Chemistry 141 General Chemistry Fall, 2013

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       (2) Case/Myers/Goldman, Chemistry 141 Laboratory Manual, Fall 2013 Version.

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Your course grade will be determined as follows:

Qzs & Prob Sets 50    Grades will be determined on a modified 10 point scale. That is, point totals of 900 or above are guaranteed an A, 800 or above a B, 700 or above a C, and 600 or above a D, and those with point totals below but near a cutoff will be considered individually for the next higher grade.
Tests 500
Laboratory 210
Final 240
Total 1000

Study Groups: Educational research studies have shown that participation in a regular, scheduled, weekly or biweekly study group (3 to 5 students) significantly improves student performance in many courses, especially those in science. Formation of and participation in such groups is therefore strongly advised. I will try to have a help session for you each week as well, but this should be in addition to, not in place of, group study times of this sort.
Help: I plan to hold two weekly help sessions specifically for Chem 141 students, at times and places to be determined later. Beyond that, my schedule is (or will be) posted on my office door (C-108/GCS) and on my web site (https://facultystaff.richmond.edu/~wmyers/offschdl.pdf), and it shows (or will show) times when I have regular commitments. To schedule an individual conference, see me before or after class and we will try to find a mutually agreeable time for an appointment, but note that the time just after class might be sufficient to address some of your questions. Note that even at times when I am involved with students in other activities in my office or lab, I will usually not be tied up every minute, so if I know you are waiting, I can probably find some time for you within an hour. In those cases, bring something to study; look for me in my office, or in my lab, C-109, or in C-102, the big instrument room just down the hall; let me know you are waiting; and I will try to make time for you as soon as I can. There is a lounge area in the same corner of Gottwald as my office, so you could use this as a place to wait.

Quizzes/Problem Sets: While unannounced 10 minute quizzes may be given at any time, I expect mainly to provide you with problem sets as take-home assignments. The total value for such exercises will be as shown above, though each quiz or problem set will be graded as if it were worth 10 points. There is no limit to the number of quizzes/problem sets that may be given, but you can expect 15+ of them over the semester.

Tests: Tests will be given on **Sept. 9 (Mon.), Oct. 7 (Mon.), Oct. 30 (Wed.), and Nov. 25 (Mon.)**. Whatever has been covered by the end of the lecture immediately preceding the test is fair game for the test, but you can expect the coverage to be something like this:

- **Test 1** ( 50 points) - Sections A to B (Chapters 1-4 plus sections of 14 and 18)
- **Test 2** (150 points) - Sections A to F (Chapters 1-4, sects of 14 and 18, plus 8, 16, 13, 5-7)
- **Test 3** (150 points) - Sections A to G (Chapters 1-8, sects of 14, 16, 18, plus 7, 10, and 13)
- **Test 4** (150 points) - Sections A to I (Chapters 1-10, parts of 13, 16, 18, plus 14, 15, and 12)

Note that since the course is cumulative (builds on itself), all earlier parts are liable for coverage on any test. The emphasis, however, will be on material covered since the last test. Tests will normally not be returned before the first class meeting after the weekend following the test.

Final Exam: There will be a final exam, which will be comprehensive over the entire semester's work. It will be given in the three hour block of time designated by the Registrar’s Office for courses that meet at our class times. (As of 8/22/13, the finals for my sections were scheduled: the 10:30 MWF section = Monday, Dec. 9—at 9 AM to noon; the 9:00 MWF section = Tuesday, Dec. 10—at 9 AM to noon.)

Honor: All work submitted under your signature in this course is pledged as being your own work. This applies not only to quizzes, tests, and examinations, but also to graded problem sets and laboratory reports. In particular, consulting lab notebooks or lab reports from previous years of this course is considered an honor code violation. In many cases lab work will be conducted in groups, but even then, any lab reports following such experiments should be prepared individually. The honor code prohibits discussing any test with anyone in the course who has not taken it until the test is graded and returned or until a key to that test is posted.

Course Objectives: There are four general goals I have for you in this course. We will primarily use lecture and guided discussion as the means of achieving these goals, along with experiences, observations, and exercises in the context of laboratory work and in-class demonstrations. The goals are for you to:

1. Appreciate the fact that chemistry is a human endeavor.
2. Understand foundational chemical concepts.
3. Recognize the relationship of chemistry to other areas of science.
4. Use chemical principles to solve elementary chemical problems and to answer elementary chemical questions.
Field of Study Statement: **Chemistry 141 carries Natural Science Field of Study credit.** Chemistry 141 was designed as a stand-alone, one-semester course. In this course, you will encounter foundational concepts on which you can build an understanding of how the physical universe is organized and operates. Important historical figures are discussed, and you will be brought to consider how original experiments were designed and how the data that resulted were interpreted (and sometimes re-interpreted) in the process of development of current theories and models of chemistry. Indeed, you will conduct your own guided experiments, and thus gain experience in observation (both quantitative and qualitative), data collection and interpretation, and report preparation, all in a number of chemical contexts. A significant feature of this course is the exploration of connections between chemistry and allied scientific subjects, especially including biology and physics. In this process, you will be shown the beautiful (in the opinion of your instructor) way in which chemical concepts work themselves out, especially in biological and biochemical behaviors. Throughout the course, emphasis will fall both on the development of chemical principles and on understanding how science is done by working scientists, including the process of generating tentative ideas and in designing and conducting experiments to test them.

Attendance Policy: You are expected to attend every lecture and lab meeting in the course. Absences will be excused only for cause--examples of which include serious illness, a death in your immediate family, or participation in a scheduled function of a group representing the University, such as an athletic team on an out-of-town trip. I will decide whether an absence is excused or not. You will be held responsible for work missed in such absences, and arrangements should be made (prior to the absence if at all possible) to make up such work. Only under extraordinary circumstances will you be allowed to makeup a missed test, problem set, or quiz. Instead, either a grade of zero will be recorded if your absence is not excused, or, if your absence is excused, the other work you do will be re-evaluated (re-scaled) so as to compensate for the missed work.

I reserve the right to require attendance of any student who is, in my opinion, endangering his or her performance in the course by excessive absences. When such a requirement is imposed, a single subsequent unexcused absence is grounds for assigning a grade of F in the course.

General rules for using the attached day-to-day schedule: The schedule of topics is as fixed as I can make it, and I expect that we will discuss those topics in the order shown.

Note where we are at the end of each day, and prepare to discuss the next topics in the schedule. [The phrase, “prepare to discuss the next topics”, means to read the material referenced in the “Chapter.Section” column, begin to think about ideas presented there, study the figures, work through the sample problems, and try a few of the homework questions.] It is normal for the pace of the class to vary from the planned schedule, so do not be surprised if we get a little ahead (unlikely) or behind (likely). Note specifically in this connection that, as mentioned earlier, tests will cover whatever was discussed through the last class session before the test. If we are ahead (unlikely), the test will cover more. If we are behind (likely), the test will cover less.