General Chemistry B (CHEM 102, Sections 021, 022)
Spring 2011

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Office Hours:	Tue 8:00 – 9:00 PM, We 2:00 – 3:00 PM, Th 9:00 – 9:30 PM
Lecture:	Tuesday, Thursday, 6:30 PM – 7:45 PM, FH-133
Discussion:	Thursday, 8:00 pm – 8:50 pm, FH-133

Prerequisites: General Chemistry A

Textbook: "*Chemistry & Chemical Reactivity*" 6th, 7th, or 7eth edition, by Kotz, Treichel and Weaver.

Required Materials:
1. "Online Web-based Learning (OWL) Access Code for *Chemistry & Chemical Reactivity, 7th or 7eth edition*" (buy in Loyola or Beck's bookstore or online at www.cengage.com/owl).
2. iclicker remote control device for in-class response (buy in Loyola or Beck's bookstore or online on iclicker.com (new) or Ebay (used). Register your iclicker in class.
3. A non-programmable calculator, capable of scientific notation (e.g. TI-30XA).

Recommended Materials:
- "*Chemistry & Chemical Reactivity*" 7th edition ebook (can be purchased packaged together with OWL)
- "*GoChemistry*" minivideo lectures for ipod or iphone (these video lectures are included in OWL)
- "*Student's solution manual*" for your textbook
- "*Molecules*", P. Atkins; W. H. Freeman and Company, New York 1996.

Course Overview: General Chemistry B is the second semester of a two-semester series in general chemistry. The course describes internal composition, properties and interaction of the matter that forms human body and surrounding world. We will cover chapters 13 – 20 and 22-23 of the Kotz's text; a schedule of lecture topics accompanies this syllabus. Your attendance at lecture and discussion is expected. Correct answers to exam questions may require knowledge of all information presented in the lecture, discussion, textbook, and OWL. It is recommended that you read (and think about) appropriate chapter of the textbook prior to the lecture covering that chapter, and ask questions relevant to the covered material during the lecture and the discussion.

Exams: 45 minute entry exam, 75 minute midterm exam and 120 minute final exam will be administered during semester. The final exam questions will cover chapters 13 - 20 and 22 - 23 of the textbook. Midterm exam questions will cover chapters 13 - 18 of the textbook. Entry exam questions will cover chapters 1 - 12 of the textbook. Make-up exams for excused absences will be administered for midterm and final exams. If a student disagrees with his/her score for the exam, he/she must request re-grading within one week from the day he/she received the graded exam. Significant percentage of midterm and final exam questions will be similar to those covered during Discussion.

Homeworks: Homework problems use the Online Web-based Learning (OWL) system. You will need to register at http://www.cengage.com/owl before accessing the homeworks for the first time. During the registration, enter the 'General Chemistry' course link and then select your textbook, school, and class (General Chemistry B - Spring 2011 - Jan Florian). Homework assignments will be due every Thursday at 10:00 AM and will be posted at least one month before their due date. Overdue homeworks will not be accepted.

Grading scheme: Your grade will be calculated using grading points that you earned in three exams, homework assignments (OWL), and during lectures and discussions (i-clicker): Entry, midterm and final exams will contribute maximum of 13, 30 and 52 grading points, respectively. Students who miss or under-perform on the entry exam will have the weight of their midterm and final exam raised by 5 and 8 grading points, respectively. In-class participation will contribute maximum of 10 grading points. To obtain 1, 2, 3, 4 or 5 in-class participation points students need to correctly answer 35, 45, 55, 65 or 75%, respectively, of in-class problems using iClicker device registered in their name. I-clicker points will be awarded on midterm and final exam days (2 x 5 = 10 points). Maximum total points that you earned during OWL assignments will be scaled down to contribute 15 grading points. Additionally, each student whose exam score (in %) will exceed 50, 60, 70, 80 or 90% of his OWL score (in %) at the time of the midterm and final exam will receive extra 1, 2, 3, 4 or 5 points, respectively, for each of these exams (2 x 5 = maximum of 10 grading points). Grades will be assigned using the following scale (100% = 130 total grading points):

Earned Points	Letter Grade	Earned Points	Letter Grade
> 104	A	61 – 68	C
96 – 104	A-	54 – 61	C-
89 – 96	B+	47 – 54	D+
82 – 89	B	40 – 47	D
75 – 82	B-	40 or less	F
68 – 75	C+		

Ethical Considerations:
Students will not collaborate on any exams or OWL homeworks. Only those materials permitted by the instructor may be used to assist in examinations. Students will not represent the work of others as their own. Any student caught cheating during an exam will be reported to the Deans office and will receive zero points for the given exam. Is a student looses control of his i-clicker he/she needs to report this fact to the instructor prior to the next class. A correct in-class response from an i-clicker that belogs to a student who is not present in class invalidates all in-class participation points of this students for the entire course.

Tutoring center:
The Tutoring Center offers free small group tutoring for Loyola students. The groups meet once a week through the end of the semester and are led by a student who has successfully completed study in the course material. To learn more or request tutoring services, visit the Tutoring Center online at www.luc.edu/tutoring.

Tentative Schedule
Week 1 Ch 13,14: Solids, Lattice Energy, Phase diagrams, Solutions, Enthalpy of Solution. **Entry Exam.**
Week 2 Ch 14, 15: Colligative properties. Rates of chemical reactions, rate laws, rate constants.
Week 3 Ch 15: Microscopic view of reaction rates, reaction coordinate, catalysis, reaction mechanisms.
Week 4 Ch 16: Equilibrium constant, reaction quotient, Le Chatelier's principle.
Week 5 Ch 17: Acids and bases. pH scale.
Week 6 Ch 17: Equilibrium constants for protonation of acids and bases. Solution pH. Polyprotic acids and bases.
Week 7 Ch 18: Common ion effect, buffer solutions and their preparation, acid-base titrations. **Midterm Exam.**
Week 8 Spring break (March 7 - 12)
Week 9 Ch 18,19: Solubility of salts. Entropy.
Week 10 Ch 19: Spontaneity of chemical reactions.
Week 11 Ch 19: Free energy. Easter Break.
Week 12 Ch 20: Electron transfer reactions. Balancing oxidation-reduction reactions. Electrochemical cells.
Week 13 Ch 20, 22: Standard reduction potentials. The Nernst equation. Electrolysis. Coordination compounds.
Week 14 Ch 22,23: Origin of the color of coordination compounds. Magnetic properties. Nuclear decay.
Week 15 Ch 23: Decay kinetics. Fission and fusion. Radiocarbon dating.
May 3 **Final Exam**, FH-auditorium, 6:30 – 8:30 pm