

Chemistry 120: General Chemistry I

Tentative Course Syllabus
Summer Session, 2004

Instructor:	John G. O'Brien	Office Hours:	To Be Determined
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Lecture:	1:00 – 2:40 pm	MWF	Barnett Hall 112
Recitation/Lab:	1:00 – 4:50 pm	TTh	Magruder Hall 1040

REQUIRED MATERIALS: All materials available at the Campus Bookstore

Textbook: “Chemical Principles, 4th Ed.” Zumdahl, 2002. A study guide, solutions manual and Cd-ROM are also available and are recommended.

Lab Manual: “Chemistry 120 Lab Manual” Truman State University, Spring 2004.

Lab Notebook: A bound laboratory notebook capable of creating duplicate pages is required of all students. Regular spiral bound notebooks and glue bound notebooks are not acceptable.

Lab Kit: A lab kit is required that contains many small components you will need to complete the laboratory portion of the course. Pay \$6.25 at the cashier’s window in McClain hall and bring the *original* receipt to lab to receive your kit. Please pay this fee prior to the first lab meeting.

Safety Equipment: OSHA approved goggles must be worn in the laboratory at all times – no exceptions. All safety goggles must meet the ANSI Z87 or Z87.1 safety standard. Proper attire must also be worn in the laboratory at all times. This includes closed-toe shoes, long pants and a shirt that provides upper body coverage equivalent to that of a T-shirt. Shorts, sandals/clogs, and any shirt that does not cover the upper arms or midriff are not to be worn to lab. Inappropriately clad people will not be allowed into the laboratory.

Calculator: You should have a hand-held, non-programmable scientific calculator capable of scientific notation for use on homework problems, quizzes, and exams. It will be assumed that you have a calculator for all quizzes and exams (and you know how to use it). The instructor will not loan calculators to any student that does not have one.

Computer Skills: You are expected to have general computer skills and be able to use a web browser and a word processing package. The use of a spreadsheet will be introduced during the course of the semester. The web page for the course is at www2.tuman.edu/~jobrien/CHEM120.htm.

DESCRIPTION

Chemistry 120 and 121 are courses that provide a foundation for many other courses in chemistry and other sciences. Throughout these two courses, you will be introduced to a great deal of information very rapidly. We will not spend a great deal of time on any one topic. Even though we do our best to maintain continuity, at times it may seem to you (and to me) like we are skipping from one subject to the next without covering anything in sufficient detail. It may help if you remember that you are learning many concepts and techniques that will be expanded upon in upper-level courses in the future.

In the framework of gaining a better understanding of how science works and the thought processes needed to tackle complex problems, we intend:

1. to learn some fundamental concepts and facts in the field of chemistry.
2. to prepare for more advanced chemistry (and other science) courses.
3. to learn fundamental skills and safe lab practices.
4. to learn to approach and solve problems in a logical and efficient manner.
5. to enjoy learning about chemistry.

REQUIREMENTS

Any student who has a disability that may prevent him/her from fully demonstrating his/her abilities must contact me personally as soon as possible so that we may discuss any necessary accommodations to ensure full participation and facilitate the educational opportunity. If you have a documented learning or other disability, you must contact the Student Affairs Office immediately to assure that your needs are met.

You are expected to gain an understanding of, and be able to apply, the basic chemical principles covered in Chapters 1 through 5, Chapter 9, Chapter 12 through 14, and parts of Chapter 21 (the remaining chapters in the text will be covered in CHEM 121). Attendance is required at all regularly scheduled course meetings. I will not call roll, but choosing not to attend class will put your grade for the course in jeopardy.

Points will be earned on four tests, a series of short weekly quizzes, and the final exam. Information covered in the laboratory portion of the course is fair game as far as “testable” information is concerned. If you are going to miss a test, you must get approval from me **beforehand** if you would like to make it up.

There are four in-class exams, of which the three highest count toward the final course grade. An exam usually consists of short answer (no more than about 20%) and longer “word problems”. Well prepared students will find the in-class exams challenging; unprepared students will find the exams impossible.

The final exam is a nationally standardized exam prepared by the American Chemical Society for the first semester of general chemistry. The grade on the final will be the percentile scored by the student plus 100 for a maximum score of 200.

Additionally, I will make problem assignments from each chapter that we cover. These problems will be graded, but their impact on your grade will be minimal. DO NOT ignore these questions as they will serve as the template for test questions. These problem sets will provide an excellent opportunity for you to work in study groups. Participation in a study group will greatly enhance your learning experience in General Chemistry by providing multiple points of view and approaches to any given problem.

LABORATORY

Laboratory skills and experimentation make up the core of the chemical discipline. The laboratory is designed to teach you lab skills, reinforce concepts from lecture, and show you how to think about scientific problem solving. The importance of the lab is reflected in the fact that it counts for about 25% of your final grade.

At the start of each lab period, you are required to turn in the duplicate pages from your notebook containing the statement of purpose and the procedure for that week's experiment. For doing this and completing the exercise, you will receive 10 "completion" points (2 points for the statement of purpose, 2 points for following proper notebook format, 3 points for the procedure, and 3 discretionary points.) The procedure should NOT be a word-for-word account of what is in the *Laboratory Manual*, but should be a concise description of what is to be done. YOU WILL NOT BE ALLOWED TO CONSULT YOUR *LABORATORY MANUAL* IN THE LAB, so a well-written procedure is essential.

