CHEMISTRY 1215L
GENERAL CHEMISTRY I LABORATORY
Fall 2026

I. General Instructor Information

Instructor: Tray Niles	
Office Hours: Mon 12:30-1:30PM & Wed 1:15-2:15PM Or By Appointment	**Office Location: Arts and Science 102A**
	Email: eniles@unm.edu
Section: 501, 502	**Location:** Valencia Arts & Sciences 128, 135
Credit Hours: 1	**Office Phone:** 505 925 8600

II. Course Description

CHEM 1215L, General Chemistry I for STEM Majors Laboratory, Section

General Chemistry I Laboratory for Science Majors is the first semester laboratory course designed to complement the theory and concepts presented in General Chemistry I lecture. The laboratory component will introduce students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.

III. Texts/Materials

- A bound notebook for laboratory notes.
- A basic scientific calculator and safety goggles are required for this course.

IV. Student Learning Outcomes

- Understand, and practice concepts associated with laboratory safety (including the possible consequences of not adhering to appropriate safety guidelines).
- Demonstrate the computational skills needed to perform appropriate laboratory related calculations to include, but not be limited to:
  - determine the number of significant figures in numerical value
  - solve problems using values represented in exponential notation
  - solve dimensional analysis problems
  - manipulate simple mathematical formulas as needed to calculate the value of a variable
- Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measuring instrumentation (both analog and digital).
- Record quantitatively measured values to the correct number of significant figures and assign the correct units (In this context students will demonstrate an understanding of the terms *accuracy* and *precision*.).
- Master basic laboratory operations to include, but not be limited to:
  - weigh samples (liquid and solid)
  - determine sample volumes
  - measure the temperature of samples
  - heat/cool a sample or reaction mixture
  - decant
  - filter (vacuum and gravity)
  - titrate
  - chromatograph

- Correctly complete and submit laboratory reports including the following:
    - lab manual report sheets
    - related calculations
    - scientific graphs (as needed)
    - draw conclusions and answer questions based on experimental data/findings
- Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture portion of the course (Chem 1215). This connection is *very* important!

V. Course Requirements/Attendance/Grading

1. **Attendance:** According to UNM regulations, students enrolled for credit or audit are expected to attend all class sessions. Missing a lab period will result in a grade of zero for that experiment. You may arrange to make up an experiment in another section during the same week, provided that you obtain permission from both your instructor and the instructor in whose class you will be working. Do not hand in a lab report for which you did not perform the experiment. This is considered cheating and will be dealt with according to the UNM Academic Integrity Policy. Students missing more than 3 of the total scheduled courses may be dropped from the course by their instructor. Students must keep in mind that ultimately it is their responsibility to withdraw from the course. Absences from class do not relieve students from responsibility for missed assignments, material covered in class or exams. Please be sure to communicate promptly and regularly regarding issues that arise so that appropriate accommodations may be made.

2. You are required to come prepared, having read the experiment before entering the lab. There will be a brief explanation (typically 45 - 60 min) of the experiment, procedures, safety precautions, etc. held before any work is done in the lab. Very important information is discussed in the prelab sessions. You are required to arrive on time.

3. Completed laboratory reports are required at the beginning of the lab period following the completion of an experiment. **Late work is generally not accepted, however on a case-by-case basis late work may be prearranged with the instructor and one late lab report will be accepted and penalized 10%.**

Compliance with Safety Agreement: Students are required to comply with UNM's Safety Policy, including the wearing of safety goggles at all times in the laboratory required by the instructor and limiting unnecessary skin exposure to chemical contact (i.e. no shorts or sandals at any time). All students must view the Safety Video during the first lab period. Any student who is not present for the video during the first laboratory period must make arrangements with their instructor to view the video prior to working in the laboratory. Children and other visitors are not allowed in the laboratory due to possible hazardous conditions. Failure to comply with the conditions of the safety agreement may result in a grade of zero for the lab session or the student being dropped from lab class.

