

CHE 120L-015
Course Syllabus

General Chemistry Lab I

R 1:40 – 4:40

Spring 2009

Instructor Information

Vinay Kumar SC 446; telephone 572-5408; email: kumar@nku.edu

Office Hours: W 9:30 - 11:30, TR 10:50 – 11:50
Other hours by appointment

Corequisite

General Chemistry I Lecture, CHE 120 (any section)

Required Lab Manual

Laboratory Manual for General Chemistry I (CHE 120L), Sixth Edition; Department of Chemistry, Northern Kentucky University.

Other Required Materials (to be brought to the lab for each experiment)

1) Lab Record Book, Hayden McNeil Publishing; 2) Safety Goggles; and 3) Sponge Towel

Preparation

Students are expected to come to lab with a thorough understanding of the principles involved in the experiment, the goals of the experiment, the safety precautions, and the procedures to be followed. Whenever appropriate, the student should also know what data and observations are anticipated. This requires the student to read the entire experiment ahead of time and read all recommended reading materials.

Record Keeping

For instructions on keeping record of the lab work and how to maintain your note book, see page iv of the lab manual.

Pre-Lab Report:

Before coming to the lab the student should write the following information in the Lab Record Book: The Title of the experiment to be done that day, Objective/s, Safety Precautions and a Protocol. A sample protocol is shown on page 1 of the lab. Manual. Make sure the steps of the protocol are numbered.

Note: As you carry out the experiment, record the data and observations next to the protocol (see sample format on page vi of the lab manual). At the end of the experiment, before leaving the lab. turn in the carbon copy the Pre- Lab Report including the data and observations to the instructor.

Lab Report

Except for the two experiments mentioned under the Introductions and Discussions section below, the Lab Report will consist of completing the Data Sheets (see pages 5-6 for example) with a pen in a neat and orderly fashion and also answering the Post-lab questions (see page 7 for example). Data must be recorded to the proper number of significant figures, have the correct units, and be clearly identified. All pages must be stapled together in order.

Note: Lab report pages may also be found on the General Chemistry Website: http://www.nku.edu/~chemistry/general_chem/. These pages may be filled in using the keyboard and/or printed out and filled in by hand.

Introductions and Discussions

For the experiments entitled, “The Empirical Formula of Zinc Iodide” and “A Cycle of Copper Reactions”, a written Introduction and Discussion will also be required in addition to the usual report. On pages xix and xx of the lab manual you can find information on how the Introduction and Discussion are to be written.

Pre-laboratory Questions

Some experiments have a Pre-laboratory Questions sheet. Students are encouraged to answer these questions. However, these questions will not be graded. Correct answers to all the Pre-lab Questions will be posted in the lab.

Note: Questions similar to the Pre-lab Questions may be included on the two lab tests.

Due Dates and Late Penalty

Reports are due at the beginning of the next lab period. Reports that are handed in after the next lab period will be considered late and will be assessed a 10% late penalty per day. If a report is more than one week late, a grade of 40 will be assigned for that experiment. If an experiment is completed, and no report is ever turned in, a grade of 30 will be assigned for that experiment.

Course Objectives for General Chemistry I Lab

1. Use laboratory equipment, how to make measurements using appropriate precision and make observations to identify chemical and physical changes.
2. Use a laboratory record book, record data, analyze data and write lab reports including introductions and discussions.
3. Carry out syntheses; calculate theoretical yield, percent yield and percent errors.
4. Carry out qualitative and quantitative analyses using techniques such as precipitation, titration, calorimetry and spectroscopy.
5. Determine and evaluate experimental errors and their impact on results.
6. Use computer programs to analyze data.

Department of Chemistry

Student Learning Outcomes for General Chemistry I Laboratory

1. Explain the major concepts and experimental findings in the chemical sciences.
2. Demonstrate the ability to carry out experimental protocols using modern instrumentation and methods.
3. Compile, critically evaluate, and interpret scientific information and data.
4. Effectively communicate scientific information through written and oral means.
5. Apply effective group strategies to solve scientific problems.
6. Apply computer technology and other technologies in the comprehension, interpretation, and presentation of the chemical sciences.

Please note: Instructor reserves the right to modify the syllabus at any time during the semester. Students are required to read and understand the contents of this syllabus. Any questions must be brought to the instructor's attention within one week of the distribution of this syllabus. If you withdraw from the lecture class you will be withdrawn from the lab.

The instructor reserves the right to dismiss or to have removed a disruptive student from the classroom.

Safety

All safety rules must be obeyed. Repeated violation of these rules will result in dismissal from the lab and a grade of zero for that experiment. Habitual violation of Safety Rules during the semester will result in dismissal from the course and a grade of F for the course.

Tests

There will be one test given on March 5 and another on April 30. These tests will consist of both a practical portion and a written portion. The practical portion will be worth between 20 and 25% of the overall test score. The format for the practical portion will be distributed before the test.

Honor Code

As in all other chemistry courses the NKU Honor Code will be enforced in this section of CHE 120 lab. For more information on the Honor Code, please visit the Dean of Students website <http://www.nku.edu/~deanstudents/HonorCode.htm>

Grading

Most experiments will be graded on a 100-point basis except the experiments *Measurements* and *Lewis Formulas, Formal Charge, and VSEPR* will be assigned 50 points each.

Lab reports	=	60% of overall score
Tests	=	30% of overall score
Pre-lab reports	=	10% of overall score

<u>Overall Score</u>	<u>Letter Grade</u>
90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

Attendance Policy:

If a student misses a laboratory experiment with an emergency excuse, a makeup lab may be scheduled by contacting the instructor within 2 weekdays of the missed lab. The lab must be made up within one week of the missed lab. The student must obtain permission from the makeup lab instructor. A maximum of two makeup labs will be permitted. Failure to follow this policy will generally result in a grade of zero for a missed lab.

TENTATIVE Schedule (Thursday section)

Dates	Experiments			
Jan. 15	Safety , Check-In, & Measurements			
Jan. 22	An Introduction to Chromatography (p 59)			
Jan. 29	Lab Measurements (p 67)			
Feb. 5	Physical and Chemical and Properties (p 93)			
Feb. 12	The Empirical Formula of Zinc Iodide** (p 53)			
Feb. 19	Synthesis of Alum (p 99)			
Feb. 26	Chemical Reactions (p 33)			
Mar. 5	Lab Test 1 + Lab practical 1			
Mar. 12	Spring Break ---No Class			
Mar. 19	Acid Base Titration (p 9)			
Mar. 26	Calorimetry (p 19)			
April 2	Cycle of Copper Reactions** (p 45)			
April 9	Titration of Bleach (p 105)			
April 16	Absorption Spectroscopy (p 1)			
April 23	Lewis Formulas, Formal Charge and VSEPR (p 77)			
April 30	Lab Test 2 +Lab practical 2			

****For these two experiments introductions and discussions will be written.**

