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. 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. Matthew Rouhier ("Roo-yer")
Email:	rouhierm@kenyon.edu
Office:	208 Tomisch Hall
Office Hours:	M (12 – 1 PM), T (8 – 10 AM), W (12 – 2 PM), or by appointment
Class location:	Tomsich 101
Class time:	11:10-12:00 PM; M-W-F
Required materials:	Chemistry, 9th Ed. by Raymond Chang (although any general chemistry textbook is acceptable); Sapling Learning Online Homework; basic scientific calculator (bring to every class)
Course websites:	moodle.kenyon.edu (CHEM 121.02) and www.saplinglearning.com
Lead tutor:	Katherine Hoener (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 2014-2015 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 – Students who anticipate they may need accommodations in this course because of the impact of a learning, physical, or psychological disability are encouraged to meet with me privately early in the semester to discuss their concerns. In addition, students must contact Erin Salva, Director of Student Accessibility and Support Services (740-427-5453 or salvae@kenyon.edu), as soon as possible, to verify their eligibility for reasonable academic accommodations. Early contact will help to avoid unnecessary inconvenience and delays.

Academic Honesty – Kenyon College is, at the core, an intellectual community of scholars – students and faculty – engaged in the free and open exchange of ideas. Critical to this lively exchange and deep engagement with ideas is the academic integrity of our work, both inside and outside the classroom.

At Kenyon we expect all students, at all times, to submit work that represents these standards of academic integrity. It is the responsibility of each student to learn and practice the proper ways of documenting and acknowledging those whose ideas and words you have drawn upon (see Academic Honesty and Questions of Plagiarism in the Course Catalog). Ignorance and carelessness are not excuses for academic dishonesty. If you are uncertain about the expectations for academic honesty in this class, please ask for clarification. Note: this class encourages collaborative work; however your work must still be your own.

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

Quizzes/Snapshots (14)	at 5 pts each	10.0%
Homework (10)	at 7 pts each	10.0%
Final Review Sheet	at 10 pts	1.5%
Semester exams (4)	at 100 pts each	57.1%
Final exam	at 150 pts	21.4%
Total	700 pts	

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%

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 – Please refrain from using laptops, tablet devices, cell phones, and recording devices in class without the prior approval of the instructor. All phones should be set to silent.

Course Details

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, develop your problem-solving skills, and provide a forum to practicing scientific communication.

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. The homework is due on Mondays before the start of lecture and the dates are listed in the schedule below.

Quizzes and Snapshots – In order to help you stay on top of the material, there will be weekly Monday quizzes or snapshots. They will start promptly at 11:10 AM and last no more than 5 minutes. Quizzes will be closed-note and will cover material since the last quiz. Snapshots are 2 to 3 sentence responses that provide timely feedback to the understanding of the material covered in the previous lectures. The snapshots are not graded for correctness; the points are awarded for satisfactory completion. Because of the nature of the quizzes and snapshots, there will be no makeups; however, your lowest quiz/snapshot grade will be replaced by your highest quiz grade at the end of the semester.

Semester exams – There will be four 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 19th, October 15th, November 7th, and December 5th. There will be no makeup exams.

Final exam – The final exam will be Tuesday, December 16th at 6:30 PM. It will be cumulative for the semester and you will have two hours to complete the exam. Because of limited time, it is impossible to include every concept or skill covered in this class, therefore the exam will sample topics. You should expect that any topic covered during the semester may appear.

Best practices for success in CHEM 121 – Found on the Moodle page is a document that includes several strategies for how to be successful in this course. There is also a link to an article on "Study smarter, learn better: 8 tips from memory researchers" that can be applied to all of your courses. It is encouraged that you look at these documents and put into practice these strategies early in the semester to maximize your success.

Tentative Schedule

Class Meeting Date	Topics	Sapling Homework	Quiz/Snapshot	Exams
8/28 – Friday	Syllabus & Ch. 2			
9/1 – Monday	Ch. 2 "Atom, Molecules, and Ions"		Quiz/Snapshot	
9/3 – Wednesday	Ch. 3 "Mass Relationships in Chemistry"			
9/5 – Friday				
9/8 – Monday	Ch. 4 "Reaction in Aqueous Solutions"	Ch.2 & 3 Homework Due	Quiz/Snapshot	
9/10 – Wednesday				
9/12 – Friday				
9/15 – Monday		Ch. 4 Homework Due	Quiz/Snapshot	
9/17 – Wednesday				
9/19 – Friday				Exam 1
9/22 – Monday	Ch. 5 "Gases"		Quiz/Snapshot	
9/24 – Wednesday				
9/26 – Friday	Ch. 6 "Thermochemistry"			
9/29 – Monday		Ch. 5 Homework Due	Quiz/Snapshot	
10/1 – Wednesday				
10/3 – Friday	Ch. 7 "Quantum Theory and e^- Structure"			
10/6 – Monday		Ch. 6 Homework Due	Quiz/Snapshot	
10/8 – Wednesday				
10/10 – Friday	Fall Break – No Class			
10/13 – Monday		Ch. 7 Homework Due	Quiz/Snapshot	
10/15 – Wednesday				Exam 2
10/17 – Friday	Ch. 9 "Chemical Bonding I"			
10/20 – Monday			Quiz/Snapshot	
10/22 – Wednesday				
10/24 – Friday				
10/27 – Monday	Ch.10 "Chemical Bonding II"	Ch. 9 Homework Due	Quiz/Snapshot	
10/29 – Wednesday				
10/31 – Friday				
11/3 – Monday		Ch. 10 Homework Due	Quiz/Snapshot	
11/5 – Wednesday				
11/7 – Friday				Exam 3
11/10 – Monday	Ch. 14 "Chemical Equilibrium"		Quiz/Snapshot	
11/12 – Wednesday				
11/14 – Friday				
11/17 – Monday		Ch. 14 Homework Due	Quiz/Snapshot	
11/19 – Wednesday	Ch. 15 "Acids and Bases"			
11/21 – Friday				
11/24 to 11/28	Thanksgiving Break			
12/1 – Monday		Ch. 15 Homework Due	Quiz/Snapshot	
12/3 – Wednesday				
12/5 – Friday				Exam 4
12/8 – Monday		Semester Review Due	Quiz/Snapshot	
12/10 – Wednesday				
12/12 – Friday	Finals Review			
12/16 – Tuesday	Final Exam: 6:30PM			Final Exam