

Chemistry 102: General Chemistry B

Spring Semester 2010

Instructor: Jan Florián

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Lecture: Tuesday, Thursday, 6:30 PM – 7:45 PM, FH-auditorium
Discussion: Thursday, 8:00 pm – 8:50 pm, FH-105, 007
Office Hours: Tue 8:00 – 9:00 PM, We 2:00 – 3:00 PM, Th 9:00 – 9:30 PM

Prerequisites: Chem101

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 on Blackboard.
3. a non-programmable calculator, capable of scientific notation.

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: Chemistry 102 is the second semester of a two-semester series in general chemistry. The course describes the 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 text; a schedule of lecture topics accompanies this syllabus. Your attendance at lecture and discussion is expected. The correct answers of the 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 the questions relevant to the covered material during the lecture and the discussion.

Exams: Two 75 minute exams and one 120 minute final exam will be given during semester. The final exam is cumulative. Make-up exams will be allowed for excused absences. If the student disagrees with his score for the exam, he must request re-grading within one week from the day he received the graded exam. Significant percentage of exam questions will be similar to those from OWL and Discussion.

Homeworks: Homework problems use the Online Web-based Learning (OWL) system. You will need to buy OWL access code and register at <http://www.cengage.com/owl> before accessing the homeworks for the first time. During the registration, enter the ‘General’ course link and then select your textbook, school, and class (Chem_102_017). Homework assignments will be due every Th at 10:00 AM and will be posted at least one week before their due date. Overdue homeworks will not be accepted.

Grading scheme: Your grade will be calculated using your scores from the three exams, homework assignments and activity points. These scores will be weighted as follows: Exams 1, 2 will contribute 28 points each, homeworks 25 points, the final exam 50 points, and in-class participation (iclicker response) 9 points, for a maximum of 140 points. Grades will be assigned according to the following scale:

Earned Points	Letter Grade
>120	A
110 – 120	A-
102 – 110	B+
96 – 102	B
89 – 96	B-
80 – 89	C+

Earned points	Letter Grade
72 – 80	C
63 – 72	C-
56 – 63	D+
47 – 56	D
47 or less	F

Ethical Considerations:

Students will not collaborate on any exams or OWL homeworks, unless permission is granted by the instructor of the course. 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.

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,
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: Exam 1. 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.
Week 8	Spring break (March 9 and 11)
Week 9	Ch 18,19: Solubility of salts. Entropy.
Week 10	Ch 19: Spontaneity of chemical reactions. Free energy.
Week 11	Exam 2. 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 4	Final Exam, FH-auditorium, 6:30 – 8:30 pm