

COURSE SYLLABUS, CHEM 101-026 General Chemistry (6690)

Fall 2017 (August 28th, 2017-December 16, 2017)

Instructor: Dr. Sergey Maximoff
Office: Flanner Hall 314A
Office Hours: Tuesday 11:30 AM-12:30 PM or by appointment
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Class shall meet in Cuneo Hall - Room 109 every Tuesday and Thursday 10:00 AM - 11:15 AM for lectures and in Cuneo Hall - Room 312 every Thursday 11:30 AM - 12:20 PM for discussions.

Course overview

This general chemistry course will introduce you to basics of atomic and molecular structure, periodicity, chemical bonding, stoichiometry, thermochemistry, aqueous solutions, and gases. These subjects contribute to the foundation for your future studies in chemistry or other disciplines that depend on chemistry (medicine, forensics, biology, physics, engineering, agriculture, geology, etc.). The course will help you to gain a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories). It will teach you how to apply course material to improve thinking, problem-solving and decision-making. The lectures and textbook will introduce you to basics of chemistry and its applications. Homework and discussions in class will help you learn through practice.

Required course materials

Textbook: *T.L. Brown et al., Chemistry the Central Science 14th edition.*

Online homework and study system: *MasteringChemistry*. You will need to enter Course ID: MCMAXIMOFF52795. You will also require access to the Internet, a compatible computer, and software to be able to use *MasteringChemistry*.

Laptops: You will also need to bring to class a laptop that can access and run *MasteringChemistry* on the LUC network. You may also need to use your laptop in class to access other material relevant to the course. Laptops can be used in class only at times and only in the manner authorized by the instructor.

SAKAI access: Course-related announcements will be posted on *SAKAI*. You will need access to sakai.luc.edu. It is your responsibility to make sure that you receive and read course-related updates on *SAKAI*.

Miscellaneous items: A scientific calculator that cannot store text, notepad, pencils, pens, erasers.

Mandatory prerequisites

Satisfactory performance on the Loyola math proficiency test or Math 117 completed with a grade no worse than C-.

Lectures and reading

We will cover chapters 1-10 and parts of chapter 21 of *T.L. Brown et al., Chemistry the Central Science*. Reading assigned sections of the textbook before and after lectures is essential. Lectures may deviate from the textbook. Students who do not study lecture material and textbook before homework and exams perform poorly on exams and underperform in the course.

Homework

Homework sets are posted in *MasteringChemistry* as the course progresses. The assignments are due on Monday, Wednesday, Friday at 10:59 PM. Timely completion of homework is required.

It is a good idea to work on homework incrementally and not wait until it is due.

The primary purpose of homework is to give you an opportunity to learn through practice. The chances of your success in the course will be much higher if you complete all homework assignments and make sure you understand the material. Students who do not do homework properly and timely typically do very poorly on exams and, ultimately, fail the course.

Different people have different learning styles. It is irrelevant how you learn from homework. It is very relevant, however, that homework answers reflect your own command of the material.

Your performance on homework problem sets will constitute 15% of your course grade.

See the grading policy posted at *MasteringChemistry* for details regarding grading of individual homework sets.

If you are not experienced with *MasteringChemistry*, you are strongly encouraged to complete a practice tutorial. This tutorial explains how to use *MasteringChemistry*. It will not be graded.

Discussions

We will have discussions in class every Thursday. You will have an opportunity to collaborate on problems with your fellow students in small groups while I provide interactive feedback. Discussion points are awarded after students both actively participate in class and solve problems in discussion sheets. Students who do not understand how to solve discussion problems tend to perform poorly on exams and have high chance of failing the course.

Discussion participation grades will constitute 5% of your course grade.

Two lowest discussion grades will be dropped.

Quizzes

Thorough and timely familiarity with the textbook and lecture material is essential for your success in this class. We will have occasional closed-book quizzes that test your knowledge and understanding of the textbook and lecture material covered. You will need your laptop running *MasteringChemistry* to participate in quizzes in class.

Your average performance on quizzes will constitute 5% of your course grade.

No make-up or early quizzes will be arranged. However, two lowest grades for quizzes will be dropped.

Exams

There will be a total of four in-class exams for this course. There will be three 75-minute long midterm in-class exams at the beginning of classes on Thursdays, September 21 (Exam I), October 17 (Exam II), and November 23 (Exam III). The final cumulative exam two-hour long exam will be held on a date TBD. Please arrive on time.

No early or make-up exams for the midterms exams I-III will be arranged. However, the lowest grade for the midterm exams I-III will be dropped. For example, if you miss a single midterm exam, your grade for that exam would be zero, which will be dropped. However, you will not be able to drop grades for the remaining exams in this scenario even if one of those grades happens to be lower than you would like. Thus, it is safer for you to take all four exams if you can.

The average of two highest scores for the midterm exams I-III will constitute 45% of your course grade.

The final exam is mandatory for passing the course. If you miss the scheduled final exam for a valid reason, you are responsible for arranging for a make-up exam. Valid reasons are exceptionally rare (e.g., documented medical emergency). You will have to file a written request for the make-up final exam (including valid documents that justify your absence at the scheduled final exam) with your dean's office. Upon receiving approval directly from the dean's office, a make-up final exam will be administered at the time and date agreed upon by the dean's office. In absence of a valid and documented excuse for missing the final exam, the course grade will regress to an F.

