

Chemistry 121: Introductory Chemistry

Course description

This course provides a thorough introduction to the fundamental concepts, theories, and methodologies of chemistry. Topics may include stoichiometry, theories of molecular structure and bonding, the periodic table, acid-base chemistry, chemical equilibria, and thermodynamics. This course provides a basis for further study of chemistry.

What to expect

From the course – to be amazed, challenged, and learn a lot about chemistry. Students can expect to improve their problem-solving skills, apply and extend their chemical knowledge to other areas of science, and enhance their written and oral communication skills. We will be spending 3-5 class periods on each topic and it is expected that you will have read the associated material before class and complete the on-line homework questions and out of class problem sets. In class we will work more challenging problems, analyze demonstrations, and discuss various applications of chemistry.

From the instructor – to treat each person with respect, be enthusiastic about the subject, arrive to class on time and prepared, return graded and assessed items in a timely manner, reply to emails in a timely manner (however, I will not reply after 9 PM), and be available outside of class for questions or further discussion.

Of the students – to respect others, be on time (when arriving to class, turning in assignments, etc.), be prepared for class (have read related course material **before** class, be alert, etc.), and participate during class (participate in small group activities, answer/ask questions, etc.).

Instructor and Course Resources

Instructor:	Prof. Kerry Rouhier (“Roo-yer”)
Email:	rouhierk@kenyon.edu
Office:	212 Tomisch Hall
Office Hours:	M (10 AM – 12 PM), W (10 – 11 AM), Th (8 – 10 AM) or by appointment
Class location:	Tomsich 101
Class time:	9:10-10:00 AM; M-W-F
Required materials:	Chemistry, 9 th Ed. by Raymond Chang (although any general chemistry textbook is acceptable); Sapling Learning Online Homework; basic scientific calculator (bring to every class)
Course websites:	<i>moodle.kenyon.edu</i> (CHEM 121.01) and <i>www.saplinglearning.com</i>
Lead tutor:	Johanna Klinmann (will be available at MSSC Sunday’s 7-9 PM)

Course Policies

Attendance – Your attendance at every lecture is expected. Excessive absences will lead to a lower grade and may lead to expulsion from the course. As stated in the *Course of Study 2013-2014* regarding absence due to illnesses:

“Absences for reasons of illness are not ordinarily excused: only when a student is declared by the College physician to be infirm (in a hospital or at home) will a health report be sent from the Health and Counseling Center to the dean of students, giving the days when each patient is judged infirm and recommending that the student's class absences be excused. When released from confinement, the student is expected to resume regular required attendances unless otherwise advised.”

Athletics and Extracurricular Activities – If your participation in athletics or extracurricular activities conflicts with a class, scheduled exam time or project due date, please let me know as soon as possible, at least two weeks in advance. Typically you will be expected to complete your work **before** (not after) the deadline for the rest of the class. Note: **only the Dean of Students offers an Excused Absence** (see *Course of Study 2013-2014* for details).

Accommodations – In accord with Section 504 of the Rehabilitation Act (1973) & ADA (1990): If your disability requires accommodation to fully participate in this class, notify the instructor and Erin Salva, Coordinator of Disability Services (PBX 5453, salvae@kenyon.edu) as soon as possible. All information and documentation of disability is confidential. No accommodations of any kind will be given in this course without notification from the Coordinator of Disability Service at least one week prior to the special accommodations.

Academic Honesty – Academic honesty is expected in all aspects of this course. Please refer to the *Course of Study 2013-2014* (linked on the Moodle site) for a detailed description of the policies on academic honesty. A violation of academic honesty is among the most serious matters in an academic community. Note: this class encourages collaborative work; however your work must still be your own.

Late work – Late work will be accepted with a penalty of 10% per 24 hours late (including weekends). Work more than 5 days late will not be accepted.

Technology use – Laptops and tablet devices will be permitted for note taking purposes only; you may not use it to email, instant message, play games, or partake in any other activity unrelated to class. Noncompliance will result in loss of this privilege. Cell phones are not to be used during class at any time. Please have them turned off or set to silent.

