CHEMISTRY 125-03 Syllabus

General Chemistry for Engineering Disciplines, Spring 2011
MW 11:10 – 1:30 pm, F 11:10 am -noon Bldg 38-121A

Course Information: Chemistry 125 is the second term of a general chemistry course designed for students in engineering. This is a fast paced course that requires a passing grade in Chem 124 * and a year of High School chemistry background. Our topics were chosen to provide an understanding of the discipline and to support future courses. This course will cover: intermolecular forces, solubility, solutions and their properties, kinetics, equilibrium, the basics of acids and bases, and electrochemistry. *Technically, a passing grade is a “D” or better, but we STRONGLY RECOMMEND that you not attempt Chem 125 with a “D” grade in Chem 124.

Office Hours:

TR 9:30 – 11:00 am    Friday 9:00-10:00 am
Please NOTE that my Office Hours are SUBJECT TO CHANGE as the quarter progresses. I’m also available to help you anytime you find me in my office with the door open.

Materials required:

- A non-programmable SCIENTIFIC CALCULATOR. You need to have this by the first quiz, which is scheduled for the second day of class.
- A LAB NOTEBOOK with carbonless copies.
- You must know your STUDENT EMPLID. We will use it on some scantrons.
- A Cal Poly email account – I’ll be sending emails throughout the term to the class.

Class Guidelines

• Treat everyone in the Studio classroom – Instructor, TAs, technical staff, peers – with respect. We’re all adults here, so let’s act like it, please. Thank you.

• The Studio is technically a laboratory in addition to a lecture classroom, so food is NOT allowed. I allow water in closed containers in your backpacks.

• Do NOT allow your phone to ring during class time. Do NOT answer your phone during class time. Do NOT text during class time. Do not even take your phone out during class time. Do NOT play your iPod or similar device in class. If any of the above things occur during class, I will end up with LOTS of electronic devices to sell on Craigslist...

Course Organization & Expectations:

• Class Time: Class starts on MW at 11:10 am sharp. Please make sure you get to class on time to prevent distracting classmates and instructor by entering the class late. The class ends at 1:30 pm on MW. Class meets on F from 11:10 am – noon. Don’t plan on leaving early any day! There may be days we do end class early, but in general, you are expected to remain in class for the entire scheduled time.

• Integrated lecture and laboratory. This course is taught entirely in the Chemistry Studio classroom. Lecture, labs and activities are all in the same classroom and are facilitated with the use of computers. This environment encourages students to take a more active role in learning than does a traditional lecture setting, and promotes student collaboration.

• Web based. Many of the course materials, such as full syllabus, lecture schedule, laboratory manual, report forms, study guides and additional materials are posted on-line. Make sure to bookmark the class website and visit DAILY because it is updated often.

• Prior knowledge. All concepts and skills from Chem 124 are considered prior knowledge you come into this course with, and some topics in Chem 125 will build on this prior knowledge. In particular, you are expected to have a good grasp of Thermodynamics (ΔH, ΔS, ΔG), Lewis Structures, VSEPR shapes and molecular polarity coming into this class. It is your responsibility to review these topics if you feel lacking in your knowledge base. A short diagnostic review quiz will be given during the second class meeting to help you review and give you feedback.

• Attendance & Class Participation. Attendance every day, whether we’ll be having lecture or lab is required. I expect you to attend every class meeting and be actively engaged, if only in taking notes, during every class meeting. I can see everything in the Studio and I will notice if you leave early. I won’t regularly take roll, but I will randomly check attendance. PLEASE ask questions if you don’t understand something during lecture, don’t feel like you’re the only one that doesn’t understand me, and speak up if you know
answers to my questions. PLEASE SHUT OFF YOUR CELL PHONES UPON ENTERING THE CLASSROOM & LEAVE YOUR i-Pods, MP3 PLAYERS and iPads AT HOME!!

• Laboratory. Your laboratory performance constitutes at most 20% of your grade for the course. See the website for more information.

• Quizzes: All quizzes together will constitute less than 20% of your total course grade. The lowest quiz out of 4 will be dropped. A review quiz will also be given the second class meeting. Quizzes will be based on the worksheets done in class or out as well as suggested text problems and lab material. Quiz make-ups are not possible. Quiz dates are posted online.

