

**SYLLABUS**  
**Chemistry 222 - General Chemistry II**  
**Winter Quarter 2013**  
**MWF 2:00 - 3:05 p.m. Hoffman Hall**

Instructor: Dr. Dean B. Atkinson (Dr. A.)  
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<http://chem.pdx.edu/~atkinsdb/teach/222> and [D2L](#) (except email)

Office Hours: Monday, Tuesday, Wednesday 9:30 a.m. - 10:30 a.m. (or by appointment)

Text: *Chemistry: A Molecular Approach*, Vol. 1, 2<sup>nd</sup> Ed., Nivaldo J. Tro (Pearson Prentice Hall, 2011, PSU edition). Other editions of this text may have different page and problem numbering.

Grading: Weekly Online Homework worth 100 points – see below  
Two Midterms (see schedule below) worth 100 points each  
Final Exam (**Wednesday**, March 20, 2013, 12:30 - 2:20 p.m.) worth 150 points  
Course Participation (clickers) worth 50 points

Grades are based on the total of the above categories. The following scores will guarantee the letter grade shown, however I February choose to revise the breakpoints downward at my discretion and I will differentiate (+’s and –’s) within the letter grades at my discretion:  
[(A).90%, (B).80%, (C).65%, (D).55%]

**Required Access to Online Homework System:** *Mastering Chemistry Plus*. If you did not receive an access code with your book, you can purchase one at the website, but be SURE you are buying the right one (the Plus version, not the old Mastering Chemistry). Note: Completion of CH 286 (Workshop) is acceptable in lieu of Mastering Chemistry.

**Clickers:** We’ll be using iClickers this term. (You’ll get points for coming to class, and you won’t have to buy a new system – be sure you attend the first day to get your clicker).

**Schedule** (subject to change - except exams)

M	January 7	Introduction / Ch. 5 Intro Gases
W	January 9	Ch. 5 Gas Laws
F	January 11	Ch. 5 Kinetic Molecular Theory
M	January 14	Ch. 5 It’s a Real Gas!
W	January 16	Ch. 6 Calorimetry
F	January 18	Ch. 6 Enthalpy
M	January 21	Ch. 6 Thermochem
W	January 23	Ch. 6 Hess's Law
F	January 25	Ch. 11 Liquids/Phase Changes
M	January 28	Midterm Review: Gases and Thermo

W	January 30	<b>MIDTERM 1</b> (Acid-Base and other aqueous Equilibria)
F	February 1	Ch. 11 Intermolecular Forces / Solids
M	February 4	Ch. 11 Solids / Concentration
W	February 6	Ch. 12 Solutions
F	February 8	Ch. 12 Concentration
M	February 11	Ch. 12 Solubility
W	February 13	Ch. 12 Colligative Properties
F	February 15	Ch. 13 Intro to Kinetics
M	February 18	Ch. 13 Rate Laws
W	February 20	Ch. 13 Effect of Concentration
F	February 22	Ch. 13 Calculus (eek!)
M	February 25	Midterm Review: Phases of Matter and Changes
W	February 27	<b>MIDTERM 2</b> (Thermochemistry, Electrochemistry)
F	March 1	Ch. 13 Kinetics vs. Thermo
M	March 4	Memorial Day - University Closed
W	March 6	Ch. 14 Equilibrium
F	March 8	Ch. 14 Reaction Quotient/Equilibrium Constant
M	March 11	Ch. 14 Stress!
W	March 13	Ch. 14 LeChat...’s Principle
F	March 15	Final Review Session

**Wednesday, March 20, 2013, 12:30 a.m. – 2:20 p.m. FINAL EXAM** (note change from regular class time – if you come at 2 p.m., you won’t have much time to take the test)

**THE TEXT** is *Chemistry: A Molecular Approach* by Nivaldo J. Tro. It looks like a good treatment (this is the first time I’ve used it) and should be a useful reference for your future chemistry career. (Not a good idea to sell your science books back – you may need them again!) We will be skipping around a bit, so I will try to give you a feeling for the sections of the text that we will be covering in the next lecture during each class meeting. From experience, we find that a good study technique is to quickly read over the sections of the text which will be covered **before** the lecture and then to go back and read it again more carefully at some point afterward.

**THE HOMEWORK** is administered online – you’re probably used to the drill already, if you took 221 in the Fall here, if not, come and talk with me about strategies. The big advantages of online homework are the instant feedback you get and the ability for **you** to do more problems than **we** could ever stand to grade. The grading scheme I use is mostly participation based (you get credit for making an effort on the problems) but be forewarned that not doing the homework will probably result in poor performance on the exams.

**THE CLICKERS** are also known as classroom response system tools. I’ve been dying to use these since I started teaching and I’m finally convinced that the technology is good enough (and the price

is low enough) to make it worthwhile. The idea is that you won't just sit there like a sponge trying to absorb information, but that you'll take an active role, even in class (hopefully you always do outside of class). It also gives me some indication if the lecture has gone completely off the rails and people have no idea what I'm talking about.

**THE TWO MIDTERMS** are in-class, 65 minute exams. You will be allowed to bring a one-page set of "crib notes" containing any information that you find useful.

**THE FINAL** will be one hour and 50 minutes, in-class during Finals Week. You may use two pages of notes. No one that skipped the Final Exam has ever passed this class, as far as I know.

**ALL EXAMS** will be primarily short answer, problem solving based written tests. You'll be allowed your crib sheets, a calculator, a pencil, and your brain. Using someone else's brain will be harshly penalized. We will spot check student IDs during the test, so try to remember to bring yours on those days. Obviously, if the name on the test doesn't match the name on the ID, there will be serious consequences for both people.