COURSE: General Chemistry Lab I, 1110 Lab Fall 2002

SECTION: Chem 1111-10
CREDIT: 1 hour
LOCATION: prelab E305 Sundquist, laboratory A311
TIMES: 2:00 – 4:30 Thursday
COREQUISITE: Chem 1110 lecture

INSTRUCTOR

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

Class packet for Chem 1110 lab, published by Chemical Education Resources. (available in APSU bookstore)

SUPPLEMENTARY MATERIALS

Safety goggles are required in the laboratory at all times. It is your responsibility to purchase these goggles. They are available in the APSU bookstore. Rental goggles are available for $1 per class session.

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 number and statistics; and an understanding of the scientific method.

This course presents laboratory activities designed to facilitate the understanding of material covered in Chem 1110. Our lab experiments cover topics such as measurement, states of matter, stoichiometry and chemical changes, acid/base behavior, properties of gases, and oxidation/reduction 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 you will be allowed to take the quiz for the previous lab provided it is taken before the next lab period.** Makeup labs will not be given unless extraordinary circumstances warrant. This will be decided at the discretion of the instructor. 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) Most experiments will be worth a total of 20 points. (The Molar Mass of Butane experiment will be worth 30 pts.) **Ten points will be awarded based on your participation in the lab and the completion of the data sheets (including selected pre and post lab questions) for the experiment.** You will usually be allowed to take these home, complete them, and turn them in the next day. (If the lab includes an unknown, however, the unknown information must be given before you leave the lab.) The report will be graded and will be available to you before the lab quiz. *Please note that this policy may be different than the policy of other instructors.* **Ten additional points will also be awarded on the basis of a quiz which will be given <u>following</u> the completion of the experiment.** This will usually be at the beginning of the next lab experiment. Your lowest 10 pt grade will be dropped.

The Molar Mass of Butane lab will require a detailed written lab report instead of a simple lab sheet and questions. This report will be worth 20 pts instead of the usual 10.

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. <u>It is acceptable to take the quiz without attending the preceding laboratory on which it is based.</u>

d) No makeup labs will be given except in extraordinary circumstances. Students must attend the section of Chemistry 111L in which they are enrolled unless specific arrangements have been agreed between the student and another instructor. (If an emergency occurs check with me for a possible reschedule during that week. This is subject to space availability and approval of the other instructor)

e) The lab practical is worth 20 pts and the lab final is worth 20 pts.

f) You are guaranteed the following marks: A 90%, B 80%, C 70%, D 60.

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. 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) 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	August 31
Last day to drop with an automatic "W"	September 30
Last day to drop with a "W, F, FA, FN"	November 8

SAFETY

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 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.

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 1110 Lab
Fall 2002 **TENTATIVE SCHEDULE OF EVENTS**

The following is a tentative schedule for lab.

Laboratory Manual: Selected Experiments from Chemical Education Resources Modular Laboratory Program Chemistry

	Week of (Thursday)	Exp. #	Activity
1	Aug 22		Course Introduction, Toledo Exam, Safety Video
2	Aug 29	383 Handout	Density of Liquids & Solids Units of Measure and Using a Bunsen Burner
3	Sept. 5	495	Classification & Properties of Matter
4	Sept. 12	492	Separating and Identifying Food Dyes by Paper Chromatography
5	Sept. 19	398	Determining the Empirical Formula of a Compound Containing Mg and Oxygen
6	Sept. 26	395	Titrating Vinegar
7	Oct. 3	406	Writing Chemical Equations and Identifying Unknown Solutions Using Microscale Techniques
8	Oct. 10	480	A Sequence of Chemical Changes
9	Oct. 17		*Fall Break – No Class*
10	Oct. 24	Handout	Molar Mass of Butane Gas (written lab report for turn-in)
11	Oct. 31	368	Heat of Neutralization
12	Nov. 7	345	The Visible Atomic Spectrum of Hydrogen
13	Nov. 14	360	A Colorimetric Determination of Aspirin in Commercial Preparations
14	Nov. 21	409	Molecular Geometry and Bonding
15	Nov. 28		*Thanksgiving Holiday – No Class*
16	Dec. 5		Lab practical and Clean-up
17	Wed. Dec. 11 1:30 – 3:30		Lab written Final

A quiz will be given at the start of each lab except the week of August 22, 29 and Dec. 5.