

General Chemistry I Lab, CHE 120L-012
Spring 2009, T 1:40 – 4:40 PM, SC 422
Northern Kentucky University

Instructor Information

J.H.Niewahner SC-448, X6363
Telephone: 572-6363
E-mail: niewahnerj@nku.edu
Office Hours: MTR 11:00 – 11:50 AM; W 10:00 – 10:50. Others by appointment
General Website: http://www.nku.edu/~chemistry/general_chem/
Faculty Website: <http://www.nku.edu/~niewahnerj/>

Course Information

Prerequisite: High School Chemistry and either a minimum score of 20 on ACT math section or equivalent; or a C or better in CHE 102; or placement
Co requisite: General Chemistry I Lecture
If for any reason you need to withdraw from the laboratory, CHE 120L, you must also withdraw from the lecture, CHE 120 and vice versa.
Required Text: *General Chemistry I Laboratory Manual*, Fifth Edition, Padolik, L; and Hicks, Jr., W.V
Other Required Material:
1) Lab Record Book, Hayden McNeil Publishing 2) Safety Goggles
3) Paper Towels or Sponge or Towel

Web Access

This is a web-enhanced course which requires students to access and use various internet resources such as email, Blackboard, and other on-line resources.

Calculators

Programmable and graphics calculators are not permitted during tests. In no case may calculators be passed from one student to another during a test. The lack of an operable calculator will not excuse a student from having to solve a problem

Blackboard

Students will be expected to use Blackboard to keep track of their grades and receive information from their instructor. To access Blackboard go to <http://learnonline.nku.edu> and then to Student Support Site and How to Log In.

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. If you do not understand the experiment ahead of time, discuss the experiment with your instructor.

Lab Record Book

The Lab Record Book (Hayden McNeil Publishing) is required for all experiments. The record for each experiment will be divided into the following six sections: 1) **Title**, 2) **Objectives**, 3) **Protocol**, 4) **Chemicals**, 5) **Procedure, Data and Observations**, and 6) **Equipment**. These headings are to be used in separating the sections in the lab record book. Each experiment is to start on a new page and begin with the **Title** of the experiment, then **Objectives** or purposes, followed by the **Protocol**, and then a **Materials** section. The statement of **Objectives** is to be in full sentence format. *The Title, Objectives, Protocol, and Materials must be written in the Lab Record Book before coming to the lab.* Protocol is the set of experimental steps one expects to follow. Steps in the Protocol should be numbered and should be written across both columns of the record book.

At the Beginning of the Lab Period

a) Lab Reports from the previous week's experiment are due at the beginning of the lab period.
b) The copy pages of the Title, Objectives, Protocol, and Chemicals are to be handed in to your instructor at the beginning of the lab period, namely, 1:40 P.M. Students who either do not have the Title, Objectives, Protocol, and Materials written ahead of time or who submit them after the class has begun will be penalized up to 10% for the experiment. The **Procedure, Data and Observations** section is started on the next new page. Procedure is the set of steps one has actually carried out. Procedural steps are to be numbered sequentially. Usually there are some differences between Protocol and Procedure due to changes that are made just prior to carrying out an experiment or changes required during the course of the experiment. Sometimes a step in the Procedure will include data such as the mass of some material. In such cases it is convenient to write the procedure in the left column of the record book and the data in the right column. (Note: this is different from writing the Protocol). One must be careful when writing the Procedure not to simply copy the Protocol, as there is the risk of not writing what you actually did. The key to writing a proper and complete record is to make sure that someone else could carry out the experiment based on what you have written in your Procedure, Data, and Observations section. Data must be recorded to the proper number of significant figures, have the correct labels, and be clearly identified. Include information that would help you repeat the experiment and let you know if you are getting similar or different results. The last section is the **Equipment** section which includes the make and model of major pieces of equipment that were used. This would include equipment such as IR, UV-VIS, NMR, MeasureNet[®] etc. but not small pieces of equipment, such as hot plate -stirrers, melting point apparatus, balances, etc.

At the End of the Lab Period

Copy pages of Procedures, Data and Observations, and Equipment are to be handed in at the end of the period.

The personal pronoun "I" is not to be used anywhere in the record book or report.

