

Instructor: Dr. K. Walters
SC 348
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<http://www.nku.edu/~walterske>

Office Hours: I have an open office policy, so stop by whenever you have a question (I will not always be in my office but will always indicate where I can be found or when I will return). My formal office hours are as follows: M 1:00 – 2:00, TR 9:30 – 10:30, W 1:00 – 1:30, F 9:00 – 10:00. Feel free to make an appointment for any other time. I will also schedule “online” office hours on Blackboard from time to time.

Prerequisite: High school chemistry and an ACT math score of 20 or greater, C or better in CHE 102(formerly 110), or placement

Corequisite: CHE 120 (any section) – **Should you drop CHE 120 you will be also dropped from CHE 120L**

Student Learning Outcomes: CHE 120L fulfills the following NKU chemistry department student learning outcomes:

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. Utilize critical thinking skills to apply concept knowledge and adapt experimental techniques to: a) form and test hypotheses and b) solve scientific problems.
4. Compile, critically evaluate, and interpret scientific information and data.
5. Effectively communicate scientific information through written and oral means.
6. Apply computer technology and other technologies in the comprehension, interpretation, and presentation of the chemical sciences.

Objectives: The NKU General Chemistry faculty have agreed on the following common learning objectives for CHE 120. A more comprehensive list of learning objectives is available on the course blackboard site.

1. Perform calculations involving chemical and physical processes, use the factor label method, record numerical answers with proper units, and attain proficiency in the proper use of scientific notation and significant figures, including the concept of uncertainty in scientific measurements.
2. Name compounds and ions, write their chemical formulas, calculate their molar masses and percent composition, and determine the empirical and molecular formulas of compounds.
3. Classify substances, reactions, and processes according to various classification schemes.
4. Complete and balance chemical equations, determine whether or not a reaction actually occurs based on chemical and physical properties of the reactants and products, and solve stoichiometry problems.
5. Describe and calculate the energy changes involved in chemical reactions and physical processes.
6. Describe the atomic and electronic structure of the elements.
7. Predict the relative magnitudes of physical properties of elements on their electronic structures.
8. Describe the intramolecular bonding of substances and determine the structures of compounds.
9. Describe properties of real and ideal gases using the Kinetic Molecular Theory and perform calculations based on ideal gas laws.

The Student:

1. ...should always come to lab on time.
2. ...should come to lab already having read the anticipated material to be covered.
3. ...should participate in lab at every opportunity to demonstrate comprehension.
4. ...should complete all assignments on time.
5. ...should try to have at least a little fun learning chemistry.

The Instructor:

1. ...should always be on time for lab and be prepared to teach.
2. ...should present material in a clear, organized manner at a speed necessary to cover all topics.
3. ...should encourage the student to think about the presented material creatively.
4. ...should prepare fair, thorough exams that cover the presented material.
5. ...should be absolutely impartial in all matters grading.
6. ...should have lots of fun teaching chemistry.

Required Items: *Laboratory Manual for General Chemistry I 120L (5th Edition)*, by Hicks, Niewahner, Padolik, and Walters, 2007.

1. Lab Notebook, Hayden McNeil Publishing
2. Safety Goggles (available through SAACS)
3. Paper Towels and/or Sponge and/or Towel

Internet: The NKU Blackboard website is used in this course (<http://learnonline.nku.edu>) for course announcements, grades, online supplementary materials, and discussion boards. You are responsible for all posted information. Take advantage of all the presented material (especially the discussion board), and please post questions to me on the discussion board if possible

rather than sending me email. You should also utilize the NKU General Chemistry website (http://www.nku.edu/~chemistry/general_chem/), where you will find comprehensive schedules, handouts, old exams, and electronic pre-lab and post-lab pages.