The final cumulative exam will contribute 30% to your total score for the course.

Exams are here primarily to assess your command of the material rather than to provide learning opportunities. Exams must be your work and only your work. Students may not communicate with each other or with the outside world during the exam. Use of any printed, electronic, or any other kind of informational resources or aids other than those explicitly provided or authorized by the instructor is strictly prohibited during exams. A simple scientific calculator will be needed. Cell phones, computers, complex calculators (such as those that can store text or can graph) are not proper calculators for the exams. It is your responsibility to have a proper calculator during exams and know how to use it. Calculators cannot be shared during the exam. Calculator covers must be removed and stored away. I will not be able to provide calculators.

All grading errors and questions must be brought up to attention of the instructor within a week after graded exams are returned. No challenges to exam score may occur beyond the above time frame.

Honor code

Academic integrity is essential (see the university policy document <http://luc.edu/media/lucedu/cas/pdfs/academicintegrity.pdf>). Policy violators will be referred to the university administration for possible disciplinary action. In addition, cheating will result in a non-droppable null for the assignment in question as well as a deduction of two grade points from the course grade (e.g., if it were an A, it would become a C). Cheating at the final exam will result in an F for the course.

Grading Scale

A 88-100%; B 78-87%; C 68-77%; D 60-67%; F 0-60%. Plus or minus suffix is assigned to the letter grades proportionally within these ranges.

Tutoring

If you need tutoring help, please visit www.luc.edu/tutoring for further information.

Accommodation requests

If you require accommodations, please apply for accommodations through Services for Students with Disabilities (their website is <http://www.luc.edu/sswd/>) at your earliest convenience. Accommodations will be provided as soon as feasible after I receive formal instructions from SSWD.

Co-required lab drop rule

Students wanting to drop lecture after midterm may stay in the co-required lab only if lecture midterm grade, posted in LOCUS, is a D or better. Students should continue to attend lecture until the week of the drop date to gain as much background knowledge as possible. For Fall 2017, those students wishing to drop lecture who have a midterm grade of D or better can seek assistance from the Department of Chemistry and Biochemistry office beginning Monday 10/30 at 9:00 AM through Friday 11/3 at 4:00 PM. Students with a midterm grade of F must drop the co-required lab if they drop the lecture. No exceptions.

Course repeat rule

Effective with the Fall 2017 semester, students are allowed only THREE attempts to pass Chemistry courses with a C- or better grade. The three attempts include withdrawals (W). After the second attempt, the student must secure approval for a third attempt. Students must come to the Chemistry Department, fill out permission to register form or print it from the Department of Chemistry & Biochemistry website: <http://www.luc.edu/chemistry/forms/> and obtain a signature from the Undergraduate Program Director, Assistant Chairperson, or Chairperson in Chemistry. A copy of this form is then taken to your Academic Advisor in Sullivan to secure final permission for the attempt.

Miscellaneous

Photography, video, and audio recording are prohibited in class.

Tentative course calendar

Tuesday 8/29	Introduction to the course. Chapter 1: Matter, Measurements.	
Thursday 8/31	Chapter 1: Matter, Measurements.	
Tuesday 9/5	Chapter 1: Matter, Measurements.	
Thursday 9/7	Chapter 2: Atoms, molecules, ions.	
Tuesday 9/12	Chapter 2: Atoms, molecules, ions.	
Thursday 9/14	Chapter 3: Chemical Reactions and Reaction Stoichiometry.	
Tuesday 9/19	Chapter 3: Chemical Reactions and Reaction Stoichiometry.	
Thursday 9/21	Exam I	Arrive on time!
Tuesday 9/26	Chapter 4: Reactions in Aqueous Solution.	
Thursday 9/28	Chapter 4: Reactions in Aqueous Solution.	
Tuesday 10/3	Chapter 5: Thermochemistry.	
Thursday 10/5	Chapter 5: Thermochemistry.	
Tuesday 10/10	Fall Break	
Thursday 10/12	Chapter 6: Electronic Structure of the Atom.	
Tuesday 10/17	Chapter 6: Electronic Structure of the Atom.	
Thursday 10/19	Chapter 7: Periodic Properties of Elements.	
Tuesday 10/24	Chapter 7: Periodic Properties of Elements.	
Thursday 10/26	Exam II	Arrive on time!
Tuesday 10/31	Chapter 8: Basics of Chemical Bonding.	
Thursday 11/2	Chapter 8: Basics of Chemical Bonding.	
Tuesday 11/7	Chapter 8: Basics of Chemical Bonding.	
Thursday 11/9	Chapter 9: Molecular Geometry and Bonding Theories.	
Tuesday 11/14	Chapter 9: Molecular Geometry and Bonding Theories.	
Thursday 11/16	Exam III	Arrive on time!
Tuesday 11/21	Chapter 10: Gases.	
Thursday 11/23	Thanksgiving break	
Tuesday 11/28	Chapter 10: Gases.	
Thursday 11/30	Chapter 10: Gases.	
Tuesday 12/5	Chapter 21: Nuclear Chemistry.	
Thursday 12/7	Chapter 21: Nuclear Chemistry.	
TBD	Final Exam	Arrive on time!