

Draft Syllabus
General Chemistry A
Chemistry 105 -Section 001
Fall 2008

Instructor: Dr. Conrad A. Naleway, 422 Flanner Hall, 773-508-3115, email: cnalewa@luc.edu.

Office Hours: Tu, Th 3:00 -4:00 PM, other times by appointment.

Review Sessions: Weekly and prior to each exam

Textbook: Chemistry, The Central Science, T.L. Brown, H.G. LeMay, and B.B. Burston, Prentice Hall, Inc., 10th ed., 2006 (with Math Review Kit and Media Companion): ISBN 0-13146489-2. Companion Web site <http://chem.prenhall.com/brown>. Suggested: Student's Guide to Chemistry, The Central Science, J.C. Hill, Prentice Hall, Inc., 10th ed., 2006, ISBN: 0-13-146484-1. **Please note that the text is a secondary source of information to help clarify concepts presented in lecture. The primary information is presented in class and also appears on lecture handout materials.**

Lecture: Lectures are scheduled Tuesdays and Thursdays at 1:00 -2:15 PM in Flanner Hall 133.

Discussion: Discussion is scheduled Tuesdays and Thursdays at 4:00 -5:00 PM. Exams and quizzes will be given during the discussion period on Thursdays as indicated in the schedule of topics, except Exam 3 which will be given in lecture on Nov. 29, 2007.

Website: <http://www.geocities.com/conradnaleway/chem105>

Course Description: A study of chemical principles and reactions with emphasis on the development of a scientific attitude and an understanding of fundamental chemical concepts.

Course Objectives: Provide a foundation for advanced work in chemistry and an appreciation for the scientific method with special emphasis on problem solving. Acquire knowledge of the properties and reactions of matter. Gain an understanding of the basic principles of chemistry and its many applications.

Calculators: Any scientific calculator is sufficient, however calculators may not be shared during examinations and the cases or covers must be removed.

Laboratory: Chem. 105 has 2 laboratory components, sections 003 & 004, which meet in FH-308 on Wednesdays at 2:45-5:30 PM and Fridays at 8:30 -11:15 AM, respectively. Laboratory work will begin the week of 9/2/08. *A special complementary assignment will be given in class for most of the laboratory experiments, this will constitute 10% of the lab grade.*

Tentative Schedule of Topics

Date	Day	Topic	Chapter	Pages
8/26	T	Matter & Measurements Discussion	1	1-35; 1116-1121
8/28	Th	Atomic Theory of Matter Discussion	2	36 -51
9/2	T	Molecules & Ions Discussion	2	52-76
9/4	Th	Chemical Equations Discussion -Quiz 1	3	78 -95
9/9	T	Stoichiometry (Mass Relations) Discussion	3	96 -118
9/11	Th	Reactions in Aqueous Solution Discussion	4	120-136
9/16	T	Solution Stoichiometry Discussion	4	137-164
9/18	Th	Thermochemistry Discussion - Exam I	5	166-186 Chapters 1 -4
9/23	T	Calorimetry Discussion	5	183-188
9/25	Th	Hess's Law Discussion	5	189-213
9/30	T	Atomic Spectra Discussion	6	216 -227
10/2	Th	Quantum Mechanical Model Discussion -Quiz 2	6	228 -239
10/7	T	<i>Mid-Semester Break -No Class</i>		

10/9	Th	Electron Configurations Discussion	6	240-258
10/14	T	Periodic Properties Discussion	7	260 -275
10/16	Th	Group Trends Discussion -Quiz 3	7	276-298
10/21	T	Basic Chemical Bonding Discussion	8	300-316
10/23	Th	Lewis Structures Discussion	8	317 -328
10/28	T	Covalent Bond Strength Discussion	8	329 -342
10/30	Th	Molecular Geometry Discussion -Exam II	9	344-360 Chapters 5-8
11/4	T	Hybrid Orbitals Discussion	9	361-372
11/6	Th	Molecular Orbitals Discussion	9	373 -396
11/11	T	Gas Laws Discussion	10	398 -407
11/13	Th	The Ideal-Gas Equation Discussion -Quiz 4	10	408 -419
11/18	T	Kinetic Theory & Real Gases Discussion	10	420-440
11/20	Th	Intermolecular Forces Discussion	11	442-454
11/25	T	Exam III (<i>during class period</i>)		Chapters 9 & 10
11/27	Th	<i>Thanksgiving Break -No Classes</i>		

