# CHEM 1215L: General Chemistry I for STEM Majors Laboratory

Spring 2024 – Section 501 – CRN 50458

**Instructor:** Dr. Jerry Godbout

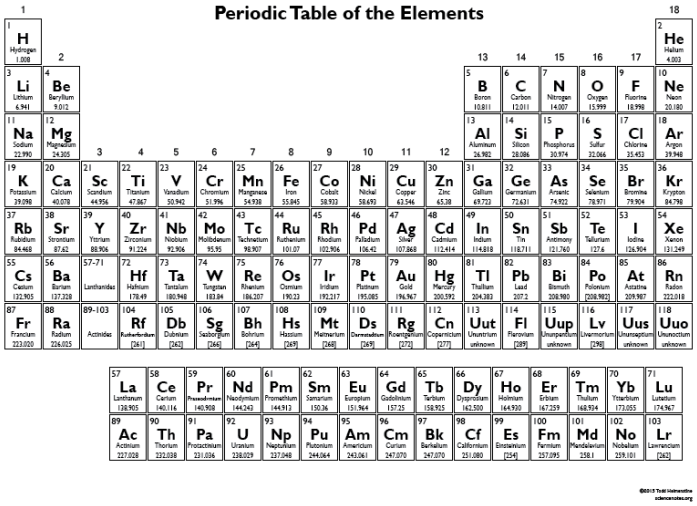
**Office:** VAAS 102A
**Email:** jgodbout@unm.edu
**Phone**: 505.925.8611

**Drop-in Hours:** Mondays 10:30 am – 11:30 am,
Mondays 1:00 pm – 3:00 pm,
Thursdays 10:00 am – 12:00 pm and anytime by appointment, either in-person or remote (all times US MT)**:**

**Meeting Time:** Wednesday 10:30 am – 1:15 pm, VAAS 128

**Course Description:** This course provides practice in laboratory measurements, using laboratory glassware and instrumentation, communicating scientific information, and in performing chemical calculations.

**Catalog Description:** Introduction to basic chemical laboratory principles and techniques. Meets New Mexico Lower Division General Education Common Core Curriculum Area III: Science. Prerequisite: MATH 1220 or MATH 1230 or MATH 1240 or MATH 1250 or MATH 1430 or MATH 1440 or MATH 1512 or MATH 1522 or MATH 2530 or ACT Math=>25 or SAT Math Section =>590. Pre- or corequisite: 1215 or 131.




## COURSE/INSTRUCTOR COMMUNICATIONS

- Email is the most effective. Electronic communication for this course **MUST** be through Canvas messaging.
- When requesting an appointment (which I am always happy to schedule), please propose three (3) times that work for you in your initial request. This will simplify and quicken the process
- It is the responsibility of the student to keep up with course announcements. ***Check your UNM email and Canvas Messaging daily!***

## COURSE REQUIREMENTS (Resources and Conduct)

- Chemistry: A Molecular Approach (3rd or 4th ed)
- Safety goggles, Lab Coat, Lab Notebook
- Calculator (non-graphing) with log/antilog and exponential functions
- Internet Access: *Blackboard Learn* and *UNM email address* ***must be checked daily!***
- 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**
- 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

## *HOW IS YOUR GRADE DETERMINED?*

(Exams, Quizzes, Homework, and the Like)

| | How Many* | Points |
|---|---|---|
| Experiments & Activities | 10 | 300 |
| Quizzes | 6 | 10 |
| Infographic Proposal and Draft | 1 | 40 |
| Final Infographic | 1 | 80 |
| Final Exam | 1 | 100 |
| **Total** | | **530** |

* Approximate values

## WHAT IF YOU NEED HELP? (UNM-Valencia Resources)

- **Instructor**: Office hours, STEM Center Hours, email
- **STEM Center**: Tutors*, molecular modelling kits, Laptops, textbooks

*When using tutors, it is the **students'** responsibility to make sure they understand well enough to complete the problems on **their own**.

