



SYLLABUS Fall 2010
Chemistry 1210: General Chemistry I
Itineris Early College High School

Instructor: Randy Booth Ph.D.

Email: rbooth@iechs.org

Itineris Course Webpage: <http://www.iechs.org/staff/booth/CHEM1210.htm>

Description: (4 credits) Fundamentals of inorganic chemistry. Atomic structure, chemical bonding, chemical reactions, solution chemistry, stoichiometry, periodic table, thermochemistry, kinetics, gasses, and kinetic molecular theory will be covered.

Course Objectives:

1. To gain a fundamental understanding of the basic principles of introductory chemistry and essential problem solving skills
2. To gain a better understanding of and appreciation for the role of chemistry in everyday life.

Textbook: Chemistry – The Central Science by Brown, Lemay, and Bursten.

Grade Breakdown:

Weekly Quizzes or Homework (10)	100 points
Assignment #1 - Chemistry In the News	25 points
Assignment #2 - Molecules Around Me	25 points
Exams (4)	100 points each
Final	150 points
Total Points	700 pts

Grading Scale

Grade and Corresponding Percentage			
A	93 – 100 %	C	66 – 69%
A-	88 – 92%	C-	62 – 65%
B+	84 – 87%	D+	58 – 61%
B	78 – 83%	D	54 – 57
B-	74 – 77%	D-	50 – 53
C+	70 – 73%	E	below 50%

Attendance: Attendance and participation are important. If you anticipate that you may miss a class when an assignment is due or a quiz is taken, it is your responsibility to arrange to turn it in or take it at an **earlier** date. If you fail to make arrangements, you will receive a zero for that quiz or assignment.

Late work: All work is due at the beginning of the indicated class period unless indicated otherwise. Work submitted late without prior approval from me will be marked down 25% for the first 24 hours, 50% if turned in within a week of original due date, or given a score of "0" if turned in thereafter. There will be no makeup work without prior approval. Proof of illness or death i.e., a doctor's note or death certificate, may be required.

Assignments & Submitted work: All work must be submitted through email to rbooth@iechs.org before midnight of the due dates. Your work must be the work of college students. Your work is to be submitted on time or points will be deducted according to the late work policy. The two assignments are to be typed in a 12 point Times, Times-Roman, or Times-New Roman font, and double-spaced. Failure to meet these requirements will result in the loss of 11% of the points per assignment. Hand-written assignments will not be accepted and will be awarded a score of "0." Neatness and spelling do count on assignments. **See the class website for further information about the two assignments.** **Do yourself a favor and re-read this section before submitting any work to me!** Assignment #1 is due Sept. 22nd. Assignment #2 is due Nov. 17th.

Quizzes/Homework: There will be 10 quizzes or homework assignments during the semester. Quizzes or assignments will be given/due at the beginning of the class generally on Tuesdays. The quiz and exam problems will generally be very similar to problems found at the end of the chapters. It will be to your benefit to work as a *minimum* all of the suggested exercises and any additional problems you need to help you feel comfortable with a particular concept. It is your responsibility to work as many problems as it takes for you to feel comfortable with a particular concept.

Exams: There will be four regular exams and a final exam. Each regular exam will cover three chapters. The final will be comprehensive. **A calculator will be essential – GET ONE!** The final exam is mandatory. Students who miss the final will not be allowed to earn better than a "C-".

Note: Academic honesty is required at all times. Any student caught cheating on any graded material will be dropped from the course and may receive a failing grade for the class. This includes cheating on exams, plagiarism, fabricating data, and collaborating on work that is to be done individually.

Cell phones and other electronic devices:

Possession of a cellular telephone and other electronic device by a student is a privilege that may be forfeited by any student that uses their cell phone inappropriately. Use of such items during classroom time, instructional activities and field trips is prohibited. This is your warning. If you refuse to follow this policy you will be asked to leave.

Classroom Disruption and Safety: Any activity endangering the safety of any students WILL NOT be tolerated and may result in dismissal from the course.

Additionally, students who demonstrate through their actions to be a distraction from a learning environment will be dismissed. If multiple offenses occur that student may be asked to not return to the class and will receive a failing grade. Contact Dr. Booth if you have any questions.

