

General Chemistry 101 - Fall 2015

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Lecture Tues & Thurs 2:30-3:45 p.m. Sullivan Center-Galvin Auditorium (Sect 017)

Discussion Mon 10:25-11:15 a.m. Flanner Hall Room 105 (Sect 018)
 Mon 12:35-1:25 p.m. Flanner Hall Room 105 (Sect 019)
 Mon 1:40-2:30 p.m. Flanner Hall Room 105 (Sect 020)

Office Hours Tues & Thurs 4:00 p.m. – 6:00 p.m.

Required Text: Brown, LeMay, Bursten, Murphy, Woodward Chemistry-The Central Science 13th Ed.
 ISBN 978-0-321-69672-4

1. *Exam Dates (subject to change):*

Tuesday, September 15, 2015:	Mid-term Exam 1
Thursday, October 22, 2015:	Mid-term Exam 2
Tuesday, November 17, 2015:	Mid-term Exam 3
Thursday, December 12, 2015:	Final Exam, 4:15-6:15 p.m.

2. *Exams and Grading:*

There are three 75-minute mid-term exams and one 2-hour final exam. The lowest of the three mid-term exams will be dropped. If you miss an hourly exam, that is the exam that will be dropped. No make-up mid-term exams will be given under any circumstances. The final exam is cumulative and cannot be dropped. A calculator may be used during the exam. All graphing calculators memory will be cleared prior to the start of every exam.

MasteringChemistry Homework	50 points
Discussion	48 points
Mid-term exam	100 points (Best two out of three mid-term exams)
Mid-term exam	100 points
<u>Final Exam</u>	<u>150 points</u>
TOTAL	448 points

You must bring a form of photo identification, such as your Loyola Student ID or your driver's license, with you to the exam. During exams, you will be required to leave your books, backpacks, notebooks, etc. at the front of the room. All exams are closed book and closed notes unless otherwise noted. When you are finished with your exam, please bring your completed exam to the front, and leave the room quietly without disturbing the other students.

Exams will be graded and returned to you as quickly as possible, usually by the following week. All grading questions, points of clarification, and grading errors must be brought to the instructor's attention during office hours no later than one week after return of the exam.

The grading scale used to determine letter grades are as follows: **A** 100 – 93, **A-** 92 – 86, **B+** 85 – 82, **B** 81 – 78, **B-** 77 – 74, **C+** 73 – 70, **C** 69 – 65, **C-** 64 – 62, **D** 61 – 50, **F** < 50.

3. *MasteringChemistry Homework (ZOSNERCHEM101FALL2015017)*: There will be MasteringChemistry homework sets assigned on Sundays at 12:00 p.m. for each week of material that we cover. The assigned homework will be due the following week on Sunday at 11:59 p.m. Each week's assignment will be worth 4 points for a total of 60 points. Only 50 points will count towards your final grade. Any points earned over 50 will be counted as extra credit. Late assignments will not be counted for credit.

4. *Discussion*: The discussion section will be devoted to working on discussion hand-outs and answering questions regarding homework problems. *Attendance and participation are mandatory and worth 4 points per class.* There are 14 discussion classes, but you will receive attendance points for 12 classes. If you miss a class, you will not be able to make up any lost points. If you attend ALL 14 classes, you will earn 8 extra credit points. No make-up discussion points will be given under any circumstances.

5. *Norms of Course Proceedings*: The classroom is to be a safe place to question and explore ideas. Student and teacher voices are important to this work. Collegial disagreement can be a healthy part of this process, but must always include respect for all members of the class.

Course activities will be designed to help students reach the goal of learning chemistry content and developing critical thinking skills. This will more often be driven by the use of data and reasoning to discover concepts and solutions rather than the identification and exchange of chemical facts and algorithms.

Students are expected to read individually on their own time outside of class.

Class sessions will begin and end on time. All students should attend class regularly and participate in class discussions. Absences could affect one's ability to learn chemistry during this session. Anticipated absences should be discussed with the instructor two class days before the absence. Proper documents may be requested to verify the reason for any absence. No make-up exams will be granted for any absence during an exam day, no matter what the excuse

6. *Sakai Materials*: Handouts given in class will be mirrored on Sakai.

7. *Course Content & Objectives*: This course is the first in a two-semester sequence of general chemistry. We will focus on building a conceptual understanding of fundamental chemical principles including properties of atoms, molecules, states of matter, and chemical reactions. Students will learn the language of chemistry and develop their skills in scientific problem solving and critical thinking. This will serve as a foundation for further study in chemistry, other sciences and related disciplines.

