Instructor: Dr. Dean B. Atkinson (Dr. A. or Dean)  
Office: SRTC – 476, AtkinsonD@pdx.edu  
Web: http://www.chem.pdx.edu/~atkinsdb/teach/320/ and Desire2Learn

Office Hours: MTW 9:30 - 10:30 a.m. or by appointment.

Grading: Homework (online, explained below) worth 60 points  
Quizzes (Tuesdays, 10 points each) worth 40 points  
Weekly Exams (Thursdays, 50 points each) worth 150 points  
Final Exam (Thursday, July 17, 2014, 2:15 p.m.) worth 100 points  
Participation Exercises / Evaluation worth 50 points

Grades are based on the total of the above categories with a maximum of 400 points possible. The percentage scores below will guarantee the letter grade shown, but I may choose to revise the breakpoints downward at my discretion (based on the curve) and differentiate (+’s and –‘s) within the letter grades: [(A) > 90%, (B) > 80%, (C) > 65%, (D) > 55%]

(The lecture schedule is below.)

THE TEXT is Quantitative Chemical Analysis 8th Edition by Harris (Freeman/Macmillan, Inc.) ISBNs: 9781464159138 (etext and online HW) OR 9781464159244 (Loose-leaf, etext, HW). These two options are available at the bookstore or directly from Macmillan at http://www.whfreeman.com/Catalog/discipline/Chemistry/AnalyticalChemistry.

It is an expensive text, which is why I chose the etext and loose-leaf options to save you money; but it is widely recognized to be one of the best and is an excellent reference that will probably serve you well in your future career. I think that a good study technique is to quickly read over the sections of the text that will be covered before the lecture and then to read it again more carefully (and work through the examples and problems) at some point afterward. This will be especially true because we will be skipping around a bit in the text and the reading is pretty extensive relative to General Chemistry.

THE HOMEWORK (Online at Sapling Learning) is all done online and is graded on participation (you get 5 points per set that you attempt, even if you don’t get everything right). You can do the assigned homework anytime you want, but you should do the applicable homework before the exams. Since the homework grades are based on participation, you don’t have to fight the “getting exactly the answer the program expects” problem that some online homework tools have, and I have set the tolerance “loose” enough that you can get credit if you are doing the problem right. The big advantages of Sapling are: there are a lot of problems available, it’s not tied to a particular text, you can repeat a problem with a different set of numbers, it provides instant feedback and hints, and it’s available to you anytime via the web. Register yourself and get rolling on the homework sets as soon as you can.
THE QUIZZES are administered weekly on Tuesdays, usually near the end of the class. They are simple qualitative checks (five multiple choice questions) that you are keeping up with the reading and lecture material.

THE WEEKLY EXAMS are in-class, 45 minute exams, followed by a quick 15 minute debrief and then a normal lecture (or vice versa). This is an efficient use of time (critical because of the compressed summer format) and also tends to decrease the nervous tension about performance (you will know immediately what the test was about, and – most likely – how well you did). You will be allowed to bring a one-page (one side of an 8.5 x 11 sheet of paper) set of “crib notes” containing any information that you find useful to each of the exams.

THE FINAL EXAM is two hours in-class and will be comprehensive. In this case you may bring two pages of crib notes.

Old midterm and final exams are available on D2L for you to study and I can provide more on request via email. I never provide answer keys, but you are encouraged to develop a consensus key with your classmates and I am happy to review worked versions of the sample exams during my office hours.

Schedule (subject to change, except exams and due dates)
Reading marked with an asterisk * should be primarily review.

M June 23   Introduction / Philosophy / Format / Lab / Statistics & Sampling
   Reading: Ch. 0 – 2*, 3
T June 24   Random Error (Uncertainty) / Probability and Statistics - 1 / Quiz 1
   Reading: Ch. 3
W June 25   Probability and Statistics – POGIL exercise
   Reading: Ch. 4
R June 26   Statistics, Data Evaluation and Decision Making / Weekly Exam 1
   Reading: Ch. 4

M June 30   Aqueous Solutions / "Simple" Acid-Base Titrations
   Reading: Ch. 6.1, 6.5-6.7, 10.1-10.3*
T July 1    Activity Concept / Quiz 2
   Reading: Ch., 7.1-7.3
W July 2    General Equilibrium Approach / POGIL exercise
   Reading: Ch. 7.4, 7.5
R July 3    Applications of GEA to Monoprotic acids –/ Weekly Exam 2
   Reading: Ch. 8

M July 7    Multiprotic acid systems/ Potentiometric Titrations
   Reading: Ch.9
T July 8    Polyprotic acid – POGIL exercise / Quiz 3
   Reading: Ch.10.4-
W  July 9      Complex Ions  
       Reading: Ch. 6.4, 11.1
R  July 10     EDTA Titrations / Weekly Exam 3  
       Reading: Ch. 11.2-
M  July 14     Gravimetric/Argentometric Methods  
       Reading: Ch. 26.1-26.4
T  July 15     Intro to Spectroscopy / Quiz 4  
       Reading: Ch. 17
W  July 16     Quantitative Spectrochemical Methods  
       Reading: Ch. 18

Thursday, July 17, 2014 FINAL EXAM (2:15 – 4:20 p.m.)