Course Schedule*:

Week	Class	Class Topic	Chapter	HW/Quiz
1	1	Introduction, Matter	1	
	2	Measurement	1	
	3	Atomic Theory	2	
2	4	The Periodic Table	2	#1
	5	Molecules, Ions, & Nomenclature	2	
	6	Organic Compounds	2	
	7	Balancing Chemical Equations	3	
3	8	Patterns of Reactivity	3	#2
	9	FW, the mole, & Empirical Formulas	3	
	10	Stoichiometry	3	
	11	Stoichiometry	3	
4	12	Review		
	13	Exam 1		
	14	Aqueous Solutions	4	
	15	Precipitation Reactions	4	
5	16	Acid-Base/Redox Reactions	4	#3
	17	Solution Stoichiometry	4	
	18	Energy	5	
	19	Enthalpy	5	
6	20	Calorimetry	5	
	21	Enthalpies of Formation	5	
7	22	Photons	6	#4
	23	Wave Behavior	6	
	24	Orbitals	6	
	25	Electron Configuration	6	
8	26	Review		#5
	27	Exam 2		
	28	Effective Nuclear Charge	7	
	29	Atoms vs Ions	7	
9	30	Ionization Energy & Electron Affinity	7	
	31	Group Trends	7	
	32	Lewis Symbols, Octet Rule, Ionic Bonding	8	
	33	Bond Polarity & Electronegativity	8	
10	34	Lewis Structures & Resonance	8	#6
	35	Strengths of Covalent Bonds	8	
	36	The VSEPR Model	9	
	37	Hybrid Orbitals	9	
11	38	Multiple bonds	9	#7

	39	Molecular Orbitals & Magnetism	9	
	40	Review		
	41	Exam 3		
12	42	Gas Laws	10	
	43	Gas Laws	10	
	44	Partial Pressures	10	
	45	Kinetic-Molecular Theory	10	
13	46	Real Gasses	10	#8
	47	Intermolecular Forces	11	
	48	Liquids & Phases	11	
	49	Vapor Pressure	11	
14	50	Solid Structures	11	#9
	51	Solutions	13	
15	52	Solubility	13	
	53	Concentration	13	
	54	Colligative Properties	13	
	55	Review		
16	56	Exam 4		
	57	Radioactivity	21	
	58	Nuclear Stability & Transmutations	21	
	59	Rates of Decay and Uses of Radioactivity	21	
17	60	Review		#10
	61	Review		
	62	Review		
	63	Final Exam		

*This schedule is tentative and may be modified as the semester progresses to better fit the needs of the class

Practice Problems by Chapter for Chemistry 1210

Chapter 1 – 9, 15, 17, 19, 25, 27, 33, 37, 39, 45, 49, 53
Chapter 2 – 7, 15, 21, 23, 25, 29, 37, 49, 53, 55, 59, 61, 63, 65, 92, 95, 97
Chapter 3 – 11, 13, 19, 21, 25, 33, 35, 37, 45, 47, 49, 57, 63, 69, 73, 75, 81, 86, 103
Chapter 4 – 15, 19, 21, 23, 29, 39, 43, 49, 51, 61, 63, 65, 67, 75, 79, 110
Chapter 5 – 37, 39, 45, 49, 51, 61, 63, 67, 69, 71, 73, 75
Chapter 6 – 15, 23, 25, 63, 67, 71, 73
Chapter 7 – 13, 15, 23, 37, 39, 41, 43, 57
Chapter 8 – 7, 11, 13, 17, 29, 33, 35, 45, 49, 53, 57, 59, 61, 65, 84
Chapter 9 – 21, 27, 35, 47, 49, 51, 63, 67, 76, 96
Chapter 10 – 12, 17, 27, 31, 33, 35, 37, 53, 59, 63, 67, 102, 105
Chapter 11 – 9, 11, 15, 17, 19, 23, 25, 39, 45, 55, 79, 85, 88
Chapter 13 – 13, 23, 25, 27, 37, 45a, 47a, 55
Chapter 21 – 1, 2, 8, 14, 19, 28, 34, 41, 53, 61, 64, 67