Dress Code: All UNM students, faculty and staff are required to be properly clothed at all times while working in or attending chemistry lab classes. Clothing must cover the body from the shoulders to the feet with no exposed skin showing. Approved safety goggles will be worn by all personnel in the lab while chemicals or glassware are in use in the laboratory. High-heeled shoes, sandals and other open-toed footwear are not acceptable for foot protection. Wearing of short shorts, short skirts, short shirts, exposed midriffs, and t-top shirts are not allowed (shirts and tops must cover the torso). Lab coats that extend below the knees can be substituted as appropriate clothing, but they must be buttoned in front.

Long hair will be confined. Students wearing inappropriate clothing will be directed to leave the laboratory and obtain safety appropriate attire.

Prelab Assignments: The student is responsible for reading the assigned laboratory experiments entirely, paying particular attention to the procedure and safety precautions. Online videos are provided for visual examples of the lab set-up and data collection to prepare for your hands-on experience. **Prior to attending the laboratory to perform an experiment the student must complete the prelab assignment.** Material from the prelab assignment will be covered in the weekly quiz.

Quizzes: These are low states formative evaluations of progression towards the unit learning objectives. Use these to self-evaluate your chemistry skills and the skills that need practice for the final summative assessment at the end of the semester. There is an in class quiz most weeks that covers the concepts, equipment, safety, and calculations presented in the prelab and previous week's experiment. You may use a sheet of notes during the quiz. One lowest quiz grade will be dropped. Quizzes comprise 35% of the final lab grade.

Lab Reports: These are low states formative evaluations of progression towards the unit learning objectives. Use these to self-evaluate your chemistry skills to focus on skills that need practice for the final summative assessment at the end of the semester. **There is a general checklist provided to follow for every report.** During lab, the student will turn-in the lab report, take quiz, receive content on experiment concepts, make observations, collect data, and perform calculations. The following week, the report sheets and postlab assignments from the previous week's lab activity will be due. Prelabs are checked at the beginning of class, before the lab lecture begins. Lab reports are due the week after you have completed the lab. If prior arrangements have been made late work is accepted for up to one week late for 10% reduced credit. One lowest lab report grade will be dropped. Report Sheets will comprise 30% of the final lab grade.

Final Exam: A final exam will be given during the last week, and students have two hours to complete it. (Note: In the event UNM closes during finals week, final grades for students will be calculated on the work assessed up to that point.) The final is a multiple choice written exam covering the main concepts, types of calculations, and procedures in the experiments. There will be a practice final exam with problems similar to those found on the final exam. Practice finals will be handed out at the end of the semester, and answer keys will be available. Along with the practice final exam, a review sheet will be available in class the week prior to the final to assist students in preparing for the lab final. The best study aids for the lab final are your graded quizzes and lab reports. It is highly recommended that you save these returned materials. Throughout the term, please be sure you understand what you are doing and why. This insures the best preparation for the final examination. The final comprises 25% of the final lab grade.

The course grade will be determined from the following:

Report Sheets: 35% Quizzes: 35% Final Exam: 30%

Grades assigned as follows:

100-98% = A+, 97-93% = A, 92-90% = A- 89-87% = B+, 86-83% = B, 82-80% = B-

79-77% = C+, 76-73% = C, 72-70% = C- 69-67% = D+, 66-63% = D, 62-60% = D-

<60% = F

Compliance with Academic Integrity Policy: I understand that any work which I submit for course credit will imply that I have adhered to this Academic Integrity policy: I will neither give nor receive unauthorized aid nor will I tolerate an environment which condones the use of unauthorized aid. The following will constitute violations of the UNM Academic Integrity Policy.

1. The use of any unauthorized aid (notes, tables, neighbors, etc.) during any examination or quiz. Only your instructor can authorize any aid.
2. The representation of any work done in consultation with another student, faculty member or any other person as solely one's own work. This does not preclude the pooling of data or other work in assigned laboratory or lecture groups as assigned by the instructor.
3. Bringing completed laboratory reports or data tables from prior semesters to laboratory for either submission or for reference.
4. Submission of assignments from prior semesters in place of current assignments.
5. Submission of a laboratory data table containing data for experiments not completed.
6. Plagiarism in any form in either lecture or laboratory assignments.

