

General Chemistry I Lab

Instructor: Dr. Tracy Terry Office A102a tjterry@unm.edu
Lab: Tue 10:30-1:15 in Academics 128
Tutoring Hours: M/Tu 2 pm – 4 pm (STEM Center) Wed 1pm – 4pm (Office A102a)

Required: Lab coat, safety goggles, lab notebook with duplicates, 3-ring binder

Course Description: Practice in laboratory measurements, in performing chemical reactions, and in chemical calculations.

Course Requirements

- Students are responsible for all assignments regardless of attendance. There are no make-ups for laboratory experiments or exams.
- Assignments may be turned into the Academic Affairs Office on the due date.
- The Blackboard Learn and the UNM email system will be used to distribute class announcements and lab handouts. Make sure your contact information is up to date and check your email often.
- Calculators will be used in most labs and need to have log, anti-log, and exponential functions.
- **LABORATORY SAFETY WILL BE CLOSELY MONITORED.** (*Safety Rules may be found in the first lab worksheet.*) Points will be deducted for safety violations (food in lab, not wearing goggles properly, etc.).
- Mandatory laboratory clothing: **GOGGLES**, closed toed flat **shoes** (no high heels, no exposed toes, no exposed heels), and **LAB COATS** are all **REQUIRED FOR MOST LABS**. **Students without proper personal protective equipment will not be allowed in lab.**

Grading

~340 pts	Experiments (30 pts each, ~5%) and Activities (pts vary) 10 pts - Pre-lab Questions and Procedures 20 pts - Data/Observations and Post-Lab Questions
30 pts	Mole Day 10 pts Procedure and Supply List (due Sept 29 th) 10 pts Oral/visual presentation during Mole Day (Oct 20 th) 10 pts Full procedure and description of chemistry (due Oct 20 th)
100 pts	Formal Poster Presentation (~15%) 45 pts First draft of poster (due Oct 27 th) 45 pts Final draft of poster for printing (due Nov 17 th) 10 pts Formal poster presentation (Dec 1 st)
100 pts	Final Exam The exam will consist of three components: a question/answer component, basic measurements, and developing a procedure based on previous labs. More information will be posted closer to exam time.

Grades: 98-100% A+, 92-97% A, 90-92% A-; 88-89% B+, 83-87% B, 80-82% B-; 78-79% C+, 73-78% C, 69-72% C-; 60-68%=D; <60%=F
The total number of points collected for experiments may change if a lab must be cancelled.

Student Learning Objectives

1. Conduct laboratory experiments safely by wearing appropriate protection and by handling and disposing of chemicals correctly.
2. Prepare scientific graphs to demonstrate quantitative relationships between variables.
3. Demonstrate mastery in experimental techniques and measurements including: volumetric measurements, isolation methods such as filtration, calorimetric measurements, and spectrophotometric measurements.
4. Write simple hypotheses based on selected chemical principles and or observations.
5. Design experimental procedures for simple lab questions.
6. Properly use a lab notebook to record experimental data and observations with correct significant figures and units.
7. Make meaningful analyses of experimental data and summarize results in a proper format.
8. Communicate scientific arguments effectively and logically in a written and an oral form.

General Campus Policies – Reminder

- Academic Honesty –

*Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, including dismissal, against any student who is found responsible for academic dishonesty. **Any student who has been judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.***

*Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests or assignments; **claiming credit for work not done or done by others**; hindering the academic work of other students; and misrepresenting academic or professional qualifications within or outside the University.*

Students caught cheating may receive a zero on the assignment, be dropped from the course, or receive a grade of 'F' for the course depending on the severity of the offense.

Equal Access

If you have a documented disability, please provide me with a copy of your letter from Equal Access Services as soon as possible to ensure that your accommodations are provided in a timely manner.

Important Dates

Last Day to Drop the Class (with a full refund and without a grade) – Friday, Sept 4th

Mole Day Demonstrations -

Sept 29th – Confirm demonstration for Mole Day – Submit list of equipment and chemicals

Oct 20th – Mole Day Demonstrations – Procedure and description due

Formal Poster Presentation -

Sept 29th – Discuss experiment, begin background research and develop a hypothesis

Oct 6th – Perform experiment

Oct 27th – First draft of formal poster presentation is due

Nov 17th – Final draft of formal poster presentation is due for printing.

Dec 1st – Formal poster presentation

Final Exam – Nov 24th – Bring lab notebook and 3-ring binder with graded labs for reference.

WEEK	CHEM 123L Schedule	Required
wk 1 Aug 18	How to Keep a Lab Notebook Schedule & Syllabus Scientific Method – Popcorn Activity	Complete online safety quiz before wk 2
wk 2 Aug 25	Basic Laboratory Safety, Measurements, Significant Figures (Turn in at the end of lab) Worksheet: Measurements, Graphing	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
wk 3 Sept 01	The Floating Egg Problem Turn in completed Measurements Worksheet (wk 2) Friday, Feb 7th – Last day to drop with full refund	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
wk 4 Sept 08	Nomenclature Worksheet Turn in completed Floating Egg Lab (wk 3).	- Lab ntbk with completed pre-lab
wk 5 Sept 15	Chemical Reactions of Copper and Percent Yield Turn in completed Nomenclature Worksheet (wk 4).	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
wk 6 Sept 22	Chemical Reactions Turn in completed Copper Reactions (wk 5).	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
wk 7 Sept 29	Organize Course Projects: A. Decide Mole Day Demonstration – Identify Requirements B. Gas Stoichiometry: The Automobile Airbag Part 1: Discuss formal presentation, Library Research, Develop Hypothesis Turn in completed Chemical Reactions (wk 6).	-Lab ntbk for note taking At the end of lab time, submit: A. Demonstration title with a brief procedure and list of chemicals and equipment required B. A hypothesis and brief procedure for the Auto Airbag experiment
wk 8 Oct 06	Gas Stoichiometry: The Automobile Airbag Part 2: Perform Experiment	- Lab coat, goggles, closed-toe shoes - Lab ntbk & Spiral binder
wk 9 Oct 13	Hess's Law: A Study of the Combustion of Magnesium	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
wk 10 Oct 20	Mole Day Demonstrations Turn in completed Hess's Law (wk 9), Demonstration procedure and reaction description.	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed demo procedure and reaction description
wk 11 Oct 27	Atomic Spectra Turn in digital first draft of Automobile Airbag Poster Presentation (wk 8)	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
wk 12 Nov 03	Redox – Breathalyzer (Subject to Change) Turn in completed Atomic Spectra (wk 11)	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
wk 13 Nov 10	Part I of LDS/VSEPR/IMF Activity Turn in completed Breathalyzer (wk 12).	-Lab ntbk with completed pre-lab
Wk 14 Nov 17	Part 2 of LDS/VSEPR/IMF Activity Final digital draft of Airbag Poster Presentation.	-Lab ntbk with completed pre-lab
Final Exam Nov 24	Lab Practical Turn in completed LDS/VSEPR/IMF Activity (wk 13-14)	- Lab coat, goggles, closed-toe shoes -Lab ntbk
Wk 16 Dec 01	Lab Poster Presentation	- Lab coat, goggles, closed-toe shoes -Lab ntbk with completed pre-lab
Final Exam Week - no assignments, no lab		