• Exams. There will be two exams and one comprehensive final (25% of overall course grade). All exam dates are posted online.

Course Policies:

• No make-up quizzes or exams. If you have to miss a quiz, that will be the one you drop. No quizzes or exams will be taken at times other than those listed online unless there are certified and/or extenuating circumstances which must be documented, if possible, well before the day of the exam. This means I DO NOT GIVE EARLY OR MAKE-UP QUIZZES or EXAMS. See the website for more details.

• You may only use a non-programmable calculator during exams and quizzes. Sharing a calculator during quizzes or exams is forbidden.

• Academic integrity. Cheating is any form of falsely claiming work to be your own when it clearly is not (i.e., copying another person's work, or using unauthorized aids or materials on a quiz or exam). Campus policy requires that a student who violates academic integrity must receive an "F" in the course.

• Homework - I DO NOT collect homework, but as you no doubt discovered in Chem 124, you cannot succeed in Chemistry without working problems. Chemistry is just like a sport - you can read all you want about it but unless you get out and “practice” it, you'll never excel at that endeavor. Thus, workbooks and suggested text problems will be posted online. YOU SHOULD PLAN ON SPENDING AT LEAST 8 HOURS A WEEK OUTSIDE OF CLASS STUDYING FOR THIS COURSE. THIS TIME SHOULD INCLUDE READING THE TEXT CHAPTERS AND WORKING PROBLEMS, AS WELL AS STUDYING CLASS LECTURE NOTES.

Tentative Course Schedule: Check the online schedule often for updates. A schedule of experiments is also online.

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<thead>
<tr>
<th>Week</th>
<th>Reading</th>
<th>Lecture Topics and Exams</th>
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<tbody>
<tr>
<td>1 – 3</td>
<td>Review VSEPR and Molecular Polarity Parts of Ch. 11, all of Ch.12</td>
<td>IMFs, Liquid Properties, Phase Diagrams, Concentration Units, Solubility, Solutions, Colligative Properties Review Quiz Week 1, Quiz 1 F Week 2, Quiz 2 F Week 3</td>
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<tr>
<td>4 – 5.5</td>
<td>Ch. 13</td>
<td>Kinetics Exam 1 MONDAY Week 5</td>
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<td>5.5 - 7</td>
<td>Ch. 14, part of Ch. 17</td>
<td>Equilibrium, connection to Thermodynamics Quiz 3 F Week 7</td>
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<tr>
<td>8 - 9</td>
<td>Ch. 18</td>
<td>Electrochemistry, connection to Equilibrium &amp; Thermo Exam 2 MONDAY Week 9</td>
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<tr>
<td>9 - 10</td>
<td>Ch. 15, parts of 16</td>
<td>Acids &amp; Bases, Titrations Quiz 4 F Week 10</td>
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<tr>
<td>11</td>
<td>Final</td>
<td>Monday June 4 10:10 am – 1:00 pm in Bldg 38- Rm 121A</td>
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Grading Policies:

We will be following a traditional grading scale: A range = 100 - 90%, B range = 89 -80%, C range = 79 -70%, D range = 69 - 62%, F range= 61 - 0%.

The final grade for the course will be determined by combining the scores of the two midterm exams, the final exam, the quizzes, and the laboratory portion of the course according to the distribution shown below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
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<tbody>
<tr>
<td>3 out of 4 quizzes</td>
<td>Each quiz 40 pts 30 pts</td>
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<tr>
<td>Review quiz</td>
<td>Each exam 150 pts</td>
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<tr>
<td>2 exams</td>
<td>200 pts</td>
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<tr>
<td>Final Exam</td>
<td>Laboratory 150 pts</td>
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<tr>
<td>Total</td>
<td>800 pts</td>
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More specific details on lab grading are given on the lab syllabus. Please remember that I reserve the right to change this grading scale. I won't ever raise the grade cut-offs, but I could lower them, meaning that 89 or even 88% could end up as an A- grade. That doesn't mean I'll be grading on a curve!!!! I do not grade on a curve.