

Chemistry 102: General Chemistry B

Spring Semester 2015

Instructor: Jan Florián

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Lecture: Tuesday, Thursday, 6:00 – 7:20 PM, FH-auditorium
Discussion: Tuesday/Thursday, 7:30 – 8:20 PM, FH-auditorium
Office Hours: Tue, Thr 8:30 – 9:00 PM, Wedn 2:00 – 3:00 PM

Prerequisites: General Chemistry A (CHEM 101)

Textbook: “*Chemistry the Central Science*” 10th, 11th, 12^e or 13th edition, by Brown, Lemay, Bursten, Murphy and Woodward

Required Materials:

1. “Mastering Chemistry online learning system for *Chemistry the Central Science, 13th edition*” You can register and/or buy the Mastering access code online at <http://masteringchemistry.com/site/register/new-students.html> for \$66 (\$110 with eText).
2. A calculator capable of scientific notation.

Recommended Materials:

- “*Chemistry the Central Science, 13th edition eText* (can be purchased packaged together with *Mastering Chemistry*)
- “*Student’s solution manual*” for your textbook

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 – 17, 19 – 21 and 23 of Brown’s text; a schedule of lecture topics accompanies this syllabus. Your attendance at lecture and discussion is expected. The correct answers of the quiz and exam questions may require knowledge of all information presented in the lecture, discussion, textbook, and Mastering. 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.

Homeworks: Homework problems use the *Mastering Chemistry* online learning system. You will need to buy the access code and register at <http://masteringchemistry.com/site/register/new-students.html> before accessing the homeworks for the first time. During the registration, select your textbook, school, and the course id **CHEM102FLORIAN2015**. Homework assignments will be due every Mo, We, Fri at 10:59 PM.

Exams: Five 50 minute multiple-choice mid-semester 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. For the absence to be classified as excused, students must notify the instructor about their absence before the exam and provide valid excuse (e.g. a doctor’s note) that covers the exam day and all days between the exam and make-up exams. The doctors note must be signed and contain legible name, hospital/office address and phone number and the reason for the absence. If the student disagrees with her/his score for the exam, she/he must request re-grading within one week from the day he/she received the graded exam. The exam questions may originate from a testbank from any college general chemistry textbook that covers the same material as our textbook.

Grading scheme: Your grade will be calculated using grading points that you earned in your best four mid-semester exams, final exam and homework assignments: 100% on each mid-semester exam = 14 grading points, 100% on the homework problems = 10 grading points, 100% on the final exam = 34 grading points. Your weakest mid-term exam result will be disregarded. Thus, the maximum total number of grading points that you can earn at the semester end is $4 \times 14 = 56$ (for mid semester exams) + 34 (for the final exam) + 10 (for the homeworks) = **100 grading points**.

Grades for the class will be assigned according to the following scale

Earned Grading Points	Letter Grade	Earned Grading Points	Letter Grade
85 – 100	A	55 – 60	C
80 – 85	A-	50 – 55	C-
75 – 80	B+	45 – 50	D+
70 – 75	B	40 – 45	D
65 – 70	B-	40 or less	F
60 – 65	C+		

Midterm grade: Your midterm grading points will be based on your best three mid-semester exam results and homeworks that will all carry the same weight (i.e. 25 grading points each for a maximum of 100 grading points). Your midterm grade will be calculated using the same scale as your final grade (see above).

Activity ('nice') points: Correct answers of instructor's questions during lectures and discussions, insightful questions from the students that complement the lecture or discussion, correct corrections of substantial errors made by the instructor, and correct solution of the problems on the board during the discussion may receive appreciation from the instructor in the form of 'nice' points. Nice points awarded for student questions are limited to one point per one student per one lecture. Each student can submit only two questions or one error correction per lecture that can be considered for issuing a nice point. A student must claim his/her nice points with the instructor at the end of the class in which the points were issued (i.e. leaving class early will result in a loss of all nice points issued to the student during that class). **12 students with highest number of nice points at the end of semester will receive two extra grading points that will be added to their total grading points from exams and homeworks. 12 additional students with the next highest number of nice points will receive one extra grading point.** The issuance of nice points is fully at the discretion of the instructor and cannot be disputed by the students. However, the issuance of nice points and extra grading points can be stopped any time during semester by the petition signed by more than 50% of the total number of students enrolled in the class at the day when the petition was delivered to the instructor.

Ethical Considerations:

Students will not collaborate on any exam or homework. Only those devices and materials permitted by the instructor may be used to assist in examinations. Students will not represent the work or nice points of others as their own. During the examinations, students must follow the seating arrangement determined by the instructor. Any student caught cheating during exam, or student who modifies his/her exam after it was returned back to him/her for inspection 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 (exact exam dates and coverage will be announced in class and on Sakai)

Week 1	Ch 13: Properties of solutions, colligative properties.
Week 2	Ch 14: Exam 1 (exam 1 will cover chapters 1 - 11) Rates of chemical reactions, rate laws, rate constants.
Week 3	Ch 14: Microscopic view of reaction rates, reaction coordinate, catalysis, reaction mechanisms.
Week 4	Ch 15: Exam 2. Chemical equilibrium, equilibrium constant, reaction quotient.
Week 5	Ch 15: Calculating and applications of equilibrium constants, Le Chatelier's principle.
Week 6	Ch 16: Acids and bases. pH scale.
Week 7	Ch 16: Exam 3. Protonation of acids and bases. Solution pH. Polyprotic acids and bases.
Week 8	Spring break (March 2 – 7)
Week 9	Ch 17: Common ion effect, buffer solutions and their preparation, acid-base titrations.
Week 10	Ch 17: Solubility equilibria. Exam 4. Last day to drop the class (March 23)
Week 11	Ch 19: Spontaneity of chemical reactions, entropy, second law of thermodynamics.
Week 12	Ch 19: Free energy. Easter (April 2 – 6)
Week 13	Ch 20: Electron transfer reactions. Balancing oxidation-reduction reactions. Electrochemical cells. Exam 5.
Week 14	Ch 20: Standard reduction potentials. The Nernst equation. Electrolysis.
Week 15	Ch 24,21: Coordination compounds. Magnetic properties. Nuclear chemistry.

Final Exam, TBA