CHEM 1225L: General Chemistry II for STEM Majors Laboratory

Fall 2020 – Section 501 – CRN 64810

Instructor: Dr. Jerry Godbout

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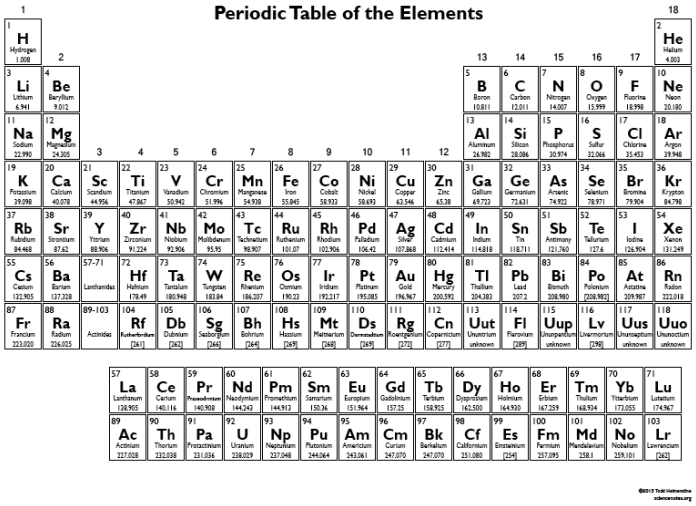
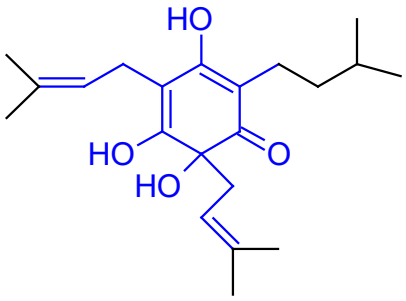
Office Hours: 10:30 pm – 1:45 am, Tuesday, 1:30 – 2:45 pm
and anytime by appointment (all *via* Zoom at this point)

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

Course Description: General Chemistry II Laboratory for Science Majors is the second of a two semester sequence of laboratory courses designed to complement the theory and concepts presented in General Chemistry II lecture. The laboratory component will introduce students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.





COURSE/INSTRUCTOR COMMUNICATIONS

- 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!***

WHAT YOU'LL NEED (Required Resources)

- Chemistry: A Molecular Approach (3rd or 4th ed)
- Safety goggles, lab coat, face mask, lab notebook (CHEM 1215L notebook may be used)
- Calculator (non-graphing) with log/antilog and exponential functions
- Internet Access: *Blackboard Learn* and *UNM email address* ***must be checked daily!***

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**.

HOW IS YOUR GRADE DETERMINED?

(Exams, Quizzes, Homework, and the Like)

	How Many	Points
Experiments & Activities	8	240
Project Proposal	1	40
Project Poster	1	80
Project Presentations	1	80
Final Exam	1	15 %
Total		**100 %**

* Approximate values

WHAT DO I NEED FOR AN A?

(What's the grading scale?)

Earn This %	Get This Grade
98	A+
92	A
90	A-
88	B+
83	B
80	B-
78	C+
73	C
69	C-
67	D+
62	D
60	D-
55	F+
0	F

WHEN WE LEARN THIS STUFF?

(Schedule is approximate and subject to change by the instructor, and of course any new public health orders. I'm going to try to front-load the experimental stuff as much as possible in case we have to stop in-person activities before the end of the semester)

Week	Activity
1 19 Aug	Safety, Lab Notebook, Measurements
2 26 Aug	Colligative Properties of Candles
3 02 Sep	Solution Spectroscopy
4 09 Sep	Kinetics of Food Coloring Bleaching
5 16 Sep	Hard Water Titration
6 23 Sep	Le Châtelier's Principle
7 30 Sep	K_a Determination for a Weak Acid
8 07 Oct	University Holiday – Fall Break
9 14 Oct	Independent Project Part I
10 21 Oct	TBA
11 28 Oct	Independent Project Part II – Experimentation
12 04 Nov	Independent Project Part II – Experimentation
13 11 Nov	Independent Project Part II – Analysis
14 18 Nov	TBA
15 25 Nov	TBA
16 02 Dec	Project Poster Session (virtual)
Final Exam Week - no assignments, no lab	

Course-Level Student Learning Outcomes

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. Perform basic laboratory operations related to, but not limited to, gas behavior, colligative properties of solutions, calorimetry, chemical kinetics, chemical equilibria, acid/base titrations, electrochemistry, metal reactivity, and qualitative analyses of ions.
6. Draw conclusions based on data and analyses from laboratory experiments.
7. Present experimental results in laboratory reports of appropriate length, style and depth, or through other modes, as required.
8. Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture course.
9. Design experimental procedures to study chemical phenomena

Independent Research Project

- The independent research project for CHEM 1225L has three components: the research proposal, the lab poster, and the research presentation (powerpoint).
- Each student or lab group will develop their independent research proposal. It must involve non-alcoholic liquids (ie. cola, milk, tea, coffee, fruit juice, well water, etc.). The proposal must be approved by Dr. Godbout. No two groups will test the same hypothesis or do the same experiments.
- The research proposal is due week 8. Turn in 1 per lab group. Include the hypothesis, a COMPLETE list of materials required, a proposed method (refer to a published laboratory procedure), and references. You will be graded on originality, organization, completion, sound scientific ideology and proper grammar.
- After approval of your research proposal, you will conduct the experiments during week 10 through week 12. No unauthorized experiments should be conducted at this time. If an unauthorized experiment is conducted, you will receive a zero on all components of the independent research proposal.
- If experimentation is completed during weeks 10-12, lab time on week 13 should be used to begin to compile data, discuss interpretation with Dr. Terry, and create the lab poster and presentation.
- The research presentation will occur in class during week 15, the poster is also due at this time.
- The poster session will occur in the hallway outside of lab during week 16.

Important Dates & Holidays (for the most current information, check http://valencia.unm.edu/academics/calendar/fall.html)	
Mon, 17 Aug 2020	Instruction begins
Fri, 28 Aug 2020	Last day to register, ADD sections, and change credit hours on LoboWeb Last Day to CHANGE grade option without permission Enrollment cancellation for non-payment
Fri, 04 Sep 2020	Last Day to DROP without "W" grade and 100% tuition refund on LoboWEB, Last Day to CHANGE grade option with permission
Mon, 07 Sep 2020	University Holiday – Labor Day
Wed, 07 Oct 2020	University Holiday – Fall Break
Tue, 03 Nov 2020	University Holiday – Election Day!
Fri, 06 Nov 2020	Last Day to withdraw **WITHOUT** Dean's Permission
Wed, 25 Nov 2020	Last day of in-person classes
Thu, 26 Nov 2020	University Holiday – Thanksgiving (extends through Fri, 27 Nov 2020)
Mon, 30 Nov 2020	Remote instruction week (for **all** classes, extends through Fri, 04 Dec 2020)
Fri, 04 Dec 2020	Last day to withdraw **WITH** dean's permission Last day to change grading options **WITH** dean's permission
Sat, 05 Dec 2020	Last day of instruction
Mon, 07 Dec 2020	Remote final exam week (through Sat) Date time for use TBA.

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:

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

Academic Integrity Policy

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 at 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 at right:

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

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/