

**Chemistry 101F: General Chemistry I**

MWF 11:20-12:10, Wynn 111

Course Description

Fall 2004

Prof. Rick Geier

Wynn 211

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**Office Hours:**

M,T,W,F: 9:20-10:10 am; and M,W,Th,F 4:20-5:10 pm.

These hours may be adjusted via future announcement, and special office hours will be scheduled prior to exams. My complete schedule is posted on my office door and on the course Blackboard site. Appointments are also welcome. Email or phone questions are discouraged (unless they are of a very simple nature). Email is a great way to make an appointment!

**Tutors:**

Tutors are available Sunday, Tuesday, and Thursday from 7-9 pm in Wynn 116.

**Required Materials:***Chemistry: The Science in Context*, Gilbert, Kirss, Davies*Chemistry 101 Laboratory Manual*, Chanatry

Laboratory notebook, with duplicate pages

Calculator (please bring your calculator to all exams and labs)

Safety glasses or goggles

**Optional Materials:**

Molecular model kit

*Solution Manual for Chemistry: The Science in Context*.

(copies of the solution guide are on reserve in the science library)

**Course Website:**

I will maintain a Blackboard site for this course with such useful information as the course syllabus, suggested homework problems, general announcements, exam keys, and useful links. There is also a website devoted to the laboratory component of the course (<http://classes.colgate.edu/jchanatry/chem101>). Please refer to this site for weekly laboratory announcements and downloadable report sheets in PDF format.

**Homework:**

There is minimal assigned homework in the lecture component of this course. Only on occasion might I specifically ask you to do something outside of class and turn in the fruits of your labors. **However**, you will certainly want to read the textbook, work problems from the text, and take advantage of the CD-ROM provided with your text (the CD-ROM content is also available online at [www.wwnorton.com/chemistry](http://www.wwnorton.com/chemistry)). All problems within the text of each chapter are highly recommended, and additional suggested problems from the end of each chapter will be posted in class and on the course Blackboard site as we begin a new chapter. It is very doubtful that you will be able to learn the material covered in this course without reading the text and struggling

with problems. Do not wait until an exam to see problems for the first time. Laboratory assignments will be explained in lab.

### **Exams:**

Hour exams will be given on the following dates: Exam 1 (Friday, September 24), Exam 2 (Friday, October 22), Exam 3 (Wednesday, November 10), and Exam 4 (Wednesday, December 8).

The exams will focus on the material covered since the previous exam; however, there will always be at least a degree of comprehensiveness. Terminology, concepts, and factual information will be routinely carried forward from one chapter to another. Thus, one cannot purge old chapters from memory at the conclusion of each exam. The Final Exam will be comprehensive. The Final Exam will be co-written by all Chemistry 101 faculty, and administered to all sections.

### **Quizzes:**

It is of the utmost importance that chemistry students do not fall behind. This is not a class that can be left to slide for a couple of weeks and then caught up with shortly before an exam. Thus, to encourage a certain frequency in one's studies, there will be 5-7 unannounced quizzes during the semester. They will be very short (~10 min) and they will be straightforward (provided one has attended lecture, paid reasonable attention, and has made an attempt to keep up with reading and problem solving). These quizzes should be a great opportunity for you to impress me with your mastery of the basics, while picking up a few points in the process. Your lowest quiz score will be dropped.

### **Laboratory:**

The policies governing the laboratory component of this course will be explained to you by your lab instructor. *You must obtain a passing grade in the laboratory in order to obtain a passing grade in the course.*

### **Absences:**

If you miss a lecture for any reason, find out from a classmate what transpired. I will not normally summarize lectures to individual students, but there are certainly situations that merit understanding and exceptions. If you know in advance that you will miss an exam due to an officially approved Colgate University excuse, follow the usual procedures and we will make alternative arrangements in advance. If you unexpectedly miss an exam for an officially approved excuse, we will again make alternative arrangements. If you miss an exam and are lacking an officially approved excuse, you are at my mercy! If you miss a surprise quiz due to an officially excused absence we will come up with something creative. If you miss a quiz and are lacking an officially approved excuse, you will receive a zero. (Recall, your lowest quiz score will be dropped.)

**Course Grade:**

The grade for this course is comprised of the laboratory work (20%), homework (2.5%), quizzes (7.5%), hour exams (50%), and the Final Exam (20%) as follows:

Laboratory	200 points
Homework	25 points
Quizzes	75 points
Hour Exams	500 points (4 x 125)
Final Exam	200 points
<b>TOTAL</b>	<b>1000 points</b>

The following grading scale is guaranteed to not be adjusted upwards. At my discretion, it may be adjusted downwards.

A	85-100%
B	75-84
C	65-74
D	52-64
F	<52 or failure to complete labs

There is no fixed quota of grades in this course. It is theoretically possible for the entire class to receive an “A”, or for no one in the class to receive an “A”. At any point should you have any concerns, do not hesitate to speak with me. I am always happy to discuss your performance in the class.

The Fall 2001 grading scale was as follows:

	<b>2001</b> (mean = 72.5%)
A	82.0% (4 students)
B	74.1 (8 students)
C	65.0 (6 students)
D	52.0 (4 students)
F	<52.0 (0 students)

## Chemistry 101f Course Outline

Fall 2004

Month	Dates	Chpt.	Topic(s)
September	1-3	1	matter, energy, waves, unit conversions, radioactive decay, temperature, atoms, isotopes, periodic table
September	6-10	2	fusion, fission, binding energy, measuring radioactivity, radiochemical dating
September	13-20	3	line spectra, electrons, light, atomic structure, quantum numbers
September	24	----	<b>Exam I</b> (Chapters 1-3)
September	22-	4	composition of compounds, nomenclature, mole, balancing equations, empirical formulas, stoichiometric calculations
October	8	----	<b>No Class—Prof. Geier is out of town</b>
October	6	----	
October	11-18	5	solutions, concentration, electrolytes, colligative properties, oxidation-reduction, acid-base, precipitation, titration
October	22	----	<b>Exam 2</b> (Chapters 4-5)
October	20-29	6	bonding theories, Lewis structures, polar covalent bonds, electronegativity, resonance, formal charge
November	1-5	7	exceptions to octet rule, unpaired electrons, VSEPR, hybridization, polar bonds, bond vibration and IR
November	10	----	<b>Exam 3</b> (Chapters 6-7)
November	8-17	8	gas laws, ideal and real gases, gas density, kinetic molecular theory
November	19-29	9	lattice energy, intermolecular forces, vapor pressure, phase diagrams, water
December	1-6	10	crystals, unit cell, packing, network solids, allotropes, metallic bonds
December	8	----	<b>Exam 4</b> (Chapters 8-10)
December	10	----	<b>Review and Preview:</b> A look back and a look ahead!