Course grade – your overall course grade will be based on your performance in the following areas:

In-class work/Sapling homework	5%
Applied chemistry project	5%
Problem sets	10%
Weekly quizzes	10%
Semester exams (3)	45%
Final exam	20%

Letter grades will be assigned no more strictly than the following scale:

A/A-: 90-100%; B(+/-): 80-89%; C(+/-): 70-79%; D(+/-): 60-69%; F: <59%

Course Details

Prerequisites – There are no formal prerequisites; however if you have not already, please complete the Chemistry Placement Survey. The chemistry department uses this 20-minute survey/quiz to appropriately place students in the introductory course that best matches their chemistry background and demonstrated skills. We also track performance against this metric.

In-class work – Throughout the semester the class will work through problems or discuss associated readings during class. Students will be asked to complete short assignments based on the problems or discussions generated in class. These assignments are designed to build conceptual understanding of the material covered in your reading. These assignments will count as a completion grade.

Sapling on-line homework – As a supplement to the text, the instructor has asked that students purchase access to Sapling Learning (www.saplinglearning.com). This is an on-line homework system that provides immediate feedback for your homework assignments. There are two options to practice and test your learning: practice questions (not graded) and homework (graded). The practice questions give you a chance to work through difficult concepts with immediate feedback but without penalty for incorrect responses. You have unlimited chances to get the correct answer for the graded homework; however there is a 5% deduction for each incorrect answer. Graded on-line homework is to be completed **individually**. Deadlines will be given in class.

Applied Chemistry Project – Student pairs will create a short document similar to the “Chemistry in Action” sections found in your textbook. Details and deadlines will be provided in class.

Problem sets – For each topic there will be a short problem set assigned. These problems are designed to challenge the student to think critically about the material by drawing on knowledge gained during the semester. Assignments and deadlines will be given in class.

Weekly Quizzes – In order to help you stay on top of the material, there will be weekly Monday quizzes. They will start promptly at 9:10 AM and last no more than 5 minutes. Quizzes will be closed-note and will cover material since the last quiz. There will be no makeup quizzes; however, your lowest quiz grade will be replaced by your highest at the end of the semester.

Semester exams – There will be **three** fifty-minute exams during the semester. If you have a scheduling conflict, please notify the instructor in writing at least two weeks prior to the scheduled exam to set up an alternate exam time. The exams are scheduled for **September 25th, October 25th, and November 22nd**. There will be no makeup exams.

Final exam – The final exam will be **Thursday, December 19th at 6:30 PM**. It will be cumulative for the semester and you will have two hours to complete the exam.

“How to be successful in chemistry” – Found on the Moodle page, this document includes several strategies for how to be successful in this course. It is encouraged that you look at this document and put into practice these strategies early in the semester to maximize your success.

Tentative Schedule

Week	Monday	Wednesday	Friday
2 (9/2)	Basic Concepts and Stoichiometry (Chpt 2&3) Quiz #1		Solution Chemistry (Chpt 4)
3 (9/9)	Quiz #2		"Watermelon and muscles"
4 (9/16)	Atomic Theory (Chpt 7) Quiz #3	"Have you ever seen an atom?"	
5 (9/23)	Quiz #4	Mid-term Exam #1	
6 (9/30)		Covalent Bonding (Chpt 9)	
7 (10/7)	Quiz #5		No class – fall break
8 (10/14)	Quiz #6	Molecular Structure (Chpt 10)	"Reaction Snapshots"
9 (10/21)	Quiz #7		Mid-term Exam #2
10 (10/28)	Thermochemistry (Chpt 6)		
11 (11/4)	Quiz #8		Gases (Chpt 5)
12 (11/11)	"Chemistry of Air bags" Quiz #9		
13 (11/18)	Equilibrium (Chpt 14) Quiz #10		Mid-term Exam #3
(11/25)	Thanksgiving break		
14 (12/2)		Acid-Base Chemistry (Chpt 15)	
15 (12/9)	Quiz #11		Final Exam Review
	Final exam Thursday (12/19), 6:30 PM		

Note: Check the Moodle site for the list of which sections will be covered: "General Chemistry Concepts" and the "Guided Outlines" for each chapter.