

## GENERAL CHEMISTRY LAB I

CHE 120L-013

Fall, 2004

All items on this syllabus are subject to change by the instructor.

INSTRUCTOR: W. Vernon Hicks, Jr.  
OFFICE: SC 447  
TELEPHONE: 572-5406  
E-Mail: hicks@nku.edu

OFFICE HOURS: 7:30 - 8:00 AM MWF (in SC 402)  
9:05 - 11:30 AM MF  
10:05 - 11:30 AM W  
other times by appointment

COREQUISITE: CHE 120

CLASS MEETING: 9:25 AM - 12:25 PM, SC 422

REQUIRED MATERIALS: Laboratory Manual: General Chemistry I (CHE 120L), Northern Kentucky University Department of Chemistry  
Lab Record Book, Hayden McNeil Publishing, Plymouth, MT;  
Safety Goggles  
Blank 3.5-inch computer diskette  
Some experiments will require the use of Vernier Graphical Analysis™ software; this can be downloaded from the General Chemistry website under GA software.

CREDIT: 1 Semester hour

GRADE SCALE:	<u>Letter</u>	<u>Grade Average</u>
	A	90 - 100
	B	80 - 90
	C	70 - 80
	D	60 - 70
	F	Below 60

SAFETY QUIZ:	100 points	(Sept. 14)
REGULAR TESTS:	100 points	(Oct. 12)
FINAL EXAM:	200 points	(Dec. 7)

EXPERIMENTS: 100 points per lab  
25 points each of four formal lab exercises (100 points total)

Last day to drop with a "W": October 30.

General Chemistry Website: [http://www.nku.edu/~chemistry/general\\_chem/](http://www.nku.edu/~chemistry/general_chem/)  
Faculty Website: <http://www.nku.edu/~hicks>

### SCHEDULE:

Aug.	24	Check-in. Safety Program. Diagnostic Test.
	31	Laboratory Measurements.
Sept.	7	Nomenclature; <b>no protocol required.</b>
	14	An introduction to Chromatography. <b>Formal lab introduction required as part of lab report. Safety Quiz.</b>
	21	Empirical Formula of Zinc Iodide.
	28	Chemical Reactions.
Oct.	5	A Cycle of Copper Reactions. <b>Formal lab discussion of results required as part of lab report.</b>
	12	Test 1: Covers experiments through Chemical reactions.
	19	Fall Break: No Class.
	26	Titration. <b>Formal lab introduction required as part of lab report.</b>
Nov.	2	No Class. Election Day.
	9	Absorption Spectroscopy (MeasureNet).
	16	Lewis Formulas, Formal Charge, & VSEPR. <b>No protocol required.</b>
	23	Calorimetry and Hess's Law (MeasureNet). <b>Formal lab discussion of results required as part of lab report.</b>
	30	Ideality of Hydrogen.
Dec.	7	Check Out. Final Exam (Comprehensive; covers all experiments).

### Calculators

Programmable and graphing calculators are not permitted during tests or quizzes. The following calculators are recommended: Casio fx-300SA-w, Casio fx-115S-w, Casio fx-250HC-S, Sharp EL-506L, Sharp EL-509LH, Texas Instrument TI-30Xa, Texas Instrument TI-36X, and Texas Instrument TI-34. Calculators will be necessary for taking tests and quizzes. In no case may calculators be passed from one student to another during a quiz or a test. The lack of an operable calculator will not excuse a student from having to solve a problem

### Preparation

Students are expected to come to lab with a thorough understanding of the principles involved in the experiment, the goals of the experiment, 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 experiment ahead of time and read all recommended reading materials. *A short quiz covering the experiment for the day and possibly some review questions from the previous lab will be given at the start of each lab period except for the labs on Sept. 7 and Nov. 16; for these labs the quiz will be given at the end of the period.*

