Loyola University Chicago

Syllabus General Chemistry A CHM 102 Sec. 001; Discussion 002,003 Fall 2012
Lecture: M,W,F: 11:30 AM - 12:20 PM Flanner Hall 133
Discussion: 002: T, 10:00 AM – 11:15 AM Flanner Hall 105
003: T, 11:30 AM – 12:45 PM Cuneo 102
Instructor: Donald May Contact: dmay4@luc.edu
Office: Flanner Hall 403 Hours: T, 01:00 PM - 02:00 PM; Announced times/by appointment.
Textbook: Chemistry: The Central Science, Brown, LeMay, Burnstein, Murphy, Woodward, 12th ed., 2012, Prentice Hall. There is also a student's solutions manual available (recommended).

Method of instruction: Lecture and discussion. Lectures may be supplemented with classroom discussion, use of molecular models, use of multimedia, and/or use of computer based materials as well as individual and/or group problem solving. Suggested textbook homework problems will be given which the student will need to complete on-line at, http:/www.MasteringChemistry.com which can be accessed on or off campus. MCMAY97771 is the course ID for Mastering Chemistry. Problems may also be covered in lecture and discussion and subsequently students should bring their calculator to lecture and discussion. Exam and quiz questions will come from theories covered in lecture and from suggested homework problems. No early and no make-up in-class exams nor quizzes. Exams will be given during scheduled lecture time. Discussion quizzes will be given at the beginning and turned in on the day of discussion.

Grading: Semester grades will be determined by the following criteria:
Weekly on-line homework contributing 15% toward the final grade with individual due dates for chapters to be given; Weekly discussion quizzes contributing 10% toward the final grade;
Three (3) in-class unit exams contributing 45% (15% each exam) toward the final grade.
A comprehensive final exam contributing 30% toward the final grade.
Final grades will be determined from one of the following exam contribution options, whichever is higher:
OPTION 1: All three (3) unit exams at 15% each = 45%; final exam 30%
OPTION 2: Best two (2) unit exams at 15% each = 30%; final exam 45%

Homework: 15%
Discussion Quizzes: 10%
Exams: 75%
Total: 100%

No early and no make-up in-class exams; no early and no make-up quizzes. For a single, missed in-class exam, Option 2, automatically will be utilized to determine the final course grade. Any subsequent missed in-class exams will be scored as zero. The student must have a valid and verifiable reason for missing the final exam, such as an extreme emergency or serious illness requiring hospitalization, and so forth. If a verifiable and valid reason cannot be provided, a zero score for the final exam will be recorded. See attached schedule. Exam Dates (tentative):
Exam I: Sept. 19; Exam II: Oct. 17; Exam III: Nov. 14; Final Exam: Dec. 10, 1-3 PM

Final course grade: Generally the lowest A- is 88%, lowest B- is 78%, lowest C- is 66%, lowest D is 56%. Grades assigned will be: A, A-, B+, B, B-, C+, C, C-, D+, D, F

Student Conduct: Only students enrolled for the class may attend. At all times students are expected to conduct themselves in a professional manner, which includes but is not limited to: treating everyone in class with respect, avoidance of extraneous comments and small group

discussions during lecture. Additionally radios, headphones, cell-phones, PDA's, mp3 players or similar devices must be in silent mode during lectures, discussions and are not permitted during exams. Students are expected to take care of personal matters before a lecture/discussion/exam begins. The eating and drinking of food, water, soda, use of tobacco products, chewing gum, are not allowed during lectures, discussions and exams. Students must utilize their own calculator for exams: cell phone calculators are not allowed. Calculators will not be provided. Not all possible contingencies for student conduct can be listed, subsequently other modes of student conduct not listed, will be addressed immediately. Disruptive students will be required to leave. Students are responsible for taking care of all personal matters before an exam begins. During exams, please keep noises to a minimum: radios, headphones, cell-phones, PDA's, mp3 players or similar devices must be in silent mode during lectures, discussions and are not permitted during exams. Disruptive and noncompliant students will be required to leave. If a cell phone rings (beeps, buzz, etc.) during any exam, the exam will be collected and the student will not be allowed to continue. It is recommended that the student read through each chapter before lecture. Bring your calculator each day.

Academic Integrity: Consult the Undergraduate Studies Handbook for additional information. All exams are closed book and closed note. During exams violations include but are not limited to: cell phone ringing, opening a book-bag or back-pack during an exam, using unauthorized notes or books, looking at another student's exam, using another student's calculator, talking to another student after the exam has begun, taking a copy of the exam from the room and so forth. Students caught cheating will receive an automatic "F" for the course and will not be allowed to drop the course. Further actions will also result. The student must bring their Loyola I.D. for each exam. Students are not allowed to leave the room during exams. If you leave, you must turn in your exam and you will be considered finished. During exams please keep noises and sounds to a minimum. When leaving, be respectful and leave quietly.

Lecture Outline (tentative, subject to change)

Week	Date	Chapter	Topic	*
1	08/27	13	Solution Process, Solubility	
	08/29		Solubility, Solution concentrations	
	08/31		Colligative Properties	
2	09/03		***NO CLASS*** Labor Day- Holiday	
	09/05	14	Reaction Rates, Rate law expressions	
	09/07		Rate Laws	
3	09/10		Half-life; Arrhenius Equation	
	09/12		Activation Energy, Reaction Mechanisms	
	09/14	15	Equilibrium, K_c , K_p	
4	09/17		Using Equilibrium Constants, Q (reaction quotients)	
	09/19		**EXAM I**	
	09/21		LeChatlier's Principle	
5	09/24	15,16	Acid-Base Chemistry	
	09/26	16	Autoionization of H_2O, pH scale	
	09/28		Strong and weak: Acid/Bases	
6	10/01		K_a,K_b, pH calculations	
	10/03		Salt Solutions	
	10/05	17	Common Ion effect	
7	10/08		***NO CLASS*** Midterm Break	
	10/10		Buffers	
	10/12		Buffers/Acid-Base Titrations	
8	10/15		Acid-Base Titrations	
	10/17		**EXAM II**	
	10/19		Solubility Equilibria	
9	10/22		Solubility & Precipitation	
	10/24	19	Spontaneous Processes, Entropy	
	10/26		Entropy, 2^{nd},3^{rd} Thermodynamic Laws	
10	10/29		Gibbs Free Energy	
	10/31		Free Energy and Equilibria	
	11/02	20	Last day for "W" otherwise "WF"	
11	11/05		RedOX, Oxidation States;	
	11/07		Balancing RedOx reactions (Acidic, Basic, Neutral)	
	11/09		Voltaic Cells	
12	11/12		Free energy	
	11/14		**EXAM III**	
	11/16	20	Equilibrium, Nernst equation	
13	11/19		Batteries, Fuel Cells, Electrolysis	
	11/21		***NO CLASS*** Thanksgiving Break	
	11/23		***NO CLASS*** Thanksgiving Break	
14	11/26	21	Radioactivity, Nuclear Stability	
	11/28		Nuclear Transmutations	
	11/30		Decay kinetics	
15	12/03		Energy in Nuclear Reactions, Fission	
	12/05	16.10,11	Structure & Acidity, Lewis Acids and Bases	
	12/07	23	Coordination Chemistry	
16	12/10		**FINAL EXAM 01:00 PM – 03:00 PM**	