

**Instructor:** Dr. Grant Edwards  
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<http://www.nku.edu/~edwardsg1>

Please contact me via email when possible.

**Office Hours:**

Monday:	By appointment
Tuesday:	9:30 AM – 10:30 AM
Wednesday:	1:00 PM – 2:00 PM
Thursday:	9:30 AM – 10:30 AM
Friday:	By appointment

I have an open door policy: feel free to stop by and ask questions if I am in my office. Otherwise feel free to schedule an outside appointment with me.

**Prerequisite:** A Math ACT score of 20 or above and high school chemistry or placement or grade of C or better in CHE 102 or the equivalent.

**Corequisite:** CHE 120 – **If you drop CHE 120, you will also be dropped from the lab.**

**Course Objectives:** The NKU General Chemistry faculty has agreed on the following common learning objectives for CHE 120. The full list is also available on the General Chemistry webpage at [http://www.nku.edu/~chemistry/general\\_chem/](http://www.nku.edu/~chemistry/general_chem/)

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 and intermolecular bonding of substances, determine the structures of compounds, and relate the bonding type and/or structures of substances to their chemical and physical properties.
9. Describe properties of real and ideal gases using the Kinetic Molecular Theory and perform calculations based on ideal gas laws.

**Required Items:**

1. *Laboratory Manual for General Chemistry I 120L (4<sup>th</sup> Edition)*, by Hicks, Niewahner, Padolik, and Walters, 2005.
2. Lab Notebook, Hayden McNeil Publishing
3. Safety Goggles (available through SAACS or bookstore)

**Internet Resources:**

1. This is a web enhances course. Students meet at regularly scheduled class time and will need access to the internet to fulfill course requirements.
2. The blackboard website for this course (<http://learnonline.nku.edu>) will be utilized for this course. You are responsible all materials posted to the site.
3. The NKU General Chemistry website ([http://www.nku.edu/~chemistry/general\\_chem/](http://www.nku.edu/~chemistry/general_chem/)) contains course objectives, comprehensive schedules, handouts and pre- or post-lab pages.

**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](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 or plagiarizing. In this course, students caught cheating or plagiarizing will receive an F for the course and will be reported to the Dean of Students.

- 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. I will check and initial your lab notebook at the beginning of each lab period. 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 will incur a **15% penalty** 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. 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%** 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. No food or drink is allowed in lab, including open water bottles. 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 35% of the overall test score. The exams are not cumulative.
- 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!
- Electronic Devices:** Cell phones, pagers, and all watch alarms should be turned off (or placed on silent) and put away during class. 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</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!**

**Student Responsibilities:**

- Be on time.
- Be prepared, including prelab readings and materials.
- Participate in the lab.
- Complete assignments on time.
- Attend every lab session as scheduled.

**Other Items:**

- All items on this syllabus are subject to change by the instructor. Check the NKU Blackboard website regularly for updates.
- Students are responsible for reading and understanding all items on the syllabus. 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 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.

## CHE 120L-015 Spring 2006 Schedule

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Date	Manual Page #	Experiment Title	Required Report	(Addtl. Points)
1/11	–	Lab Check-in and Safety Lecture Introduction to OWL Lab Measurement Primer	–	
1/18	1	Introduction to Chromatography	Objective Conclusion	(15)
1/25	9	Laboratory Measurements	Introduction Discussion	(35)
2/1	H.O.	Physical and Chemical Properties	Objective Introduction Discussion	(50)
2/8	27	The Empirical Formula of Zinc Iodide	<b>Full Report</b>	(100)
2/15	39	Chemical Reactions	Objective Introduction	(25)
2/22	51	A Cycle of Copper Reactions	Objective Introduction Discussion	(50)
3/1	–	<b>Exam #1</b>	–	
3/8	–	<b>Spring Break No Lab</b>	–	
3/15	59	Titration	Introduction Data and Observations Results Discussion	(75)
3/22	33	Synthesis of Alum	Discussion Conclusion	(25)
3/29	69	Calorimetry and Hess's Law	<b>Full Report</b>	(100)
4/5	83	Absorption Spectroscopy	Objective Introduction	(25)
4/12	89	Titration of Bleach	Discussion Conclusion	(25)
4/19	95	Lewis Formulas, Formal Charge, and VSEPR	–	
4/26	–	Checkout <b>Exam #2</b>	–	

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