- Before Lab:** You are expected to come to lab with an understanding of the principles involved in the experiment and the procedures to be followed. This level of preparation requires you to read the experiment and all recommended reading materials assigned by me or specified in the lab manual **before coming to lab** and completing any pre-lab questions found in the lab manual (they will be collected!). **Please note that if pre-lab questions are not turned in at the start of the lab period (1:40), you will receive a zero grade for that portion of the lab. Furthermore, the title, safety precautions, objectives, and protocol must be written in your lab notebook before you come to lab!** Students who have not prepared their lab notebook before the start of the lab period will be penalized 15% off that portion of the lab grade. The protocol should consist of individually numbered steps and **use complete sentences**. More information, including an example, is in your lab manual on page v. You must have enough information present in your lab notebook so that you could perform the experiment without using the lab manual, because **you will only be allowed to use your lab notebook and a calculator during the lab period!**
- Lab Notebook:** The lab notebook is required for all experiments. Each experiment is to start on a new page and follow the specifications described in the "Record Keeping" section of your lab manual. **All entries should be made in pen** (you will be penalized 15% off that portion of the lab grade if pencil is used in your book for any part of the experiment). Please **use complete sentences** throughout, especially in the objective, protocol, and observation sections. Always clearly record experiment data to the correct number of significant figures and use appropriate labels. **Please hand in the yellow "copy pages" before you leave the lab upon completion of an experiment.** Failure to turn in these pages at that time will incur a 15% penalty off that portion of your lab grade.
- Lab Reports:** Lab reports for this course will vary in content from week to week. In most cases, the data/observations/results/calculations and post-lab question sections from your lab manual will be required. These pages should be **NEAT (completed in pen or typed)**, as if they were a formal lab report. Therefore, **I STRONGLY ENCOURAGE YOU** to utilize the "electronic" versions of these documents available online. **I will not grade messy lab reports;** you will have to recopy the assignment and will be subject to any applicable late penalties! In addition, most labs will have a different portion of a formal written lab report assigned. These sections are described in your lab manual (page xviii), and I will provide more information as we encounter new sections during the term. These assignments give you the opportunity to refine your report-writing skills and prepare you for other advanced science courses. Unless otherwise indicated, all portions of a lab report are due **at the beginning of the lab period (1:40) following the completion of the experiment.** Reports that are handed in after this time will be considered late and will be **penalized 10 percent** of their value per day (including the day the lab was due). Reports will not be accepted if they are submitted more than one week late, and you will receive a maximum of 30 points for these experiments.
- Safety:** **All safety rules in the lab manual and discussed during the first lab period 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 the rules during the semester will result in dismissal from the course and a failing grade. Proper clothing (long pants and closed toe shoes) and safety goggles must be worn at all times, or you will not be allowed to enter the lab (and receive no makeup opportunity).**
- Exams:** There will be two exams given during the semester as indicated below. These exams will consist of both practical and written portions. The practical portion of the exam will be worth between 20 and 30% of the overall test score. The exams are not cumulative.
- Honor Code:** The work you will do in this 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 NKU will not lie, cheat, or plagiarize to gain an academic advantage over fellow students or avoid academic requirements. You should familiarize yourself with the Honor Code at the following website:
http://www.nku.edu/~deanstudents/student_rights/honor_code.htm
- Cheating:** Cheating will not be tolerated in this course. 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. In this course, students caught cheating and/or plagiarizing is grounds for immediate dismissal and an F course grade, along with a report filed with the Dean of Students.
- Calculators:** **Programmable and graphing calculators are not permitted during exams.** Calculators should be brought to lab **every week**, as they will be needed for calculations. Under no circumstances may calculators be shared during exams, and the lack of an operable calculator will not excuse you from completing the problems! You should also **practice** with this calculator before you use it in an exam!
- Cell Phones:** Cell phones, pagers, and all watch alarms should be turned off (or placed on silent) during lab. Furthermore, cell phones and pagers must be put away during lab. Should you receive a phone call that you must answer, please quietly leave the lab to do so (do not abuse this privilege or it will be taken away). Should your device audibly ring during lab, you will be asked to leave with no further discussion and not be eligible for a lab makeup. **Use of a cell phone or pager during an exam will be considered cheating,** and appropriate actions will be taken by the instructor.

Course Grade:

Each experiment has a different total value of points, depending on the assigned formal written lab report component. For each experiment, 30 points are assigned to pre-lab questions, your lab notebook, and participation in the experiment. An additional 70 points are assigned to your lab results, calculations, and post-lab questions, bringing the minimum total of each experiment to 100 points. Additional points for the formal written lab report portion are listed in the experiment schedule.

Experiments: 70% of grade
Exams: 30% of grade

<u>Score Total</u>	<u>Grade</u>
90% – 100%	A
80% – 89%	B
70% – 79%	C
60% – 69%	D
0% – 59%	F

A C or better is needed in this course to enroll in CHE 121L!

Attendance:

The **departmental 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 make up lab instructor. Absences beyond two will each be assigned a grade of zero.

Since this is a departmental policy, there can be no exceptions!

