

Chemistry 105 - Fundamental Chemistry

Fall Semester 1999 - Course Policies and Announcements

Instructor: Professor Kevin M. Czerwinski, Ph.D.
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Chemistry 105 and Chemistry 106 are intended for students who desire one year of college level chemistry. Topics in Chemistry 105 will include the fundamental principles and theories of chemistry which include: terminology, qualitative concepts, quantitative skills, and laboratory skills. The general topics included in the first semester are: descriptions of matter, chemical measurements, chemical reactivity and reactions, reaction stoichiometry, properties of gases, thermochemistry, atoms and electrons, chemical bonds, and molecular structure. Our formal meetings will take place in three different settings. The **lecture** will serve to enliven, emphasize, and elaborate the topics discussed in the textbook. I will not cover every section of the book. You are responsible for **all** assigned readings. This means that you must read and understand the textbook. If you do not understand something and I do not cover the material in class, you will need to make an effort to clarify this material (See "Course Survival," on page three). The **discussion** section will be reserved primarily for student interaction and problem solving. It is here that we will discuss those things with which you are having difficulty. Quizzes will also be given during this period. The **laboratory** section will be the "hands on" portion of the course where students will gain practical insight into the methods used by chemists when conducting experiments. The lecture and the laboratory sections will compliment each other and the exams will incorporate material from the laboratory. Math 51 or placement into Math 100 or higher is required for this course. If anyone believes that they will have difficulties meeting the requirements for the course, please see me as soon as possible. As a science, chemistry is extremely math dependent. Chemists perform computations regularly. You will also be expected to master these calculations as they are presented.

Course Materials: The **textbook** for this course is available at text rental. It is entitled *Chemistry: Molecules, Matter, and Change* by Peter Atkins and Loretta Jones. In addition, students are required to purchase a **Chemistry 105 Laboratory Packet** (It is a thick ream of paper with all the experiments for lab) which is available at the bookstore. A **scientific calculator** is also required for the course. It must incorporate functions which compute both base ten and natural logarithms (i.e., you should see 10^x , LOG, e^x , and ln buttons somewhere on the

calculator). You will need to use this calculator in both the laboratory and the classroom so make sure you bring it with you to all class meetings and are able to operate it in an efficient manner. I am not a computer scientist and the wonders of the modern hand held calculator are often beyond my comprehension (in other words, I don't know!)--especially the 18 million function variety! A **PEN** is also required. All examinations and quizzes must be taken in pen. A five-point penalty per occurrence will be assessed for failure to do so. Quizzes and exams will be treated as legal documents—falsification of those documents is grounds for academic misconduct.

Grading Policy: I do not believe in curving grades! Curving grades means that the average grade is a "C." It also means that regardless how well you do, your grade is subject to the success of the rest of the students in the class. I believe everyone should have the opportunity to receive an "A" if that is what she or he deserves. The grading scale is designed around the philosophy that students who demonstrate a working knowledge of two-

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| thirds of the course material may expect a passing grade for the course. | 93% A |
| Those that demonstrate a higher level of accomplishment will receive a higher grade. Many times we learn by our mistakes and this too is reflected in the grading policy. As you progress through the course topics, you will find | 83% B |
| | 72% C |
| | 66% D |

that they build upon one another. If you learn something in the first week, you will use it all semester. Conversely, if you fail to learn it, it will fail you all semester! In addition, the final exam will present the opportunity to demonstrate that you have learned from your mistakes. Therefore it is to your advantage to carefully review exams and quizzes prior to the final exam. There will be three exams, three quizzes, 13 laboratory reports, a lab practical, and a **comprehensive** final exam. The final grade will be based upon the total points accumulated by you divided by the total points possible. You should therefore be able to tell how you are doing in the course by using the scale shown above-right. There are 600 total points. The total points possible for each graded item are shown below:

| | | |
|-----------------|-------------|--------|
| 3 Quizzes | 25pts/each | 75pts |
| 3 Exams | 100pts/each | 300pts |
| 13 Lab Reports | 5pts/each | 65pts |
| 1 Lab Practical | | 10pts |
| 1 Final Exam | | 150pts |

Deadlines for pre-laboratory reports and laboratory reports will be strictly enforced. Late pre-labs receive no credit. Late laboratory reports will be worth only half credit. Any report which is two weeks late (or turned in after that particular report has been graded and returned to others in the class) will receive no credit.

Student Conduct: Attendance at lectures and discussions is not required. However, attendance during scheduled quizzes and exams **is** required. Unexcused absences during these

times are unacceptable. Excused absences will be granted under certain conditions. If there is an unavoidable time conflict or emergency during a scheduled quiz or exam, contact me as soon as possible. Students are reminded that they are to conduct themselves in accordance with the rules for academic conduct. The University of Wisconsin Chapter UWS 14 of the Wisconsin Administrative Code, Rules of the Board of Regents of the University of Wisconsin System are to be followed by all students, staff, and faculty. This document may be accessed via the University Web site at <http://www.uwsp.edu/admin/studev/rights/booklet/sect02.htm>.

