

Instructor: Dr. K. Walters
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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: MWF 11:00-12:00, TR 1:00-2:00. Feel free to make an appointment for any other time. I will also schedule “online” office hours on Blackboard from time to time.

Prerequisite: C or better in CHE 120 or equivalent

Corequisite: CHE 121 (any section) – **Should you drop CHE 121 you will be also dropped from CHE 121L**

Student Learning Outcomes:

1. Explain the colligative properties of solutions and how they can affect chemical reactions.
2. Apply acid/base theory to interpret the chemical properties of various substances.
3. Determine rate laws of chemical reactions through interpretation of empirical data.
4. Explain observations on chemical reactions based on chemical equilibrium.
5. Calculate and measure cell potentials using electrochemistry standards.
6. Determine anions present in an unknown sample through qualitative experimentation.

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 121L (4th Edition)*, by Hicks, Niewahner, Padolik, and Walters, 2005.

1. Lab Notebook, Hayden McNeil Publishing (your 120L notebook will be OK)
2. Safety Goggles (available through SAACS or bookstore)
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 (2:00)**, you will receive a zero grade for the assignment. 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** will be penalized 15% off the experiment grade. The protocol should be in your own words, 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!**

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**, and you will be penalized 15% off the experiment 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 10% penalty per day that it is late.

Lab Reports: Lab reports for this course will vary 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 or pre-lab assignments;** 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, 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 (2:00) 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.**

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. 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 class. Furthermore, cell phones and pagers must be 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.

Assessment: Assessment of topics learned in this course will be achieved through the analysis and interpretation of data and observations obtained in lab experiments, communication of results in written lab reports, and completion of critical thinking problems on exams. 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

Score Total	Grade
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 310L!

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.
- 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.
- No food or drink is allowed in lab, including open water bottles.
- Proper clothing and safety goggles **must be worn at all times**, or you will not be allowed to enter the lab (and receive **no makeup opportunity**).

CHE 121L-014 Spring 2007 Schedule

Date	Manual Page #	Experiment Title	Required Report (Addtl. Points)
1/10	1	Lab Checkin Gravimetric Determination of Phosphorus in Fertilizer	Objective/Introduction (25)
1/17	7	Aspirin Synthesis, Purification, Identification (Week 1)	–
1/24	7	Aspirin Synthesis, Purification, Identification (Week 2)	Results/Calculations Discussion (50)
1/31	21	Kinetics	Objective/Introduction Discussion (50)
2/7	53	Distillation and Gas Chromatography	Full Report (100)
2/14	41	Chemical Equilibrium	Data/Observations Discussion (50)
2/21	33	Synthesis of SnI ₄	Objective/Introduction (25)
2/28	–	Exam #1	–
3/7	–	Spring Break No Lab	–
3/14	59	Freezing Point Depression: An Example of a Colligative Property	Objective/Introduction Discussion (50)
3/21	67	Acids, Bases, and Buffer Solutions	Full Report (100)
3/28	79	Titration Curve for a Polyprotic Acid	Objective/Introduction (25)
4/4	89	The Qualitative Analysis of Selected Anions	Full Report (100)
4/11	95	Electrochemistry	Objective/Introduction (25)
4/18	105	Nuclear Chemistry	–
4/25	–	Checkout Exam #2	–