

COURSE: General Chemistry Lab II

Spring 2008

SECTION: Chem 1121-08 (CRN 747)
CREDIT: 1 hour
LOCATION: prelab E306 Sundquist, laboratory A311
TIMES: 11:10 – 2:10 Thursday
COREQUISITE: Chem 1120 lecture

INSTRUCTOR

Dr. Ron Robertson
Office: C303 Sundquist
Office phone 221-6298
Office hours posted but you are welcome to come by anytime
Home phone 615-763-2146
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TEXT

The experiments for this lab can be found at a link from the chemistry department website: www.apsu.edu/chem_page. Look at the navigation bar on the left and click on General Chemistry Labs. It is your responsibility to print the required experiments before each lab.

SUPPLEMENTARY MATERIALS

Safety goggles are required in the laboratory at all times. They must be *splash-proof* chemical goggles. It is your responsibility to purchase these goggles. They are available in the APSU bookstore, or can be purchased at a much lower price (but probably lower quality) at hardware stores, Harbor Freight Tools, etc. Rental goggles are available for \$1 per class session. No IOU's will be honored. You will not be allowed to participate in lab if you are not dressed in an appropriate manner. (See the SAFETY section below)

A scientific calculator will be needed.

COURSE DESCRIPTION

Science is a process, a way of viewing and understanding the world. It is not just a body of facts. The knowledge we have has been obtained for the most part by experiment. So it is very important to allow you an opportunity to do some "hands on" work to understand this process we call science. Your work in lab will help you to develop the APSU general education core areas of reasoning, numerical understanding, and scientific knowledge. These areas relate particularly to the university's goals of student development in the following: skills of inquiry, abstract and logical thinking, and critical analysis; the ability to understand and use numbers and statistics; and an understanding of the scientific method.

This course presents laboratory activities designed to facilitate the understanding of material covered in Chem 1120. Our lab experiments cover topics such as chromatography, spectroscopy, colligative properties, kinetics, organic synthesis, acid/base equilibria, thermodynamics, and

oxidation/reduction electrochemical reactions. A listing of our experiments for the semester is found elsewhere in this handout.

Any lab of this type is invariably of a "cookbook" nature at times. Try to look for ideas and concepts presented or visualized in the experiments. As you prepare for our quizzes, think about and summarize in your mind these ideas. The "Pre-Laboratory Assignment" and "Post-Laboratory Questions" in the lab manual for each experiment are excellent preparation and review. Please feel free to come to me for help.

ATTENDANCE

You obviously must be in attendance in order to complete the lab experiments, and your grade depends on it. Please contact me when you cannot attend a lab. I am concerned when you are absent. **If you miss a lab with an excused absence you will be allowed to take the quiz for the previous lab provided it is taken before the next lab period. You will not be able to submit lab sheets or be able to receive a participation grade for a lab which you did not attend.** Makeup labs will not be given due to scheduling of the lab rooms. See the evaluation section below for further details.

NUTS AND BOLTS OF EVALUATION

- a) You will receive one grade for this course (lab) and another grade for lecture. Unless repeating either lecture or lab you must be concurrently enrolled in both lecture and lab. The grades are independent of one another.
- b) Each experiment will be worth a total of 40 points. **Twenty points will be awarded based on your participation in the lab and the completion of the data sheets (including selected questions) for the experiment.** Sometimes you will be allowed to take these home, complete them, and turn them in the next day (Friday). Sometimes you will have to turn in the lab sheet before leaving the lab. The report will be graded and will be available to you by Monday afternoon. *Please note that this policy may be different than the policy of other instructors.* **Twenty additional points will also be awarded on the basis of a quiz which will be given following the completion of the experiment.** This will usually be at the beginning of the next lab experiment. Your lowest 20 pt grade will be dropped. This includes any zero grades you may have received for missing a lab.
- c) The Quiz: **The main focus of the quiz is having an in-depth knowledge of the work done the previous week and having a general knowledge of the experiment to be performed the current week.** The questions from the pre and post lab sections of the previous lab are excellent as a review for the quiz. The quiz will also contain a general question or questions pertaining to the assigned experiment for that day. It is acceptable to take the quiz without attending the preceding laboratory on which it is based.
- d) No makeup labs will be given. Students must attend the section of Chemistry 111L in which they are enrolled unless specific arrangements have been made with me as well as the other instructor.
- e) You are guaranteed the following marks: A 89.5%, B 79.5%, C 69.5%, D 59.5.