Posting of course content to online sites with the intention that someone else will complete the work is not allowed. One example of unauthorized posting of course content is the uploading of lab reports, homework, quiz, or test problems/answers to websites which include, but are not limited to, chegg.com, coursehero.com, slader.com, reddit forums, etc. Completing your lab reports by copying information that was posted to a "homework help" site such as chegg.com, coursehero.com, reddit forums, etc, or turning in lab reports, data, or assignments from another student or from previous semesters is strictly forbidden.

Students committing these offenses are subject to penalty ranging from a "0" on the lab report/assignment or test, to an "F" for the course.

Accommodations: UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center at arcsrvs@unm.edu or 505-277-3506.

UAP 2720 and 2740. Our classroom and university should foster mutual respect, kindness, and support. If you have concerns about discrimination, harassment, or violence, please seek support and report incidents. Find confidential services at LoboRESPECT Advocacy Center, the Women's Resource Center, and the Arcoiris Center. UNM prohibits discrimination on the basis of sex (including gender, sex stereotyping, gender expression, and gender identity). All instructors are "responsible employees" who must communicate reports of sexual harassment, sexual misconduct and sexual violence to Compliance, Ethics and Equal Opportunity. For more information, please see UAP 2720 and UAP 2740.

Credit-hour statement: This is a four-credit-hour course. Class meets for two 75-minute sessions of direct instruction and 2 hours a week for laboratory work for 17 weeks during the Fall 2026 semester. Please plan for a minimum of eight hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

Thriving and finding support: Students are especially successful at UNM when they take advantage of support and get involved in campus and academic life. The Student Life tab on the student and instructor MyUNM login page provides direct links to well-being resources, including financial capability, mental health, food, jobs, and resource centers. The Student Life tab on MyUNM will help you identify academic resources like peer tutoring and opportunities like study abroad. You can contact academic advisors and resource advisors for information and guidance via Student Hub on MyUNM. I look forward to providing you with information about academic opportunities related to our class and to helping you find support resources.

Responsible Learning and Academic Honesty: Cheating and plagiarism (academic dishonesty) are often driven by lack of time, desperation, or lack of knowledge about how to identify a source. Communicate with me and ask for help, even at the last minute, rather than risking your academic career by committing academic dishonesty. Academic dishonesty involves claiming that work created by another source is your own original work. It is a Student Code of Conduct violation that can lead to a disciplinary procedure. When you use a resource in work submitted for this class, document how you used it and distinguish clearly between your original work and the material taken from the resource. (Add specifics about acceptable AI usage.)

VII. CHEMISTRY 1215L Schedule Fall 2026

Week	Dates	CHEM 1215L Experiments
1	8/17 – 8/19	*Laboratory Safety and CHEM 1215L Math Review*
2	8/24 – 8/26	*Safety, Laboratory Equipment and Essential Math*.
3	8/31 – 9/02	*Density of Liquids and Solids*.
4	9/07 – 9/09	*Paper Chromatography*.
5	9/14 – 9/16	*Determining Percent Composition of Compounds*.
6	9/21 – 9/23	*Determining Percent Composition of Compounds*.
7	9/28 – 9/30	*Percent Yield of Chemical Reactions*.
8	10/05 – 10/07	*Determining Concentration of Acetic Acid in Vinegar*.
9	10/12 – 10/14	*Determining Concentration of Acetic Acid in Vinegar*.
10	10/19 – 10/21	*Using Gas Evolution for Mass Percent Analysis of Antacid*.
11	10/26 – 10/28	*Using Gas Evolution for Mass Percent Analysis of Antacid*.
12	11/02 – 11/04	*Using Calorimetry for Determining Heat of Reaction*.
13	11/09 – 11/11	*Using Calorimetry for Determining Heat of Reaction*.
14	11/16 – 11/18	*Emission Spectra*.
15	11/23 – 11/25	*Lewis Structures and Molecular Geometry*. *11/26 & 11/27 Thanksgiving Holiday*
16	11/30 – 12/02	*Sustainability/Final Review*
17	12/07 – 12/09	*Final Exam*