## *WHAT DO I NEED FOR AN A?*

(What's the grading scale?)

| Earn This Many Points | Get This Grade |
|---|---|
| 519 | A+ |
| 488 | A |
| 477 | A- |
| 466 | B+ |
| 440 | B |
| 424 | B- |
| 413 | C+ |
| 387 | C |
| 366 | C- |
| 355 | D+ |
| 329 | D |
| 318 | D- |
| 290 | F+ |
| 0 | F |

The exam will consist of three components: a question/answer component, basic measurements, and developing a procedure based on previous labs. A 15 pts Bonus will be earned for no lab safety violations

# Student Learning Objectives

**By the end of the course, students will be able to…**

1. Demonstrate and apply concepts associated with laboratory safety, including the possible consequences of not adhering to appropriate safety guidelines.
2. Demonstrate the computational skills needed to perform appropriate laboratory related calculations to include, but not be limited to determining the number of significant figures in numerical value with the correct units, solving problems using values represented in exponential notation, solving dimensional analysis problems, and manipulating mathematical formulas as needed to determine the value of a variable.
3. Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital).
4. Prepare solutions with an acceptable accuracy to a known concentration using appropriate glassware.
5. Master basic laboratory techniques including, but not limited to weighing samples (liquid and solid),determining sample volumes, measuring the temperature of samples, heating and cooling a sample or reaction mixture, decantation, filtration, and titration.
6. Demonstrate mastery in experimental techniques, such as pressure measurements, calorimetric measurements, and spectrophotometric measurements.
7. Draw conclusions based on data and analyses from laboratory experiments.
8. Present experimental results in laboratory reports of appropriate length, style and depth, or through other modes as required.
9. Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture course.
10. Design experimental procedures to study chemical phenomena.

## Tentative Schedule – Check UNM Learn and email for updates

| Meeting | CHEM 1215L Schedule | Required |
|---|---|---|
| 1<br>17 Jan 2024 | **Laboratory Introduction** (Schedule, Syllabus, Safety, Lab Notebook, Measurements, Unit Conversion Activity) | Nothing yet |
| 2<br>24 Jan 2024 | **It's All About the Weight**<br>(Density, Precision, Accuracy, Significant Figures) | Canvas PreLab: Sci Method<br>Lab coat, goggles, closed-toe shoes |
| 3<br>31 Jan 2024 | **Popcorn Theories** | Canvas PreLab: Sci Method<br>Lab coat, goggles, closed-toe shoe |
| 4<br>07 Feb 2024 | **Pottery and Pigments**<br>(Reactivity of Ionic Compounds) | Lab coat, goggles, closed-toe shoes<br>Lab Notebook (no prelab) |
| 5<br>14 Feb 2024 | **Electron Configuration Activity** | No prep needed |
| 6<br>21 Feb 2024 | **Atomic Spectra**<br>(instrument calibration) | Lab coat, goggles, closed-toe shoes<br>Lab ntbk no prelab due |
| 7<br>28 Feb 2024 | **TBD** | TBD |
| 8<br>06 Mar 2024 | **LDS/VSEPR/IMF Activity** | Lab ntbk with completed pre-lab |
| 9<br>13 Mar 2024 | **Spring Break** | |
| 10<br>20 Mar 2024 | **Infographic: Background**<br>• Assign topics to lab groups<br>• Discuss infographic requirements<br>• Begin research and background information | Bring laptops if you have them (not required). |
| 11<br>27 Mar 2024 | **Chemical Reactions of Copper**<br>(Reaction Stoichiometry and Percent Yield) | Lab coat, goggles, closed-toe shoes<br>Lab ntbk with completed pre-lab |
| 12<br>03 Apr 2024 | **Acid Base Titration**<br>(Reaction Stoichiometry) | Lab coat, goggles, closed-toe shoes<br>Lab ntbk with completed pre-lab |
| 13<br>10 Apr 2024 | **The Automobile Airbag**<br>(Gas Stoichiometry) | Lab coat, goggles, closed-toe shoes<br>Lab ntbk with completed pre-lab |
| 14<br>17 Apr 2024 | **Calorimetry Lab – Hess' Law** | Lab coat, goggles, closed-toe shoes<br>Lab ntbk with completed pre-lab |
| 15<br>24 April 2024 | Lab practical and final exam | Lab coat, goggles, closed-toe shoes<br>Lab ntbk for reference. |
| 16<br>01 May 2024 | Infographic presentations and practical make-ups | |