Proper lab notebook format is outlined in the *Laboratory Manual* and at <http://www2.truman.edu/~jmccormi/LabManual/LabNotebook.htm>, but a few guidelines will be addressed here as well. Your write-ups should include a Title, a Statement of Purpose, a Procedure, a Data section (with blank tables as necessary), Calculations (if necessary), and a Results/Discussion section. All results and observations should be written directly in the notebook close to the procedure that produced the result or observation (it is not uncommon to reserve a space in the notebook to the right of the procedure for just this purpose). Students that make temporary entries on loose pieces of paper or on paper towels may find that their temporary entries have disappeared during the course of an experiment.

- Mistakes in the lab notebook should be crossed out with a single line. Whiteout is not acceptable. Pencils are not acceptable.
- All labs should be completed in chronological order. The write-up for one experiment must be completed before the next write-up begins.
- All pages must include your name (printed), signature and the date the page was completed.
- Your notebook must have an up-to-date table of contents on the first page.
- Computer-generated tables and graphs are encouraged where appropriate. Such material must be permanently inserted into the notebook with a copy on both the original and carbon copy notebook page. Computer generated procedures are not acceptable.
- If you are working in a group and only one member of the group is recording data at the time of the experiment, you must indicate in your notebook that the original results were copies from the other person's notebook. Give the page number of the original results as well.

Also due at the beginning of each lab period are any pre-lab questions for the experiment and any post-lab questions from the previous experiment.

RECITATION

The recitation period will be used as a forum to clarify complex material and answer questions, to transmit information useful in the laboratory, and to give demonstrations. Additionally, the first 15 minutes of one recitation per week will be set aside for a short quiz. The quizzes may be taken directly from the problems for the chapter and may or may not require a numerical solution.

EVALUATION

Grades will be based on your performance in both the lecture and the laboratory portion of the course. Points will be distributed as follows:

3 1-hour exams @ 150 pts. each	450
1 Final Exam @ 200 pts.	200
Weekly quizzes scaled to	100
10 Experiments @ 10 pts. each	100
<u>6 Lab Notebook Grades @ 25 pts. Each</u>	<u>150</u>
Projected Total Points Possible	1000

GRADES

A = 100 – 90
B = 89 – 80
C = 79 – 70
D = 69 – 60
F = below 60

This is the “guaranteed” grading scale. The scale may be lowered depending on how the class did at the end of the summer, but it will never be raised. Additionally, if you are within 20 points of the next higher grade, you will be considered for promotion to that grade. Criteria under consideration will include Final Exam score, class participation, general trend in quiz and exam scores, laboratory citizenship, and attitude (in that order).

A penalty of 20% per calendar day will be assessed for turning in assignments or notebooks after the due date. After 5 days, a zero will be awarded.

EXTRA CREDIT

On each exam, there will be approximately 10% of the points available for extra credit (45 points from exams since only three exams will be counted). Another 10 points will be available for donating blood to the Red Cross in one of the blood drives that they put on during the summer.

IMPORTANT DATES

Exam #1, June 18
Exam #2, July 2
Exam #3, July 16
Exam #4, July 28
Final Exam, July 30

All tests will be semi-cumulative. That is, on each exam I will throw in a question or two covering information covered by a previous exam. This helps keep the information fresh, and will help you in the long run. The final exam is an ACS Standardized Cumulative exam.

LAB SCHEDULE

June 17	Determination of Density/Check-In/Safety Paperwork/Video
June 22	Density Lab Continued (Computer Lab)
June 24	Preparation of Alum
June 29	Preparation of Alum Continued
July 1	Preparation of Solutions
July 6	No Lab
July 8	Solutions and Reactions
July 13	Calorimetry
July 15	Spectroscopy (Enlightenment)
July 20	Polymer Properties
July 22	Molecular Models/Check-Out

Academic Honesty

You are encouraged to work with other students in the class and to talk about the material, but each student must do their own work on all exams, quizzes, and laboratory reports. Failure to do so constitutes academic dishonesty. Academic dishonesty includes, but is not limited to, using crib notes, using old laboratory data or reports, falsification of data, turning in another's work as your own or using another's works or work without attribution (e.g., copying the procedure directly from the laboratory manual). The punishment for academic dishonesty will be at my discretion and may range from a grade of zero for the work in question to an F in the course, or other punishment according to the University's guidelines.

Student Information

Place an "X" through times you cannot come to office hours. Shaded times are unavailable.

Time/Day	Monday	Tuesday	Wednesday	Thursday	Friday
8:00					
8:30					
9:00					
9:30					
10:00					
10:30					
11:00					
11:30					
12:00					
12:30					
1:00					
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3:30					
4:00					
4:30					

Official Name: _____

Preferred Name: _____ Banner ID Number: _____

Preferred E-Mail: _____

Anything I should know (lab conflicts, medical conditions, etc): _____

Chemistry Background: _____

The Federal government has ruled the "leaving personally identifiable, grade papers unattended for students to pick up" violates student privacy. *By signing below, you indicate that you will allow me to place your graded papers in a public place for you to pick up.* If you do not sign, I will hand back your papers to you personally.
