

**CHEMISTRY 201
GENERAL CHEMISTRY II
SPRING 2009**

- INSTRUCTOR:** Maria A. Gomez, Carr G22C, magomez@mtholyoke.edu
Office Hours: M 2-3 PM, Tu 1-2 PM, Th 2-3 PM or by appointment
- TEXT:** Brown, LeMay, and Bursten, *Chemistry: The Central Science*, 10th Edition
- WEB:** <http://www.mtholyoke.edu/courses/magomez/chem201>
- TUTORS:** *PLUMS Team:* Sara Martin (marti20s), Amanda Strickland (stric20a), Caroline Hickok (hicko22c), Ahri Lee (lee22a), Mikaela Smith (smith24m), Tenaya Vallery (valle20t)
Select your group on the first day of class

SAW Mentor: Vidya Raghavan (ragha20v)
- HOURS:** MWF 11:00 AM – 12:15 PM (Dwight 101)
- LABORATORY:** See laboratory syllabus and laboratory participation rules for details on the laboratory and its impact on your overall grade.

COURSE DESCRIPTION

This course provides background in basic principles of physical, analytical, and inorganic chemistry essential to the study of all chemical phenomena. Topics include an introduction to chemical kinetics, quantitative treatment of chemical equilibrium with applications to solubility and acid-base and electron transfer reactions, thermodynamics, and an introduction to molecular modeling of basic organic reactions.

ASSIGNMENTS

Problem sets: Online problem sets are due on line by the dates followed by a * on the schedule. You will see the answers immediately after you have submitted your work online. The last HW is due on paper in class. No HW is accepted after the due date. The online HW system will assign a grade to your HW so that you get a sense of how well you know the material. However, for the class grade, just your having attempted all the HWs fully before their deadline will give you full credit for the HW.

Exams: There will be three exams as shown on the class schedule. Each exam will be on the material prior to it. There will be a review before each exam. The lowest of your three exam grades will be dropped. In addition, there will also be a comprehensive final exam.

Scientific Essay: The scientific essay can be on either the topic discussed in class on 2/18 or 3/11. Additional references will be suggested on these days. The essay should be two single spaced pages in length plus references and is due on 4/6 if you chose the 2/18 topic and 4/27 if you chose the 3/11 topic. 10% of your essay grade will be based on your having met with Vidya Raghavan, our SAW mentor, to go over a draft of your essay. You need to meet with Vidya prior to the deadline for your particular essay. Appointments must be made two weeks in advance. A limited number of appointments will be possible each week so you need to start early.

GRADING POLICY

Problem sets:	10%
Scientific Essay	20%
Exams: (lowest of 3 dropped)	30%
Comprehensive final exam	20%
Laboratory:	20%

See laboratory syllabus and laboratory participation rules for details on the laboratory and its impact on your overall grade.

Class Schedule

<i>Topic</i>	DATE	<i>Readings in BLB</i>
Introduction and Review	1/30	
Kinetics	2/2	14.1-14.3
	2/4	14.4
	2/6*	14.5
	2/9	14.6, 14.7
Equilibrium	2/11	15.1-15.3
	2/13*	15.4-15.5
	2/16	15.6-15.7
<i>Catalysis</i>	2/18	Special Topic
Review	2/20*	
Exam 1	2/23	
Acid-Base Equilibria	2/25	16.1-16.2
	2/27	16.3-16.5
	2/28	16.6-16.8
	3/2	16.9-16.11
Buffers and Solubility	3/4*	17.1-17.2
	3/6	17.3-17.4
	3/9	17.5-17.7
<i>Proton channels</i>	3/11	Special Topic
Review	3/13*	
Exam 2	3/23	
Thermodynamics	3/25	19.1-19.2
	3/27	19.3-19.4
	3/30	19.5
	4/1	19.6, 19.7
	4/3	No Class
Electrochemistry	4/6*	20.1-20.2
	4/8	20.3-20.4
	4/10	20.5-20.6
	4/13	20.7

	4/15	20.8-20.9
Review	4/17*	
Exam 3	4/20	
Introduction to molecular modeling of basic organic reactions	4/22	Basics
	4/24	Basics
	4/27	Practice for Team 1
	4/29	Practice for Team 2
Discussion of Results	5/1*	
Review and Evaluation	5/4	
Review	5/6	