| Selected Important Dates & Holidays[1] | |
|---|---|
| Mon, 15 Jan 2024 | University Holiday – Martin Luther King Day (campus closed) |
| Fri, 26 Jan 2024 | Last day to register, ADD sections and change credit hours on LoboWEB<br>Enrollment cancellation for non-payment on LoboWEB |
| Fri, 02 Feb 2024 | Last Day to DROP without "W" grade and 100% tuition refund on LoboWEB |
| Fri, 09 Feb 2024 | Last Day to CHANGE grade option |
| Sun, 10 Mar 2024 | University Holiday – Spring Break (through Sun, 17 Mar 2024) |
| Fri, 12 Apr 2024 | Last Day to DROP **WITHOUT** Dean's Permission on LoboWEB |

[1] For a complete and up-to-date calendar, please see https://registrar.unm.edu/semester-deadline-dates/spring-2022.html

## 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 by phone at 505-277-3506. The UNM-Valencia Equal Access Services (Sarah Clawson, Coordinator), at (505) 925-8840 or by email at sjclawson@unm.edu.

Equal Access Services

## Support

Visit my drop-in hours, contact me via Canvas messaging or email (jgodbout@unm.edu).

The UNM-Valencia Equal Access Services (Sarah Clawson, Coordinator), at (505) 925-8840 or by email at sjclawson@unm.edu., Or Accessibility Resource Center (https://arc.unm.edu/) at mailto:arcsrvs@unm.edu (505) 277-3506.

## Credit-hour Statement

This is a four credit-hour course. Class meets for two 75-minute sessions of direct instruction and 120 minutes of lab/recitation instruction per week for sixteen weeks during the Spring 2024 semester. Please plan for a minimum of nine hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

## Support

Resources to support study skill and time management are available through

UNM-Valencia Learning Commons (Tutoring)

Tutoring is available to you in math, science, writing, and other subjects through the Learning Commons: Learning and STEM Centers and Writing Center. In person tutoring is in these centers in the LRC (the building that also has the library). Tutoring in Zoom and, for writing, through email, is also available.

Making use of tutoring is a fantastic way to use your resources and set yourself up to learn deeply and well in your courses.

To schedule an appointment, please go to: Learning Commons Bookings

Learning Commons Booking

If you are making an email appointment with the Writing Center, email your draft to tutor@unm.edu after you fill out the form above.

If you have difficulty with the scheduling link above, would like an appointment in a subject not listed at that link, or have a question, email tutor@unm.edu. You'll get answers during business hours Monday through Friday.

The webpage, with more details about available hours, is here: Learning Commons: Tutoring Services webpage.

Resources to support study skills and time management are available through Student Learning Support at the Center for Teaching and Learning.

## Title IX

Our classroom and our university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, please access the resources available to you on campus. Please note that, because UNM faculty, TAs, and GAs are considered "responsible employees" any disclosure of gender discrimination (including sexual harassment, sexual misconduct, and sexual violence) made to a faculty member, TA, or GA must be reported by that faculty member, TA, or GA to the university's Title IX coordinator. For more information on the campus policy regarding sexual misconduct and reporting, please see: https://policy.unm.edu/university-policies/2000/2740.html.

Title IX Policy

**Support**

LoboRESPECT Advocacy Center and the support services listed on its website, the Women's Resource Center and the LGBTQ Resource Center all offer confidential services and reporting.

**Land Acknowledgement**

Founded in 1889, the University of New Mexico sits on the traditional homelands of the Pueblo of Sandia. The original peoples of New Mexico Pueblo, Navajo, and Apache since time immemorial, have deep connections to the land and have made significant contributions to the broader community statewide. We honor the land itself and those who remain stewards of this land throughout the generations and also acknowledge our committed relationship to Indigenous peoples. We gratefully recognize our history.

Resource: Division for Equity and Inclusion.

