, and nuclear reactivity are addressed. Finally, in order to better prepare students for subsequent organic and biochemistry courses, a broad range of descriptive topics (the chemistry of organics and biochemicals) are presented to complete the course.
2. Use student centered learning strategies in the chemistry classroom.

Some Learning Objectives:

- Comprehend the importance of stoichiometry, chemical equilibrium, and kinetics in analysis.
- Deduce chemical structures given chemical composition.
- Discuss and apply concepts of chemical structure and bonding to predict chemical structure and chemical reactivity.
- Discuss the basic chemical components of living systems, including proteins, nucleic acids, lipids, and carbohydrates.
- Be able to relate the microscopic and macroscopic properties of matter to each other.
- Use physical and computational models to describe energies and forces in atoms and ions and explain the trends in the periodic table.
- Use the laws of thermodynamics to discuss and predict chemical reactivity and spontaneity.
- Apply concepts of resonance and inductive effects to predict the chemical and physical properties for different functional groups and the reactivity of molecules to which these functional groups are attached.
- Draw the Lewis structures including reasonable resonance structures and predict chemical properties for various compounds.
- Identify the various types of isomerism in organic and inorganic compounds, identify and classify chiral centers.
- Draw and interpret reaction coordinate diagrams, relate the energetic changes associated with chemical reactions to equilibrium constants and rate, and differentiate kinetic versus thermodynamic control of reactions.
- Describe the basic issues of nuclear chemistry and radioactivity.
- Professional ethics.
- Explain the properties of water and its impact on chemical reactions.
- Develop and apply Molecular Orbital models of chemical bonding.
- Describe the features of carbohydrates, proteins, lipids, and nucleic acids.
- Classify compounds by structure, use the IUPAC nomenclature, and identify conformational effects.