

Chemistry 102-001 – Fall 2014 -- Syllabus

Course:	Chemistry 102, General Chemistry B; 3 Credits: Lecture and discussion
Prerequisites:	Chemistry 101 or 105 and completion of Math 118 with a grade of C- or better. A student may be withdrawn from the course at any time if the prerequisites have not been satisfied.
Lecture:	MWF 2:45 – 3:35 pm Galvin Auditorium Section 102-001 You must also register for and attend one of the accompanying discussion sections:
Discussion:	Th 11:30am; 1:00pm Flanner 7
Textbook:	<u>Chemistry The Central Science</u> , Brown/LeMay/Bursten/Murphy/Woodward, 12 th edition MasteringChemistry online access code for the above text (Required)
Instructor:	Dr. Sandra Helquist
Email:	shelquist@luc.edu – put only “Chem 102-001” in subject line to receive a response
Office:	Flanner Hall 200B
Office Hours:	M 4-5pm, W 12:30-2pm, additional times TBA (see Sakai for updates) and by appt & drop-in

Course Content & Objectives

This lecture and discussion course is a continuation of Chemistry 101 and includes topics on solutions, kinetics, equilibrium systems, acids and bases, chemical thermodynamics, electrochemistry, and nuclear chemistry. Building on the basic principles learned in the 101 course, students will deepen their conceptual understanding of specific complex topics in chemistry, and further develop their skills in scientific problem solving for use in higher-level courses in chemistry, other sciences, and related disciplines.

IDEA Objectives: Gaining factual knowledge (terminology, classifications, methods, trends)

Learning fundamental principles, generalizations, or theories

Learning to *apply* course material (to improve thinking, problem solving and decisions)

Gaining a broader understanding and appreciation of intellectual/cultural activity (music, science, literature, etc)

Acquiring an interest in learning more by asking questions and seeking answers

Course Materials

There is a required textbook/eText for class and it is optional to purchase a student guide and/or solutions manual to accompany the text. Additionally, registration is required for the MasteringChemistry online homework system (www.masteringchemistry.com & additional information/links on Sakai). Students that choose to use an alternate version of the textbook must do the extra work to align their reading/figures/problems with the current edition. Each student will need the use of a scientific calculator for problem solving – only calculators approved for use on the ACT exam are permitted – all calculator memory must be cleared prior to use on exams. Calculators cannot be shared between students. Lectures will be presented as a combination of “chalk talks” and slides/links/animations. Course materials will be posted on Sakai (sakai.luc.edu) and quiz/exam scores will be recorded in the grade center. The Announcements/Email functions in Sakai will be used regularly to communicate useful information.

Time Investment

For a second-semester general chemistry course, it is anticipated that the average time required to learn the material in order to achieve a minimal passing grade of C- is 9-12 hours per week, every week, not just before exams, of independent working time outside of class (reading, homework, office hours, group study sessions, additional preparation) spent the student. This time is merely an estimate and it is up to each individual student to devote the time necessary to achieve the desired course grade. Studying needs will also vary depending on the prior knowledge of each student and the difficulty of the course material as the semester progresses.

Academic Integrity

You are encouraged to study with other students in and out of class, however, anything submitted for an individual grade during or outside of class must represent your own knowledge and understanding of the material. Evidence of cheating (for homework, quiz, or exam) will result in, at a minimum, a “zero” on the item and penalty up to failure of the course, as well as referral to the Dean’s Office. For the Undergraduate Catalog statement on academic integrity, visit: http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml

Disability Accommodations

Students requiring accommodations at the University need to contact the Coordinator of Services for Students with Disabilities. The instructor will provide accommodations after receiving documentation from SSWD and allowance of a reasonable time frame for arrangements (minimally, one week in advance). Accommodations cannot be retroactive. Information is available at: <http://www.luc.edu/sswd/>

Class Attendance

Vital for your learning: you are responsible for all material presented or handed out, as well as reading and problems recommended in lecture and discussion even if you are not in attendance for a course meeting. Attendance and Attention is important and expected of all students. Prepare for lecture by scanning the new material to be covered. Come prepared to engage in discussion, ready to ask and answer questions on course material -- especially bring questions to discussion classes. If you miss a class for any reason, contact a classmate promptly to get the notes.