**Citizenship and/or Immigration Status**

Citizenship/Immigration status

All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect your privacy if you choose to disclose your status. As for all students in the class, family emergency-related absences are normally excused with reasonable notice to the professor, as noted in the attendance guidelines above. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community. The Administration's welcome is found on our website: http://undocumented.unm.edu/.

**Respectful and Responsible Learning**

We all have shared responsibility for ensuring that learning occurs safely, honestly, and equitably. Submitting material as your own work that has been generated on a website, in a publication, by an artificial intelligence algorithm, by another person, or by breaking the rules of an assignment constitutes academic dishonesty. It is a student code of conduct violation that can lead to a disciplinary procedure. *Please ask me for help in finding the resources you need to be successful in this course. I can help you use study resources responsibly and effectively.* Off-campus paper writing services, problem-checkers and services, websites, and AIs can be incorrect or misleading. Learning the course material depends on completing and submitting your own work. UNM preserves and protects the integrity of the academic community through multiple policies including policies on student grievances (Faculty Handbook D175 and D176), academic dishonesty (FH D100), and respectful campus (FH CO9). These are in the *Student Pathfinder* (https://pathfinder.unm.edu) and the *Faculty Handbook* (https://handbook.unm.edu).

**Support**

Many students have found that time management workshops or work with peer tutors can help them meet their goals. These and are other resources are available through PASOS (Pathways to Articulation and Sustainable Opportunities for Students), TRIO Student Support Services, and Student Learning Support at the Center for Teaching and Learning.

**Respectful Conduct Expectations**

I am committed to building with you a positive classroom environment in which everyone can learn. I reserve the right to intervene and enforce standards of respectful behavior when classroom conduct is inconsistent with University expectations [and/or classroom community agreements]. Interventions and enforcement may include, but are not limited to, required meetings to discuss classroom expectations, written notification of expectations, and/or removal from a class meeting. Removal from a class meeting will result in an unexcused absence. Two or more unexcused absences may result in permanent removal and a drop from the course (see attendance policy). The University of New Mexico ensures freedom of academic inquiry, free expression and open debate, and a respectful campus through adherence to the following policies: D75: Classroom Conduct, Student Code of Conduct, University Policy 2240 – Respectful Campus, University Policy 2210 – Campus Violence.

**Connecting to Campus and Finding Support:** UNM-Valencia has many resources and centers to help you thrive, including opportunities to get

involved, mental health resources, academic support including tutoring, resource centers, free food at Valencia Campus Food Pantry, and jobs on campus. Your advisor, staff at the resource centers and I can help you find the right opportunities for you.

**Wellness**

If you do need to stay home due to illness or are experiencing a wellness challenge, please take advantage of the resources below. You can communicate with me via Canvas, or email. I can work with you to provide alternatives for course participation and completion. Let me, an advisor, or another UNM staff member know that you need support so that we can connect you to the right resources. UNM is a mask friendly, but not a mask required, community. If you are experiencing COVID-19 symptoms or those of any other contagious infection, please do not come to class.

**Support**

PASOS Resource Center (505) 925-8546, mailto:pasos@unm.edu. The Resource Center is an on-campus center that serves as a "one-stop" for all non-academic needs of UNM-Valencia students.

Student Health and Counseling (SHAC) at (505) 277-3136. If you are having active respiratory symptoms (e.g., fever, cough, sore throat, etc.) AND need testing for COVID-19; OR If you recently tested positive and may need oral treatment, call SHAC.

TimelyCare: Free 24/7 virtual care services (medical, emotional support, health coaching, self-care, basic needs support. Go to http://timelycare.com/unm.

LoboRESPECT Advocacy Center (505) 277-2911 can offer help with contacting faculty and managing challenges that impact your UNM experience.

**Academic Integrity**

Having academic integrity is paramount to your success in any class. Plagiarism or cheating is not tolerated. Any instance of this will result in a grade of zero for that assignment. Here is the link to the UNM Academic Dishonesty Policy:

Academic Integrity Policy

https://policy.unm.edu/regents-policies/section-4/4-8.html. or scan the QR code above:

The policy states: *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, up to and including dismissal, against any student who is found guilty of academic dishonesty or who otherwise fails to meet the expected standards. Any student 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 is defined as: "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; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.