CHEM 1215L: General Chemistry I for STEM Majors Laboratory

Spring 2021 – Section 501 – CRN 50458

Instructor: Dr. Jerry Godbout

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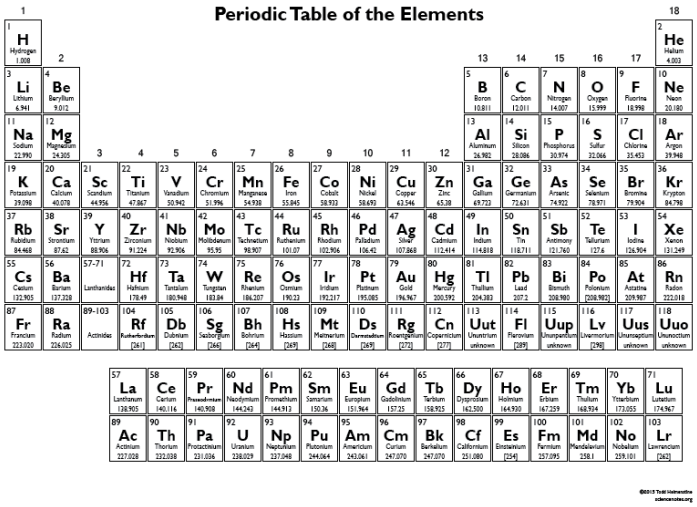
Office Hours: Monday 1:00 pm – 4:00 pm, Tuesday, 2:00 – 4:00 pm and anytime by appointment

Meeting Time: Wednesday 11:46 am – 2:30 pm, VAAS 128

Catalog 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

- As I am usually on campus on Wednesdays, Email is the most effective. Electronic communication for this course **MUST** be through your UNM email.
- 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 Blackboard Learn daily!***

COURSE REQUIREMENTS (Resources and Conduct)

- Chemistry: A Molecular Approach (3rd through 5th ed)
- Safety goggles, Face Mask, 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 treatment of lab equipment

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 18 Jan 2021	**No Meeting** (no in-person meetings yet)	Nothing yet
2 27 Jan 2021	**It's All About the Weight** (Density, Precision, Accuracy, Significant Figures) **Friday, Feb 3rd – Last day to drop with full refund**	Lab coat, goggles, closed-toe shoes
3 03 Feb 2021	**TBD**	Watch this space
4 10 Feb 2021	**Pottery and Pigments** (Reactivity of Ionic Compounds)	Lab coat, goggles, closed-toe shoes Lab Notebook (no prelab)
5 17 Feb 2021	**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 24 Feb 2021	**Acid Base Titration** (Reaction Stoichiometry)	Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab
7 03 Mar 2021	**Synthesis of Biodiesel**	Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab
8 10 Mar 2021	**The Automobile Airbag** (Gas Stoichiometry)	Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab
17 Mar 2021	**Spring Break**	
9 24 Mar 2021	**Calorimetry Lab – Heat of Combustion of Biodiesel**	Lab coat, goggles, closed-toe shoes Lab ntbk with completed pre-lab
10 31 Mar 2021	**Infographic: Background** • Assign topics to lab groups • Discuss infographic requirements • Begin research and background information	Bring laptops if you have them (not required).
11 07 Apr 2021	**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 14 Apr 2021	**Electron Configuration Activity**	**Infographic First Draft due via email**
13 21 Apr 2021	**LDS/VSEPR/IMF Activity**	Lab ntbk with completed pre-lab **Infographic Final Draft due via email**
14 28 Apr 2021	**Lab Practical and Final Exam**	Lab coat, goggles, closed-toe shoes Lab ntbk for reference.
15 05 May 2021	**Infographic Presentations**	

Important Dates & Holidays (for the most current information, check http://valencia.unm.edu/academics/calendar/spring.html	
Mon, 18 Jan 2021	Instruction Begins University Holiday – Martin Luther King Day (campus closed)
Fri, 29 Jan 2021	Last day to register, ADD sections, and change credit hours Enrollment cancellation for non-payment
Fri, 05 Feb 2021	Last Day to DROP without "W" grade and 100% tuition refund
Fri, 12 Feb 2021	Last Day to CHANGE grade option
Sun, 14 Mar 2021	University Holiday – Spring Break (through Sat, 20 Mar 2021)
Fri, 16 Apr 2021	Last Day to withdraw **WITHOUT** Student Services Permission
Fri, 07 May 2021	Last Day to withdraw **WITH** Student Services Permission

Things That Aren't Chemistry, But Are Still Important
(Campus and University Policies)

Respect the UNM Community by Preserving Health

This may not apply to this class specifically, but will apply for any in-person class, or if you have in-person business/appointments, etc. on any UNM campus

You have the ability to prevent the spread of COVID-19 and to preserve the health of fellow students, your instructor, staff and the community by following UNM health protocols. The UNM Provost Administrative Directive on Mandatory Student Face Covering and Symptom Reporting of July 9, 2020 requires that **all students on UNM-Main and UNM branch campuses wear face masks in the face-to-face classroom and on campus unless they have a specific mask accommodation (confidentially documented with the Accessibility Resource Center).** UNM Provost Administrative Directive is consistent with Governor Lujan Grisham's Public Health Emergency Order as amended, and the Public Health Order of the New Mexico Health Secretary. It also requires daily participation in symptom screening through covidscreen, which will be sent via UNM e-mail.

Acceptable masks and mask wearing in class: A two-layer mask that covers the nose and mouth and that is cleaned regularly is acceptable. A face shield is not sufficient protection. It is vital that you wear your mask correctly, covering your nose and mouth. Removing your mask for an extended period to eat or drink in class violates the Provost Administrative Directive and endangers others.

Mask Wearing Accommodation*:* Individuals with a documented disability or diagnosis may seek accommodation with the UNM Accessibility Resource Center (ARC) (https://arc.unm.edu/). Individuals do not need to reveal private information to an instructor. ARC will require documentation of health requirements, which will be kept confidential. The instructor will be informed only of any need for accommodation.

Consequences of not wearing a mask properly: Unless you have an ARC-approved accommodation, if you don't wear a mask, or if you do not wear a mask properly by covering your nose and mouth, you will be asked to leave class. If you fail to wear a mask properly on more than one occasion, you can expect to be dropped from the class. If you insist on remaining in the classroom while not wearing a mask (without an ARC-determined accommodation), class will be dismissed for the day to protect others and you will be dropped from the class immediately.

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.

Equal Access Services (Valencia Campus)

If you have a documented condition that may affect your performance in this class, please register with Equal Access Services as soon as possible so accommodations can be arranged in a timely manner. EAS can provide a quiet place to take exams, additional time, and additional services if there is a documented need. For more information, please see their website at https://valencia.unm.edu/students/advisement/equal-access-services.html, or scan the QR code above:

Equal Access Services

Sexual Misconduct and Gender Discrimination

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 page 15 - http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf). This designation requires that any report made to a faculty member, TA, or GA regarding sexual misconduct or gender discrimination must be reported to the Office of Equal Opportunity and the Title IX Coordinator. For more information on this policy, https://policy.unm.edu/university-policies/2000/2740.html or scan the QR Code above:

Title IX Policy

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.

Citizenship and/or Immigration Status

All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect yo ur 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/

Citizenship/Immigration status