Grading

Generally, a Total score of 88.0% is the lowest A-, 75.0% the lowest B-, 60.0% the lowest C-, 50.0% the lowest D. Chemistry is not easy to learn, thus the grading policy rewards students for keeping up with the material via completion of homework and group quizzes, as well as two grading options for the exams (see details below). Note that letter grades are assigned based on your Total score, not based on individual assignments, quizzes, or exams.

Homework	15%
Group Quizzes	10%
<u>Exams</u>	<u>75%</u>
Total score	100%

Homework

Due 11:59pm TuThSu, online, at <http://www.MasteringChemistry.com>. MC questions include problems over a range from easy to moderate to difficult-level questions and are meant to: (1) Help you learn the material by practicing it yourself; (2) Serve as an aid to your overall course grade as you make the effort to learn. Each assignment will contain on average, 40-50 minutes of material. Take your time doing homework problems: they are meant to help you learn, they are not test-specific preparation. Work the problems mindfully, review feedback provided even after you obtain a correct answer, and review any incorrect answers as well to determine why/how you can distinguish from the correct answer. The more you focus on doing the problems to learn from them (not just for points/completion), the less time you will need to spend working additional problems later, or trying to cram for exams. If you struggle with a homework problem, come to office hours promptly for help. Completion of the homework problems is the minimum amount of practice required for learning: most students will need to reinforce knowledge and further develop their problem-solving skills by working end-of-chapter problems daily.

Group Quizzes

No early quizzes, no make-ups: *any missed quiz is scored as a zero*. Quizzes include exam-level (moderate-to-difficult) long-answer problems and are completed in discussion, in small groups to be announced by the instructor. Work must reflect efforts of ALL group members, and is meant to foster cooperation and communication between students, in addition to consultation with the instructor, to help you learn the material. If you struggle with any part of a question in the group session, get help as needed and keep practicing (studying) until you can work similar and related problems from the textbook on your own. Your overall quiz score is the average of your best ten scores.

Exams

No early exams, no make-ups! Exams will consist of multiple-choice and long-answer questions. Exams comprise 75% of your course grade, and will be automatically calculated by the instructor as the higher score of two options:

Option 1: All 3 midterms, 15% each; final exam, 30%; Total exam score = 75%

Option 2: Best 2 midterms, 15% each; final exam, 45%; Total exam score = 75%

Midterms: 50 minutes, September 19, October 17, November 10. If you miss a midterm *for any reason*, Option 2 will automatically be used to determine your grade. A second missed midterm will result in a score of *zero* counted in your course grade. It is in each student's best interest to prepare for and take all exams.

Final: 2 hours, Thursday December 11, 1-3pm. *Mandatory: a missed final exam will result in a course grade of F.* The final exam must be taken on the date scheduled per College of Arts and Science policy.

Exam Day Procedure

Phones, tablets, wireless devices, etc are not permitted. If seen or heard, device will be confiscated along with exam copy and student will be dismissed. Seating arrangements may be altered before or during the exam. Show up early with three items: (1) your Loyola ID, visible on desk to be checked during exam; (2) pencil(s) or standard blue/black ink pen(s); (3) working approved calculator (www.actstudent.org/faq/calculator.html), with the memory cleared, to be checked during exam, extra batteries are recommended. All jackets, bags, loose accessories, etc must be left at the front of the classroom. Once the exam is distributed, if you exit the room (quietly, please), for any reason before time is up, your exam is considered complete and will be collected. I will return your midterm exams *during the discussion periods or in office hours* (copies will be kept). Scoring errors must be brought to my attention in person no later than one week after the exams are returned. The final exam cannot be returned.