12/2	T	Phase Changes Discussion	11	455 -464
12/4	Th	Solids Discussion	11	465 -484
12/12	F	Final Exam (1:00-3:00 PM)	-	Chapters 1-11

Homework Problem Sets: Several sets of problems will be assigned during the semester, roughly one each week. These assignments will utilize the MASTERINGCHEMISTRY homework system and In-Class Homework Analysis assignments. **These assignments are required!**

Additionally End-of-Chapter Exercises which include the below problems are recommended but will not be turned in for grading (*thus not required*):

(Solutions will be posted and/or made available during discussion)

Chapter 1: 3,4,7, II, 19,21,25,31,35,39,41,43,49,58,60,67,69,79

Chapter 2: 3, 7,11,13,15, 19,21,27,29,37,41,45,53,57,59,63,79,82,86,89,94

Chapter 3: 4, 7, 9,11,19,25,31,39,43,47,53,55,61,65,69,75,77,83,89,95

Chapter 4: 3,7,13,25,31,39,43,45,49,51,59,67,73,75,83,95,98, 103, 115

Chapter 5: 4,9, 11, 19,25,29,39,41,47,49,53,57,61,67,71,77,85,87,93, 111

Chapter 6: 5,7, 13, 15,21,27,29,33,39,41,45,47,51,55,59,61,63,67,69,75,90

Chapter 7: 2,5, 13, 15, 19,27,31,33,35,37,39,47,51,55,61,63,69,79,91,105

Chapter 8: 3, 7, 13, 17,21,29,33,35,39,45,49,53,57,59,61,63,67,75,81,84,90

Chapter 9: 3, 5, 9, 11, 19,25,27,31,35,37,39,41,45, 51, 53, 55, 57, 61, 82, 101

Chapter 10: 1,4, 15, 19,21,27,33,37,41,49,53,55,63,65,67,69,71,73,85,99

Chapter 11: 4, 7, 9, 11, 13, 17, 19,29,33,35,37,45,47,49,51,59,61,63,65,71,90

Examinations and Academic Honesty: Course grades will be determined from the scores achieved on examinations and lab work. Examinations are **cumulative** and may include material that has appeared on previous exams. Five points will be deducted from your exam score if the exam is turned in after the exam has ended and/or your name and identification number are not properly filled in.

All students are responsible for exercising the highest level of academic honesty while taking examinations. Please read the University policy on academic honesty in the Catalog of Undergraduate Studies.

Grading Scheme: Course grades will be based on the weighted average of in-class exams, quizzes, homework, and final exam. Your exam total will be determined in one of two ways depending upon your final exam score. The method giving the highest score will be used.

If your final exam score is higher than your lowest hour exam score, the lowest hour exam will be dropped and the final exam will be weighted twice an "hour" exam, Method 1. If your final exam score is lower than your lowest hour exam score, the final exam will be weighted the same as an hour exam and all hour exams will be used in calculating your score, Method 2.

Grading contributions for Chem. 105 students is
80% from LECTURE and
20% from LABORATORY work.

Test Article	Method 1	Method 2
Exam 1	15%	15%
Exam 2	15%	15%
Exam 3	-	15%
Quizzes (4)	10%	10%
Homework (Mastering Chemistry)	10%	10%
Final Exam	30%	15%
Lecture Grade Totaling	80%	80%
Laboratory Grade	20%	20%

Make-up work will not be given for missed exams or quizzes. Proportionate scores will be used in cases of excused absences. If an hour exam is missed, method 1 will be employed dropping the missed hour exam from the calculation. If a second hour exam is missed, an excused absence will be given at the discretion of the lecturer. An excused absence will be given only in case of an extreme family crisis or serious illness, which must be verified by a letter from a parent or an attending physician no later than three calendar days after the scheduled date of the exam. A grade of F" will be assigned if a combination of three exams and/or quizzes are missed.

Grading Scale: The following scale will be used to determine letter grades,

≥ 88% - 100%	A
75% - 87%	B
60% - 74%	C
50% - 59%	D
< 50%	F

Plus and minus grades will be assigned proportionately within the designated ranges.