

Chem 123L (Monday) Sp 2018 General Chemistry I Lab

Instructor: Dr. Jerry Godbout Office 134 VAAS jgodbout@unm.edu

Lab: Mon 10:30-1:15 VAAS 128

Office Hours: Monday 10:30 – 12:00

Tuesday 2:00 – 4:00 (STEM Center)

Thursday 9:30 – 11:30, and anytime by appointment

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

Course Description: This course is designed to provide practice in laboratory measurements, using laboratory glassware and instrumentation, communicating scientific information, and in performing chemical calculations.

Course Requirements

- Students are responsible for all assignments regardless of attendance. There are no make-ups for laboratory experiments or exams due to the nature of the activities.
- Assignments may be turned in during lab, or to 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 during many labs and need to have log, anti-log, and exponential functions.
- **LABORATORY SAFETY AND CLEANLINESS 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, improper disposal of chemicals, etc.) and for improper treatment of lab equipment.
- 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

- 360 pts Experiments & Activities (30 pts each), Quizzes (10 pts each)
- 100 pts Formal Poster Presentation (~18% of final grade)
- 40 pts First draft of infographic
- 40 pts Final draft of infographic
- 20 pts Formal infographic presentation
- 100 pts Final Exam (~18% of final grade)

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.

15 pts Bonus – no lab safety violations (see Student Learning Objective #1) during the semester

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

By the end of the course, students will be able to...

1. Conduct laboratory experiments safely by wearing appropriate protection, by handling and disposing of chemicals correctly, and by putting away all laboratory equipment and cleaning your lab bench after use.
2. Prepare scientific graphs to demonstrate quantitative relationships between variables.
3. Demonstrate mastery in making chemical measurements.
4. Demonstrate mastery in experimental techniques including: the preparation of solutions using volumetric glassware, conducting isolation methods such as filtration, conducting calorimetric measurements, and conducting spectrophotometric measurements.
5. Write simple hypotheses based on selected chemical principles and/or observations.
6. Design experimental procedures for simple lab questions.
7. Properly use a lab notebook to record experimental data and observations with correct significant figures and units.
8. Make meaningful analyses of experimental data and summarize results in a proper format.
9. Communicate scientific information effectively and logically in written and oral forms.

Important Dates

Last Day to Drop the Class (with a full refund and without a grade) – Friday, Feb 2nd

Formal Infographic Presentation -

Week 12 (40 pts) – First draft of formal poster presentation is due

Week 14 (40 pts) – Final draft of formal poster presentation is due for printing.

Week 16 (20 pts) – Formal poster presentation

Final Exam – Week 15 (100 pts) - Bring lab notebook and 3-ring binder with graded labs for reference.

General Campus Policies

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.

Equal Access

If you have a documented disability, please make sure Equal Access Services has contacted me as soon as possible to ensure that your accommodations are provided in a timely manner.

Title IX

In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered "responsible employees" by the Department of Education (see pg 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>

Equal Opportunity

Harassment is a form of discrimination. When University faculty, administrators, and supervisors witness or receive a written or oral report or complaint of discrimination or harassment, they are required to engage in appropriate measures to prevent violations of this policy and promptly notify OEO, including notification of any actions taken to achieve informal resolution of the complaint. The University relies on its employees to notify the University's OEO office of all disclosures of discrimination and harassment as defined in this policy. <https://policy.unm.edu/university-policies/2000/2720.html>

Tentative Schedule

| Week | CHEM 123L Schedule | Required |
|---|--|---|
| 1 Jan 17 | No lab Martin Luther King Holiday | |
| 2 Jan 24 | Laboratory Introduction (Schedule, Syllabus, Safety, Lab Notebook, Measurements, Unit Conversion Activity) | |
| 3 Jan 31 | It's All About the Weight (Density, Precision, Accuracy, Significant Figures) Friday, Feb 3rd – Last day to drop with full refund | BBL Quiz PreLab: Sci Method Lab coat, goggles, closed-toe shoes |
| 4 Feb 07 | Pottery and Pigments (Reactivity of Ionic Compounds) | Lab coat, goggles, closed-toe shoes Lab Notebook (no prelab) |
| 5 Feb 14 | Chemical Reactions of Copper (Reaction Stoichiometry and Percent Yield) | Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab Turn in Pottery & Pigments Lab |
| 6 Feb 21 | Acid Base Titration (Reaction Stoichiometry) | Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab |
| 7 Feb 28 | Poster Presentation: Background <ul style="list-style-type: none"> • Assign poster topics to lab groups • Discuss poster requirements • Begin poster research and background information | Bring laptops if you have them (not required). |
| 8 Mar 07 | The Automobile Airbag (Gas Stoichiometry) | Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab |
| 9 Mar 14 | Spring Break | |
| 10 Mar 21 | Calorimetry Lab – Heat of Combustion of Magnesium | Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab |
| 11 Mar 28 | Atomic Spectra (instrument calibration) Atomic Trend Activity | Lab coat, goggles, closed-toe shoes Lab ntbk no prelab due Turn in Atomic Spectra Lab before leaving. |
| 12 Apr 4 | Periodic Table Activity | Poster First Draft due via email |
| 13 Apr 11 | Part I of LDS/VSEPR/IMF Activity | Lab ntbk with completed pre-lab |
| 14 Apr 18 | Part 2 of LDS/VSEPR/IMF Activity | Lab ntbk with completed pre-lab Poster Final Draft due via email |
| 15 Apr 25 | Lab Practical | Lab coat, goggles, closed-toe shoes Lab ntbk for reference. |
| 16 May 02 | Lab Poster Presentation | |
| Final Exam Week - no assignments, no lab | | |