Course Survival: My purpose as the instructor is to guide you through your studies and assist you in any way I can. What you learn is ultimately dependent upon you. (The last page of these announcements takes up this point in more detail.) This is a five credit class and consequently it will involve a great proportion of your time. Your grade in this class will greatly effect your GPA. I strongly recommend that students work as many problems as possible. I will not collect any of the assigned problems as homework. There are additional materials which will help you to succeed in the class. The text, animations, study questions, and self tests are available through the campus network. My Web site will serve as a repository for all of the handouts in class and as an electronic reserve room for old exams and quizzes. The Chemistry Computer/AV Room is housed in Room A113 of the Science Building and is staffed by chemistry students. The *Student's Solution Manual* (by Charles Trapp) to accompany the text is available at the reserve room. Some tutoring is also available through the University. See me for more information. In fact, see me as soon as you feel you are having difficulties. I am available for consultation during my office hours and **by appointment. CALL ME!** During the times labeled as "Prep Hours" please feel free to call or knock on my door. If I am free at that time I will be happy to help you.

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|-------|--------------------------------|--------------------|--------------------------------|-------------------------|--------------------------------|
| 08:00 | Lecture Prep (Please Avoid) | | Lecture Prep (Please Avoid) | | Lecture Prep (Please Avoid) |
| 09:00 | | | | Chem105 Dis 9-A110 | |
| 10:00 | | | | Chem 105 Dis 10-A110 | |
| 11:00 | Chem 425 A111 | 105 Lab 11 B140 | Chem 425 A111 | Chem 105 Dis 11-A110 | Chem 425 A111 |
| 12:00 | | | | Chem 105 Dis 12-A110 | |
| 13:00 | Chem 105 Lec A121 | | Chem 105 Lec A121 | Office Hour | Chem 105 Lec A121 |
| 14:00 | Research C140 | Office Hour | Research C140 | Office Hour | meeting seminar |
| 15:00 | | | | | Research C140 |
| 16:00 | | | | | |

Succeeding in Chemistry 105-Suggestions for a Fruitful Semester

Let's use some common sense. No one starts the semester saying, "Oh cool, I think I'll fail just for the fun of it!" Everyone would like to do well in this course. Therefore, I do not "curve" the grades. Curving means that some students must receive low grades while the majority get "C's" and a very few get the "A's." I believe that each of you is capable of getting an "A." However, you will need to learn the material and effectively demonstrate this knowledge to me on the exams and quizzes before I can grant you that "A."

So, you may be asking, "How exactly do I learn chemistry?" I have found that the easiest way to learn chemistry is to read the introductory paragraphs for each chapter and the summary **first**. You will then know "why" you are reading what is in the chapter. Do you just randomly go to the grocery store or gas station? Of course not, there's usually some point to it--some goal. Find out your goal for the chapter before you read it. When you do read the chapter, skim over it quickly the first time. You are now ready to come to lecture. After lecture go back and concentrate on the things you don't understand. Study each day! Reading science is unlike reading a novel. It is more like reading a novel written in a language that is foreign to you. First you must understand what the words mean and then you can realize the meaning of the phrases and sentences.

Athletes and musicians practice daily to perform often times only once a week. You will "perform" on the quiz or exam. Practice each day and you will do well. "Practice" means reading, learning the vocabulary, and working problems. The exams and quizzes will closely resemble the textbook questions and the extra worksheets that I hand out so why not do them ahead of time! Do not simply study the answers. Study how to work the problems as well as why you are using a particular technique for the solution. I say "work," because all problems will not be easy. Many will be very difficult. To help you solve these difficult questions I urge you to study in a group. Each group should meet at **least** once a week to work on the assigned material.

During the lecture period please feel free to ask questions. If you do not understand what I am talking about, other people in the class probably don't understand either. Ask questions if you are confused. My job is to help you and to answer your questions. The one time that I will not answer questions is outside of class time on the day of a quiz or exam. On the day of a quiz it is usually too late for questions anyway! Do not fall behind and then try to catch up right before the quiz or exam. You will not do as well this way!

I strongly believe in active learning and consequently I will be asking you questions during lecture. I do not necessarily need the correct answer when I ask a question, but I do want your answer whatever it may be. How or why we arrive at our conclusions is as important as the conclusion itself. This will further be explored during the examinations and quizzes. At least 30% of each will be devoted to conceptual materials as opposed to simple calculations. These concepts will be developed in class so it is important that you take good notes.

