CHEMISTRY 35: GENERAL CHEMISTRY FOR MAJORS

Lecture: MWF 10:40 – 11:30 a.m., Angell B112

Tests, Quizzes etc: Tuesday 5:30-8:15 p.m., Lafayette L403

UVM

FALL SEMESTER, 2013

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Office Hours: 12:00– 1:30 p.m. Monday and Wednesday or by appointment. These hours are subject to change with notice.

Learning Goals

1) Develop a general knowledge of chemistry and be able to apply chemical and physical principles to solve a wide-range of problems in chemistry.
2) Develop proficiency in chemical laboratory techniques and apply these to realistic and current problems in research.

Books

Required Textbook: Atkins, Jones, and Laverman: *Chemical Principles: The Quest for Insight*, 6th edition, W.H. Freeman and Co., ISBN-10: 1-4641-2467-1. Lecture will closely follow this textbook. Homework problems will be assigned from this textbook and will be similar to those on tests and quizzes.

Additional Resources: There is a Student Study Guide and Student Solutions Manual associated with the text book. They are described on page xvii of the text. These resources **are not required** for the class. Online resources are described on page xviii.

Quizzes, Tests, and Final Exam

Quizzes: It is important to keep up with the material as it is introduced in class. I will help you stay motivated in studying by giving a **quiz every few weeks (~5-6 total for the semester), including one usually about a week before an exam**. These quizzes will usually be given in

Lafayette L403 during our assigned times. The quiz will include qualitative and quantitative questions. You should **bring a calculator**.

Tests: There will be **three tests** given during the semester and a final exam (discussed below). **They will be scheduled for evenings** in Lafayette L403 because this will afford you more time for taking the exam compared to taking them during class. If you have a conflict with the test time we will find a better time for you to take the exam. If you do have a scheduling conflict with any of these tests, please **notify me at least one class meeting in advance**. I will announce the test time in class (as well as on Blackboard) about 1 week (or more) before the exam. If you miss a test or exam, an official written documentation of sickness or family crisis is required. **Unexcused absences will result in a grade of zero for that exam**. **All tests will require a calculator that has log functions (base ten and natural log) and their inverse functions**. You cannot access the internet, text message, or use the phone during tests or quizzes. You cannot use stored equations from your calculator or any libraries of information stored in its memory, etc. **I will provide a sheet with important equations**. You **should be able to algebraically manipulate these equations** to get them into a form to solve a particular problem. A periodic table, important constants (e.g. gas constant, Avogadro's number) will be provided. All tests will be worth approximately the same number of points ~100.

Test Dates: The following table gives ***tentative*** **test dates.** If a test date is changed it will be announced in class and posted on Blackboard.

Test 1	Week of Sept. 15th
Test 2	Week of Oct. 20th
Test 3	Week of Nov. 17th
Final	Dec. 6th, 10:30-1:15 Angell B112

Test Reviews: I will provide a brief review for each test before the test. I will also work out or set up solutions to problems (from the text and other sources) in almost every lecture.

American Chemical Society (ACS) standardized exam: This exam will be given twice: the first ACS exam will be after test 1 (~week of Sept. 22nd) and the second time will be between the third test and final. They will be held in Lafayette L403. **If you do well on this test, I will replace your lowest test score with your percentile score on this exam (using the higher of the two scores)**. If you do poorly on the ACS exam it will not count. **It only helps you to take these exams!**

Final Exam: There will be a **comprehensive final** on Dec. 6th in Angell B112 between 10:30-1:15 a.m. It will be about twice as long as a test.

LABORATORY

There **is no lab manual** for this course. Laboratory information will be posted on Blackboard. **Your TA is responsible for assigning points to the lab, which will account for approximately 20% of your total points.** Below are some considerations for lab; your TA will provide more a more detailed description during your first lab meeting. **All labs are in Cook A141 and the first labs will be on Sept. 11th and 12th.**

Lab Notebook: A **bound composition notebook** is required, which are available at the UVM bookstore. All **data must be recorded in blue or black ink.**

Safety Goggles/Glasses: Approved safety glasses or goggles must be worn by everyone once an experiment has started anywhere in the lab room. **Students not wearing who do not follow this rule will be given a zero for that experiment.** Contact lenses are not allowed because some of the solvents we will be using may melt them onto your eyes. Prescription glasses may be worn under safety goggles only.

Breakage Card: Prior to the first lab, you must purchase a breakage card from the Chemistry stockroom, if you have not purchased one last semester. You need to have this card to do many of the experiments.

Locks: Record the combination of your lock because the stockroom charges $1.00 to look up this number.

Attendance: Your TA will take attendance in lab and report this to me. **If you miss more than two labs you receive an F for the entire course** and incompletes can only be granted by your academic dean. If you think you are going to miss lab let your TA (or me) know; we may be able to fit you into another section.

Summary of Points: The table below gives an **approximate** breakdown of points and percentages for different components of the course. If needed, I will readjust the points assigned by your TA in lab to fit into this scheme.

Quizzes	140 points	17.5%
Test 1	100 points	12.5%
Test 2	100 points	12.5%
Test 3	100 points	12.5%
Final Exam	200 points	25.0%
Laboratory	160 points	20.0%
Total	**800 points**	**100%**

Topics Covered:

Fundamentals
Chapter 1: Quantum World
Chapter 2: Atoms
Chapter 3: Chemical Bonds
Chapter 4: Molecular Shape and Structure
Chapter 5: Gases
Chapter 6: Liquids and Solids: Focus on Sections 6.1-6.6
Chapter 8: Thermodynamics: First Law
Chapter 9: Thermodynamics: Second and Third Law (time permitting)