- Differentiate types of matter based on their chemical and physical properties (for example, pure substances vs. mixtures, metals vs. nonmetals, ionic vs. covalent vs. metallic, electrolyte vs. nonelectrolyte).
- Use multiple perspectives of matter (macroscopic, particle, symbolic levels) to qualitatively describe and explain characteristics, properties, and relationships of the following: atomic structure, periodicity, molecular structure, chemical bonding, chemical reactions, thermochemistry, aqueous solutions, gases, liquids and solids.
- Quantify relationships between variables controlling chemical systems.
- Solve quantitative multistep problems combining multiple concepts within the systems.
- Differentiate among closely related factors, categorize problem types, and select appropriate tools to solve problems.
- Apply chemical principles to explain natural phenomena.

8. *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

9. *Academic Honesty:* All students in this course are expected to have read and abide by the demanding standard of personal honesty, drafted by the College of Arts & Sciences, that can be viewed at:

http://www.luc.edu/cas/pdfs/CAS_Academic_Integrity_Statement_December_07.pdf

Anything that you submit that is incorporated as part of your grade in this course (*e.g.* quiz, examination, homework, lab report) must represent your own work. Any students caught cheating will, at the very minimum, receive a grade of “zero” for the exam that was submitted and this grade cannot be dropped. If the cheating occurred during a course exam, the incident will be reported to the Chemistry Department Chair and the Office of the CAS Dean. Depending on the seriousness of the incident, additional sanctions may be imposed.

10. *Strategies and Suggestions:*

- The best method of learning chemistry is to work the assigned problems and write out the answers. *Then* check your answers versus the Answer Key.
- Study at least 10 hours per week and maintain a steady pace of studying. Chemistry continually builds, like a language, so studying some every day is most effective.
- Skim the current chapter before the corresponding lecture, so that you will be aware of the topics to be covered.

11. *Practices for Success:* Supporting claims with evidence, making applications, solving and analyzing problems, and using chemical principles to explain phenomena are critical skills in the field of chemistry. The development of these skills is not without some frustration, but it carries the reward of deepening one’s ability to think critically and solve problems in any field. The use of targeted, guiding questions, regularly scheduled work, and strategic study plans can greatly assist the learning of chemistry. With such a focus, hopefully any frustration will quickly turn to appreciation and fascination for the relevance and connectedness of chemistry in your life and within the world around you. Solving and analyzing problems is the most important feature of this work. If, at any time, you need assistance framing such plans for your work in chemistry, please do not hesitate to ask the instructor.

12. *Office Hours:* My office door will be open per the times listed. Please use this time to if you have extra questions regarding this course. If you are unavailable to meet at the listed times, please feel free to email me with any questions. However, if you email me at night (after 6:00 p.m.), on weekends, or during holiday breaks I will respond to your email within 12 hours.

13. *Students with Disabilities Policy:* Eligibility for services is determined on an individual basis based on documented need. Self-disclosure and the submission of documentation can be initiated anytime during the year. However, reasonable time must be allowed before the student can expect accommodations to be in place. Self-disclosure and documentation are required only if students plan to request accommodations. Students should provide information and documentation at a reasonably early date to allow time for the development and arrangement of appropriate accommodations. In some cases, several weeks’ advance arrangement is needed. Accommodations cannot be retroactive. Accommodations begin only after documentation is received and reasonable time for accommodation development has been allowed.

<http://www.luc.edu/sswd/index.shtml>

General Chemistry 101 Tentative Lecture Schedule (subject to change)

8-25	1	Introduction: Matter and Measurement
8-27	1/2	Introduction: Matter and Measurement/Atoms, Molecules, and Ions
9-1	2	Atoms, Molecules, and Ions
9-3	3	Stoichiometry: Calculations with Chemical Formulas and Equations
9-8	3	Stoichiometry: Calculations with Chemical Formulas and Equations
9-10	3	Stoichiometry: Calculations with Chemical Formulas and Equations
9-15	--	EXAM I (Chapters 1-3 or as announced)
9-17	4	Reactions in Aqueous Media
9-22	4	Reactions in Aqueous Media
9-24	4/5	Reactions in Aqueous Media/Thermochemistry
9-29	4	Reactions in Aqueous Media
10-1	5	Thermochemistry
10-6	--	<i>Fall Break (no class)</i>
10-8	5	Thermochemistry
10-13	5/6	Thermochemistry/Electronic Structure of Atoms
10-15	6	Electronic Structure of Atoms
10-20	6	Electronic Structure of Atoms
10-22	--	EXAM II (Chapters 4-6 or as announced)
10-27	7	Periodic Properties of the Elements
10-29	7	Periodic Properties of the Elements
11-3	8	Basic Concepts of Chemical Bonding
11-5	8	Basic Concepts of Chemical Bonding
11-10	9	Molecular Geometry and Bonding Theories
11-12	9	Molecular Geometry and Bonding Theories
11-17	--	EXAM III (Chapters 7-9 or as announced)
11-19	10	Gases
11-24	10	Gases
11-26	--	<i>Thanksgiving Break (no class)</i>
12-1	10/11	Gases/Intermolecular Forces
12-3	11	Intermolecular Forces
12-12	--	FINAL EXAM CUMULATIVE 4:15-6:15 p.m.