Other Items:

- All items on this syllabus are subject to change by the instructor. Check the NKU Blackboard website regularly for updates.
- Because there are usually more students seeking to enroll in laboratories than can be accommodated, students not present for the first meeting of a chemistry laboratory in which they have enrolled may be dropped from the class immediately, unless they have notified the instructor or the chemistry department at 859-572-5409 of their expected absence. If the lab from which they are withdrawn is a co-requisite for a lecture course (CHE 120L is a co-requisite for CHE 120), the student will be withdrawn from that lecture also.
- Students are responsible for reading and understanding all items on the syllabus, and recognize this obligation by signing and returning the attached form. Any items not understood must be brought to the attention of the instructor within the first two weeks of class.
- Faculty members reserve the right to dismiss or to have removed a disruptive student from their classrooms.
- Students with disabilities who require accommodations (academic adjustments, auxiliary aids or services) for this course must register with the Disability Services Office. 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 Disability Services Office for you to receive reasonable academic accommodations. Visit the Disability Services website at www.nku.edu/~disability/.
- No food or drink is allowed in lab, including open water bottles.

CHE 120L-014 Fall 2007 Schedule

Date	Manual Page #	Experiment Title	Required Report (Addtl. Points)
8/21	–	Lab Checkin and Safety Lecture Introduction to OWL Lab Measurement Primer	–
8/28	1	Introduction to Chromatography	Objective Introduction (25)
9/4	9	Laboratory Measurements	Discussion Conclusion (25)
9/11	19	Physical and Chemical Properties	Objective Introduction (25)
9/18	25	The Empirical Formula of Zinc Iodide	Full Report (100)
9/25	31	Chemical Reactions	Discussion Conclusion (25)
10/2	43	Titration	Objective Introduction (25)
10/9	–	Exam #1	–
10/16	–	Fall Break No Lab	–
10/23	59	Calorimetry and Hess's Law	Discussion (25)
10/30	73	A Cycle of Copper Reactions	Full Report (100)
11/6	81	Absorption Spectroscopy	Objective Introduction (25)
11/13	87	Titration of Bleach	Discussion Conclusion (25)
11/20	53	Synthesis of Alum	Full Report (100)
11/27	93	Lewis Formulas, Formal Charge, and VSEPR	–
12/4	–	Checkout Exam #2	–

CHE 120L-014: General Chemistry I Lab – Fall 2007

Student's Acceptance of Course Policies

Please fill out and sign the following form and **return it no later than September 4, 2007** to the instructor. Use a **blue or black pen (no pencil)**.

I, _____, have read the entire syllabus describing the course policies for CHE 120L-014, General Chemistry I Lab, taught by Professor Keith Walters. I fully understand these policies and I agree to comply with them during the whole fall 2007 semester.

Signature: _____ Date: _____

Blackboard Login Directions

PLEASE NOTE: EFFECTIVE 12/19/05, ALL BLACKBOARD PASSWORDS HAVE BEEN RESET TO MATCH THE USERS NKU NETWORK & EMAIL PASSWORD.

To access Blackboard, you will need the following products and competencies:

- A Web browser – Internet Explorer (4.0 or higher) or Netscape Navigator
- An email account and the knowledge of how to send and receive email
- The ability to navigate the Web (use a browser) and handle multiple open windows.
- The ability to open, close and save files and attachments.

Note: Pop-up Blockers need to be disabled for Blackboard to function properly.

ATTENTION AOL USERS: Connect to AOL as usual, minimize AOL, and open a new Web browser before logging in to Blackboard. (Internet Explorer 4.0 or higher is the recommended Web browser.)

How to access your course in Blackboard:

Step 1: Open your browser and go to the NKU Home Page at <http://www.nku.edu>. Click the Quick links drop-down list at the top of the NKU Home Page and select Blackboard from the list or you can go to <http://learnonline.nku.edu>.

Step 2: Click the Login Button. 

Step 3: Enter your NKU Username and NKU Password.

- ❖ **Username:** NKU email name (i.e. *mousem* – **DO NOT** include @nku.edu)
- ❖ **Password:** NKU password (same password that you use for the NKU network and email)
- ❖ To find your NKU email name or change your NKU password, go to <http://www.nku.edu/password>. Enter the last 8 digits of your ISO number along with the last 4 digits of your social security number. The results will include your username and email address.

***Note: Use lowercase letters when entering a Blackboard username and password.**

If you are unable to login to Blackboard call the IT Helpdesk at (859)572-6911.

Blackboard Welcome Page

After you have successfully logged in to Blackboard, you are on the Blackboard Welcome Page.

To view and/or modify your personal information in Blackboard, click on the Personal Information link in the Tools box located on the left side of the Welcome Page.

On the right side of the Welcome Page is an area entitled "My Course". All of your courses which are using Blackboard should be displayed here. Click the title of the course that you want to enter.