Samples

All samples that are prepared are to be placed in a vial, labeled with your name and the name of the compound and handed in to the instructor at the end of the lab period

Lab Report

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

For the experiments titled *The Empirical Formula of Zinc Iodide* and *Chemical Reactions*, formal "Introductions" are to be written in addition to the standard Lab Report. For experiments titled *Acid-Base Titration* and *A Cycle of Copper Reactions* formal "Discussions" are to be written in addition to the usual report. The formal "Introductions" and "Discussions" are to be written in your own words. See

pages xviii and xix of the lab manual for descriptions of what is to be included in an Introduction and a Discussion.

Due Dates

Unless otherwise informed, reports are due at the **beginning** (1:40 P.M.) 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 up to 10 points per day. Reports will not be accepted if they are submitted more than 1 week after the scheduled completion of the experiment and students will receive a maximum of 30 points for those experiments.

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 3 and another on April 28. These tests will consist of both a practical portion and a written portion. The practical portion will be worth between 15 and 25% of the overall test score.

Grading

Most experiments will be graded on a 100 point basis except the experiments *Introduction to Measurements* and *Lewis Formulas, Formal Charge, and VSEPR* will be assigned 50 points each. Your overall score for the semester is a weighted average of your Experiment average and your Test average as shown below:

Experiments	70% of overall score
Tests	30% 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

The 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. Registering late for class is normally not an excused absence. 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 make up lab instructor. Absences beyond two will each be assigned a grade of zero.

Tentative Schedule, Tuesday, Section 012, Spring 2009

Jan.	13	Introduction, Check-in, Safety Program, OWL, Introduction to Measurements
Jan.	20	Chromatography
Jan.	27	Laboratory Measurements
Feb.	3	Chemical and Physical Properties
Feb.	10	The Empirical Formula of Zinc Iodide*
Feb.	17	Synthesis of Alum
Feb.	24	Chemical Reactions*
Mar.	3	Test 1: Experiments through "Chemical Reactions"
Mar.	10	No Class. Spring Break
Mar.	17	Acid-Base Titration#
Mar.	24	Calorimetry and Hess's Law
Mar.	31	A Cycle of Copper Reactions#
Apr.	7	Titration of Bleach
Apr.	14	Absorption Spectroscopy
Apr.	21	Lewis Formulas, Formal Charge, and VSEPR
Apr.	28	Test 2: Titration through Lewis Formulas

* These experiments require a formal Introduction to be written in addition to the usual report.

These experiments require a formal Discussion of Results to be written in addition to the usual report.

Chemistry Course Policies

Policies of the Department of Chemistry at Northern Kentucky University

- All items on syllabi are subject to change by the instructor.
- Students are responsible for reading and understanding all items on the syllabi. Any items not understood must be brought to the attention of the instructor within the first two weeks 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.
- Cheating will not be tolerated. In accordance with the Code of Student Rights and Responsibilities, 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.
- A grade of C or better is required in CHE 120 and CHE 120L to enter CHE 121 and CHE 121L.
- This is a web enhanced course. Students meet at regularly scheduled class time and will need access to the internet to fulfill course requirements.

General Chemistry Withdrawal Policy

Any student withdrawing from either General Chemistry I (lecture) or General Chemistry Lab I must also withdraw from the other. Failure to do so will result in the department withdrawing the student from both lecture and lab.

Cheating

Students caught cheating or plagiarizing for the first time will receive a grade of zero for that test or assignment. Students caught cheating or plagiarizing a second time will receive an F for the course and will be reported to the Dean of Students.

Cell Phones

Students are asked to turn off their cell phones during class. If you expect an emergency call please notify your instructor. Under no circumstance will students be allowed to use their cell phones during a test. Using a cell phone during a test will be considered cheating.

Students with Disabilities

Students with disabilities who require accommodations (academic adjustments, auxiliary aids or services) for this course must register with the Office of Disability Services. Please contact the Disability Service Office immediately in the University Center, Suite 320, or call (859) 572-6373 for more information. Verification of your disability is required in the Office of Disability Services for you to receive reasonable academic accommodations. Visit the Disability Services website at www.nku.edu/~disability/.