CHEM 1110 General Chemistry I

Instructor: Douglas Harris
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Office Hours: MW 10:30 – 11:15 AM or by appointment
Course Duration: 29th of August through the 12th of December, 2005.
Course Description: Chemistry 1110 is a course designed for students preparing for careers in health-related professions. The main course objective is "to relate the structure and behavior of matter to its functions in health and life" (see text preface). Prerequisite course for Chemistry 1110 is Math 1050.
Course Grading Policies: Your grade will be based on your performance with the following: four regular exams and the final exam (100 points each/drop the lowest exam score) - 400 total possible points. Exams will not be rescheduled. A missed exam will serve as the lowest dropped exam score. If you choose to complete an optional extra-credit molecular modeling exercise, two percentage points (2%) will be added to your final grade percentage. This is helpful to those students who end up with a final borderline grade percentage. The latest that you can turn in the extra-credit assignment will be 9:30 AM Monday, December 12th.
Grade Percentage:

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

Course Management: All supplemental materials for the class, suggested problems, sample exams, and related material will be available through the course web site at http://www.chem.usu.edu/~harrisd/. The administration of Chemistry 1110 will adhere strictly to the policies outlined in the Fall Semester Schedule of Classes, pp. 4, 10, and 102 – 109.
Class Meeting Time: MWF 9:30 – 10:20 AM, T 3:30 – 4:20 PM, Widtsoe 007.
Required Text: "*General, Organic, and Biological Chemisty: Structures of Life*" by Timberlake, Platinum edition. (Pearson Education)
Required Supplies: Scientific Calculator (no cell phone calculators)
Course Credit Hours: 4.0
Some Learning Objectives:

- Review math and learn to do calculations while working everyday examples of problems in health and medicine using metric units.
- Understand the relationship of isotopes to the atomic mass of an element on the periodic table.
- Understand the relationship between electron arrangement, group number, and periodic law.
- Understand different types of radiation, radiation protection, balancing of nuclear equations, and the fusion and fission processes.
- Learn the relationship between group numbers, valence electrons, and the formation of ionic and covalent compounds.
- Write ionic formulas and names of compounds with polyatomic ions.
- Use VSEPR theory to determine the shape, bond angles, and polarity of a molecule.
- Determine the energy lost or gained during a change of state/temperature.
- Classify an equation as a combination, decomposition, replacement, combustion, and/or oxidation-reduction.
- For a given mass of a substance in a reaction, use the appropriate mole factors and molar masses to calculate the mass of a reactant, product/percent yield.
- Understand and write the equilibrium constant for an equation.
- Use the ideal gas law to calculate an unknown pressure, volume, moles, and/or temperature of a gas.
- Understand solubility and determine whether a salt will dissolve in water.
- Calculate the percent concentrations and molarity of a solution.
- Describe the behavior of a red blood cell in hypotonic, isotonic, and hypertonic solutions.
- Describe the characteristics of acids and bases.
- Classify bases/acids as strong or weak.
- Predict whether a salt will form an acidic, basic, or neutral solution.
- Describe the function of a buffer.
- Describe the properties and functional groups found in organic compounds.
- Describe the physical properties and write the IUPAC names of alkanes and cycloalkanes.
- Describe the properties, reactions, and IUPAC names of alkenes and alkynes.
- Write equations for the combustion, dehydration, and oxidation of alcohols.

Chemistry 1110 Class Schedule

Day	Date	Lecture	Sections
M	29 August	1	1.1-1.2
Tu	30 August	2	1.3–1.4
W	31 August	3	1.5-1.6
F	2 September	4	1.7.-1.8
M	**5 September**	**Labor Day**	**No Class**
Tu	6 September	5	1.9-2.1
W	7 September	6	2.2-2.3
F	9 September	7	2.4-2.5
M	12 September	8	2.6-2.7
Tu	13 September	9	2.8-3.1
W	14 September	10	3.2-3.3
F	16 September	11	3.4-3.5
M	19 September	12	3.6-3.7
Tu	20 September	13	4.1-4.2
W	**21 September**	**Exam 1**	**Chapters 1, 2, and 3**
F	23 September	14	4.3-4.4
M	26 September	15	4.5-4.6
Tu	27 September	16	4.7-4.8
W	28 September	17	4.9-4.10
F	30 September	18	5.1-5.2
M	3 October	19	5.3-5.4
Tu	4 October	20	5.5-5.6
W	5 October	21	5.7-5.8
F	7 October	22	6.1-6.2
M	10 October	23	6.3-6.4
Tu	11 October	24	6.5-6.6
W	12 October	25	6.7-6.8
F	**14 October**	**Exam 2**	**Chapters 4, 5, and 6**
M	17 October	26	7.1-7.2
Tu	18 October	27	7.3-7.4
W	19 October	28	7.5-7.6
F	21 October	29	7.7-7.8
M	24 October	30	8.1-8.2
Tu	25 October	31	8.3-8.4
W	26 October	32	8.5-8.6
F	28 October	33	8.7-8.8
M	31 October	34	8.9-9.1
Tu	1 November	35	9.2-9.3
W	2 November	36	9.4-9.5
F	4 November	37	9.6-9.7
M	7 November	38	9.8-9.9
Tu	8 November	39	10.1-10.2
W	**9 November**	**Exam 3**	**Chapters 7, 8, and 9**
F	11 November	40	10.3-10.4
M	14 November	41	10.5-10.6
Tu	15 November	42	10.7-10.8
W	16 November	43	10.9-10.10
F	18 November	44	10.11-11.1
M	21 November	45	11.2-11.4
Tu	22 November	46	11.5-11.6
W	**23 November**	**Thanksgiving**	**No Class**
F	**25 November**	**Thanksgiving**	**No Class**
M	28 November	47	12.1-12.3
Tu	29 November	48	12.4-12.5
W	30 November	49	12.6-12.7
F	**2 December**	**Exam 4**	**Chapters 10, 11, and 12**
M	5 December	50	13.1-13.4
Tu	6 December	51	13.5-13.7
W	7 December	52	14.1-14.3
F	9 December	53	14.4-14.6
M	**12 December**	**Final Exam 9:30 – 11:20 AM**	**13 questions – Chapters 13 and 14 12 questions -Comprehensive**