Studying Strategies and Suggestions

Students often ask “how do I get an A in this class?” The simple and difficult answer is that grades are earned based on quality of achievement in the course, with an ‘A’ earned by demonstrating complete (not partial) mastery of all (not some/most) of the course material on all exams, quizzes and homework: there are no easy shortcuts to learning! If you intend to earn an ‘A’ for the course, you must do enough quality practice so that you can rapidly recognize and answer each question on each exam correctly the first time through. How do you learn the material well enough to demonstrate it on exams? Please continue reading for the best suggestions I have from my own experience as a student and as a teacher, and the experiences of my mentors, colleagues, and former students. My primary concern is to provide you with the tools, environment, and encouragement to learn chemistry, and from there it is up to you.

Taking Ownership of Your Learning: Almost all of you are in Chem 102 because you have taken at least one prerequisite college chemistry course. Most of you have also taken other college courses in science, math, arts, and humanities. By now you should appreciate that the approach you take to learn the material will vary between subject areas and courses. I encourage each of you to take ownership of your learning, such that you will determine, as an individual, what you must do to achieve your desired level of success in this course. The learning skills that you develop in this and other courses at Loyola are meant to help you develop into an independent, lifelong learner.

General Suggestions: Good knowledge of the material from Chem 101 (Chapters 1-11) is assumed and necessary for this course. If you do not remember particular topics, review immediately and seek help as needed. There are some things in Chemistry that must simply be memorized, but do not confuse rote memorization with learning a concept. Try multiple methods for probing your understanding of the material and ask questions often. Problem-solving in general and in Chemistry in particular is a skill that can be learned and improved with dedicated practice. You are encouraged to form study groups – talk to your classmates and exchange contact information – and attend office hours and tutoring regularly to receive help. Take advantage of all the resources Loyola offers for support early and often. You are urged to contact the instructor to discuss problems before they become serious.

Step-By-Step Daily Studying Practices aka Learning the Course Material: Many students focus on studying for exams. Most instructors ask their students to focus on learning the course material so that you can demonstrate that learning on exams (as well as other assessments). The difference is that learning new material and problem-solving approaches requires frequent focused practice, practice under pressure, and often some coaching. In particular, to truly learn Chemistry you must go beyond memorization of facts and equations to understand the fundamental concepts. Even for problems involving calculations, the basis of what you are doing comes from conceptual understanding. Because many topics we will cover build heavily on prior material, the best plan is to study chemistry regularly, every day, 2.5-3.5 hours of independent working time for each hour you spend in class. Before each lecture, it is expected that you will quickly scan the chapter/sections to be covered (sections are generally covered in order), taking note of key definitions, formulas and concepts, in order to improve lecture comprehension. In lecture and discussions, ask and answer questions with the instructor and your classmates. After lectures, detailed re-reading of the textbook is very important, along with working the practice exercises contained within the text sections to immediately test comprehension of the material covered. You are then expected to ask follow-up/clarifying questions, and to complete the assigned homework problems by the next lecture meeting. Additional rounds of questions for the instructor are appropriate, brought to office hours or discussion classes in particular. Finally, work as many additional problems as needed to gain comprehensive mastery of the material, and repeat the process of working problems and asking questions until you can solve the most difficult problems on the first try without your notes or other assistance. Practice, practice, practice – every day!

If you have followed the Step-By-Step Daily Studying Practices above, you have already studied for your exams by learning the course material! Begin to review for each test a few days in advance. You may wish to use the Chapter Summary, Key Terms, and Key Skills listed at the end of each chapter as a review tool, or to make your own study guides from lecture outlines or quizzes prior to exams. Find a review method that works for you: meet with classmates and quiz each other, make your own quizzes from the textbook problems and/or Mastering Study Area, bring additional questions to office hours. When you are taking any exam, read the instructions and questions carefully, spend your time well on problems you know you can solve, and show all of your work and answers.

Other Items

A link to the official Loyola calendar can be found here: <http://luc.edu/academics/schedules/index.shtml>

For information about Loyola tutoring in the Sullivan Center, see: <http://www.luc.edu/tutoring/>

A list of Highly Recommended Textbook problems is posted under Course Materials on Sakai.

A Tentative Lecture Schedule is posted under Course Materials on Sakai.

Best wishes for a successful semester. Let me know what I can do to help you succeed in this course.