Chem 123L (501) **Sp 2016**

General Chemistry I Lab

Instructor: Dr. Tracy Terry Office A102a tjterry@unm.edu

Lab: Mon 10:30-1:15 in Academics 128

Tutoring Hours: M/Tu 2 pm – 3:30 pm (STEM Center)
Wed 10:30 – noon & 1pm – 3pm (Office A102a)
Thurs by appointment

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, or over email, on the due date.
- The Blackboard Learn and the UNM email systems 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

100 pts Formal Poster Presentation (~15%)
- 10 pts Hypothesis, Procedure, Materials (Feb 29th)
- 40 pts First draft of poster (Mar 28th)
- 40 pts Final draft of poster for printing (Apr 18)
- 10 pts Formal poster presentation (May 2)

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, Feb 5th

Formal Poster Presentation -

Feb 29th – Turn in hypothesis, procedure, materials list
Mar 7th – Perform experiment
Mar 28th – First draft of formal poster presentation is due
Apr 18th – Final draft of formal poster presentation is due for printing.
May 2nd – Formal poster presentation

Final Exam – Apr 25th - Bring lab notebook and 3-ring binder with graded labs for reference.

WEEK	CHEM 123L Schedule	Required
wk 1 Jan 18th	**MLK** No lab	
wk 2 Jan 25	**Schedule, Syllabus, Safety** **Measurements, Significant Figures**	Nothing required
wk 3 Feb 1	**How to Keep a Lab Notebook** **Scientific Method & Graphing – Popcorn Activity** **Friday, Feb 5th – Last day to drop with full refund**	**Complete online quizzes before midnight, Jan 31st** **Safety, Equipment, Measurements**
wk 4 Feb 8	**Nomenclature Worksheet**	Turn in completed pre-lab
wk 5 Feb 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 Feb 22	**Chemical Reactions** *Turn in completed Copper Reactions (wk 5).*	**- Lab coat, goggles, closed-toe shoes** **-Lab ntbk** with completed pre-lab
wk 7 Feb 29	**Stoichiometry Relay Race (one round)** **Gas Stoichiometry: The Automobile Airbag** Part 1: Discuss formal presentation & library research, Develop hypothesis (written and graphical), procedure, and materials list *Turn in completed Chemical Reactions (wk 6).*	**-Lab ntbk** for note taking At the end of lab time, submit: A hypothesis (written and graphical), procedure, and supply list for the Auto Airbag experiment
wk 8 Mar 7	**Gas Stoichiometry: The Automobile Airbag** Part 2: Perform Experiment	**- Lab coat, goggles, closed-toe shoes** - **Lab ntbk & Spiral binder**
wk 9 Mar 14	**Spring Break**	**Work on Poster**
wk 10 Mar 21	**Hess's Law: A Study of the Combustion of Magnesium**	**- Lab coat, goggles, closed-toe shoes** **-Lab ntbk** with completed pre-lab
wk 11 Mar 28	**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 Apr 04	**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 Apr 11	**Part I of LDS/VSEPR/IMF Activity** *Turn in completed Breathalyzer (wk 12).*	**-Lab ntbk** with completed pre-lab
Wk 14 Apr 18	**Part 2 of LDS/VSEPR/IMF Activity** *Final digital draft of Airbag Poster Presentation.*	**-Lab ntbk** with completed pre-lab
Final Exam Apr 25	**Lab Practical** *Turn in completed LDS/VSEPR/IMF Activity (wk 13-14)*	**- Lab coat, goggles, closed-toe shoes** **-Lab ntbk**
Wk 16 May 2	**Lab Poster Presentation**	
Final Exam Week - no assignments, no lab		