When taking notes, make sure your notes provide an **explanation** for the material that I am placing on the blackboard or saying. If you just copy diagrams off the board, why am I up there teaching? I might just as well take snapshots of the board and pass them out year after year. One method for taking notes is to use only one side of the sheet during class, then rewrite your notes in greater detail on the opposite side of the sheet after class to expand your grasp of the material. In this way you immediately check whether you really understand what it was that we discussed in class that day. If you realize that you did not really understand what was going on, get help. Your study group would be an excellent place to do this! Discuss with each other what the point of each lecture was and whether it made sense to you. This might be an excellent way to start each group session.

If you are having a problem, come and see me. I am paid to help you! In fact you paid me by paying your tuition. Do not wait until the night before the first exam to see me. Come to me as soon as you realize that you are having difficulties.

Chemistry 105 - Fundamental Chemistry
Fall Semester 1999 - Course Syllabus

Instructor: Professor Kevin M. Czerwinski

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EXAM SCHEDULE: Wednesdays, 10/6, 11/10, 12/8, 18:00-20:00, A121 Science Bldg.

QUIZ SCHEDULE: Thursdays, 9/23, 10/21, 11/18, during the discussion period.

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|---------|-----------------|-----------------------------|--------------------------------|
| Week 1 | Sept. 2, 3 | Introduction, Ch. 1 | |
| Week 2 | Sept. 8-10 | Ch. 1 (pp 1-32) | |
| Week 3 | Sept. 13-17 | Ch. 2 (pp 39-68) | |
| Week 4 | Sept. 20-24 | Ch. 3 (pp 77-88) | Quiz 1 Ch. 1,2 Sept. 23 |
| Week 5 | Sept. 27-Oct. 1 | Ch. 3 (pp 90-109) | |
| Week 6 | Oct. 4-8 | Ch. 4 (pp 117-123) | Exam 1 Ch. 1-3 Oct. 6 |
| Week 7 | Oct. 11-15 | Ch. 4 (pp 124-134) | |
| Week 8 | Oct. 18-22 | Ch. 5 (pp 143-156) | Quiz 2 Ch. 4 Oct. 21 |
| Week 9 | Oct. 25-29 | Ch. 5 (pp 156-166) | |
| Week 10 | Nov. 1-5 | Ch. 6 (pp 181-194) | Exam 2 Ch 4,5 Nov. 10 |
| Week 11 | Nov. 8-12 | Ch. 6 (pp 194-209) | |
| Week 12 | Nov. 15-19 | Ch. 7 (pp 219-237, 240-251) | Quiz 3 Ch. 6 Nov. 18 |
| Week 13 | Nov. 22-24 | Ch. 8 (pp 267-282) | |
| Week 14 | Nov. 29-Dec. 3 | Ch. 9 (pp 303-315) | Exam 3 Ch 6-8 Dec. 8 |
| Week 15 | Dec. 6-10 | Ch. 9 (pp 316-334) | |
| Week 16 | Dec. 13-17 | Ch. 9, Concluding Remarks | |

FINAL EXAM 12:30PM-2:30PM DECEMBER 20 A121

**Chemistry 105 Laboratory Schedule
Fall Semester 1999**

| Weekday | 8:00-10:50 | 11:00-1:50 | 2:00-4:50 |
|----------------|-------------------------------|-----------------------------------|-------------------------------|
| M | Section 1 (Taft) | Section 2 (Taft) | Section 7 (Rogers) |
| | Section 5 (Shulfer) | Section 15 (Timmerman) | |
| T | Section 9 (Taft) | Section 11 (Czerwinski) | Section 12 (Taft) |
| | Section 13 (Tanke) | | |
| W | Section 10 (Taft) | Section 16 (Tanke) | Section 4 (Zamis) |
| R | Section 14 (Tanke) | Section 3 (Zamis) | Section 8 (Shulfer) |
| F | Section 6 (Rogers) | | |

Lab sections shaded gray meet in room C124. All others meet in room B140. The instructors name is shown in parentheses.

| Week | Experiment |
|-------------|---|
| 1 | Thursday/Friday labs meet for Attendance |
| 2 | Check in /activities |
| 3 | Experiments 1 & 2: Error Analysis and Intro to Lab Equipment |
| 4 | Experiment 4: Density. |
| 5 | Experiment 5: Water in a Hydrate. |
| 6 | Experiment 26: Law of Definite Proportions. |
| 7 | Experiment 24: Chemical Reactivity. |
| 8 | Experiment 6: Separation of a Mixture. |
| 9 | Experiment 11: Limiting Reactant. |
| 10 | Experiment 7: Titration of Vinegar. |
| 11 | Experiment 8: Atomic Weight of a Metal by Gas Evolution. |
| 12 | Experiment 9: Molecular Mass of a Volatile Liquid. |
| 13 | Thanksgiving Week – No Labs |
| 14 | Experiment 14/14A: Thermochemical Experiments |
| 15 | Experiment 12: Spectrophotometric Determination of Iron. |
| 16 | Lab Practical / Check out. |
| 17 | No Laboratories--Exam Week |