### Lab Record Book

The Lab Record Book is required for all experiments, unless the student is informed otherwise. The first page in the book will be used as the Table of Contents. Each experiment is to start on a new page and begin with the title of the experiment, then objectives or purposes, protocol, procedures, and data and observations. Protocol is the set of experimental steps one expects to follow. Procedure is the set of steps one has actually carried out. Usually there are some differences between protocol and procedure due to changes that have been made just prior to carrying out an experiment. *The title, objectives, and protocol must be written in the Lab Record Book before coming to the lab.* The protocol should be in the student's words and should include any comments the student wants to make as a reminder based on techniques and experiences acquired previously. The basic steps in the protocol should not vary greatly from the instructions given in the NKU laboratory manual. The protocol should be written on the left-hand side of the page, and both procedure changes and the data/observations should be written on the right-hand side. Students who do not have the title, objectives, and protocol written in the Lab Record Book ahead of time will be penalized for the experiment. Data must be recorded to the proper number of significant figures, have the correct units, and be clearly identified. *Copies of the procedures, data and observations are to be handed in at the end of the laboratory period.*

### Lab Report

For most experiments the Lab Report consists of completing the "Report" section in the lab manual in a neat and orderly fashion. Pages must be stapled together in order. Sloppy reports will be penalized.

The grade for the experiment will be recorded on the laboratory report. It will be based on the experimental results, the lab report, the pre-lab quiz, assigned questions, laboratory technique, and adherence to instructions and laboratory regulations. The quiz is generally worth 10 points, the protocol is worth 10 points, the recording of data and procedure is worth 10 points, and carrying out the experiment is worth 10 points. Thus, if a student scores 10 on the quiz, does the experiment and writes the protocol, procedure, and data and observations but does not write a report, he or she would receive 40 points. The experimental results are generally assigned between 10 and 25 points. The remaining points are allocated to calculations, questions, assignments, neatness, etc. The quizzes for the labs on Sept. 7 and Nov. 16 will be worth 25 points, and the corresponding worksheets will be worth 75 points.

For four experiments (Sept. 14, Oct. 5, Oct. 26, and Nov. 23), a specific part of a formal lab report (worth 25 points) must be handed in separately in addition to the regular lab report. A description of a formal lab report is given in the Lab Record Book. Failure to follow the required format will result in a penalty.

Failure to follow laboratory safety rules and regulations will result in the deduction of points and/or expulsion from the laboratory.

### Laboratory Makeup Policy

The Chemistry Department policy with regard to makeup labs is as follows:

Each student in a General Chemistry Lab will be allowed to make up the experiment for two excused absences during the semester. An excused absence is one for which the student has a good reason (something beyond the student's control) for not being able to attend the regularly scheduled lab period. The student must contact their laboratory instructor either in person, by phone, e-mail or letter within 2 weekdays (M,T,W,R,F) of the missed lab. A student who waits longer than 2 weekdays after a missed lab to request a make up will normally not be allowed to make up the lab experiment and will be assigned a grade of zero for that experiment. The student will be expected to verify their reason for requesting an excused absence. The lab must be made up no later than the last lab period of the week following the scheduled experiment. The student must also obtain permission from the makeup lab instructor. Absences beyond two will each be assigned a grade of zero.

### Due Dates

Unless otherwise informed, reports are due at the **beginning** of the lab period following the completion of the experiment. Reports that are handed in after this time will be considered late and will be penalized 5 points per day. Reports will not be accepted if they are submitted after the instructor has returned the reports received on time. *A student who misses a lab must arrange to have the lab report for the previous week turned in before the next lab period.* The work sheets for the experiments on Sept. 7 and Nov. 16 must be turned in at the end of the period.

### 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 course grade of F.**

A list of safety rules will be provided with the check-in materials.

Each lab will have specific containers and directions for waste disposal. Ask if you are not sure about the safe disposal of wastes from your reactions.

**Students are responsible for reading and understanding all items in this syllabus. Any items not understood must be brought to the attention of the instructor within the first two week of class.**

The work you will do in any course is subject to the Student Honor Code. The Honor Code is a commitment to the highest degree of ethical integrity in academic conduct, a commitment that, individually and collectively, the students of Northern Kentucky University will not lie, cheat, or plagiarize to gain an academic advantage over fellow students or avoid academic requirements. The Honor Code can be accessed at:

**[http://www.nku.edu/~deanstudents/student\\_rights/honor\\_code.htm](http://www.nku.edu/~deanstudents/student_rights/honor_code.htm).**

Cheating will not be tolerated. In accordance with the Code of Student Rights and Responsibilities, which can be found at [http://www.nku.edu/~deanstudents/student\\_rights/](http://www.nku.edu/~deanstudents/student_rights/), faculty members have the right to determine actions to be taken when a student is caught cheating.

Faculty members reserve the right to dismiss or to have removed a disruptive student from their classrooms.