- f) Although each student should hand in a separate lab report, it is allowable to confer with others on lab reports unless specifically indicated otherwise. **This does not mean that you are allowed to copy material directly from another student or even your lab partner.** Cheating on quizzes will not be tolerated. A grade of zero will be assigned for that quiz as a first step, and the matter will be referred to student affairs for further action.
- g) A mid-term grade will be awarded for all students in this course. The grade awarded may not necessarily be based on 50% of the course requirements and may or may not differ from the final grade. Your mid-term grade will be posted on APSU Self-Service.
- h) If you have a condition that may affect your academic performance, I encourage you to make an appointment with me or with the coordinator of disability issues (telephone 221-6230) in order to discuss this matter.

DROP/ADD DATES

I truly hope that you will not want to or feel the need to drop this course, but if you do . . . the following dates are important.

Last day to drop without a record	January 27
Last day to drop with an automatic "W"	February 26
Last day to drop with a "W, F, FA"	April 4

SAFETY AND CONDUCT

A safe and enjoyable lab experience is my goal. To participate in lab you must study and sign the document ***General Chemistry Safety and Laboratory Rules***. You also must view the safety video. The use of the eyewash, safety shower and other safety equipment will be explained on the first day of lab. Two general and important rules are: (1) "horseplay" in the lab cannot be tolerated, and (2) safety goggles (*splash-proof*) and appropriate clothing must be worn at all times. You will be warned of inappropriate behavior, and if your behavior does not improve, you will be asked to leave the laboratory. Students are expected to conduct themselves appropriately at all times. Academic and classroom misconduct will not be tolerated. Students must read the "Code of Student Conduct" in the new Student Handbook for an understanding of what will be expected of them within the academic setting. Specific clothing requirements will be explained the first day of lab.

University policy concerning minors - *According to APSU policy #3:032, minors (defined as those under the age of 18) are not allowed in classrooms. While I recognize that extenuating circumstances occur and make it difficult for some students to attend without bringing children with them on occasion, I must enforce University policy and thus will deny any request for a child in my classroom. You should also be aware that minors are not allowed in academic labs, computer labs, science labs, or the library. Further, children cannot be left in halls outside classrooms. Please be aware that the policy on unattended minors is for the purpose of ensuring that our classrooms are conducive to learning and for the safety and protection of minors. For additional information on minors on campus, contact the Office of Student Affairs in the Morgan University Center.*

OTHER COMMENTS

I truly enjoy teaching chemistry and hope that we will have a profitable term. Please feel free to come by or call my office or to call me at home. Help with course material, discussion of career opportunities in chemistry, exploration of possible student research projects with me, or "shooting the breeze" are all possible topics for discussion. Good luck!

Chem 1121 Lab
Spring 2008

TENTATIVE SCHEDULE OF EVENTS

The following is a tentative schedule for lab. The experiments can be found at a link from www.apsu.edu/chem_page. Look at the navigation bar on the left side of the page and click on "General Chemistry Labs". It is your responsibility to print each experiment.

LAB DATE THURSDAY	ACTIVITY
Jan 17	CHECK-IN & Safety Orientation
Jan 24	Paper Chromatography of Food dyes and Colors
Jan 31	Colorimetric Determination of Iron in Vitamin Tablets
Feb 7	Colligative Properties – Freezing Point Depression
Feb 14	Synthesis of Aspirin and wintergreen
Feb 21	The Iodine Clock: A Study in Kinetics
Feb 28	Determining an Equilibrium Constant for a Chemical Reaction
Mar 6	<i>No Lab – Spring Break</i>
Mar 13	Determining the Identity of an Unknown Weak Acid
Mar 20	A pH Study of Acids, Salt Solutions, and Buffers
Mar 27	Solubility and Thermodynamics of Potassium Nitrate
April 3	Chemical Properties of the Alkaline Earths and Halogens
Apr 10	Electrochemical Half Cells and Reactions
Apr 17	Determining Equivalent Weight by Copper Electrolysis

A quiz will be given at the start of each lab except the week of Jan. 17 and 24.

The above schedule and procedures are subject to change in the event of extenuating circumstances.