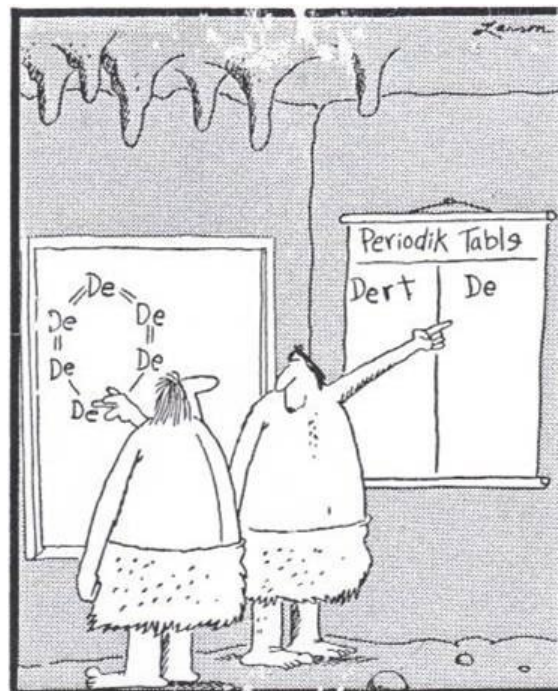


WHAT YOU'LL LEARN (Course-Level Learning Objectives)

1. Use dimensional analysis, the SI system of units and appropriate significant figures to solve quantitative calculations in science.
2. Explain the structure of atoms, isotopes and ions in terms of subatomic particles.
3. Understand the differences between physical and chemical changes to matter, and utilize the IUPAC system of nomenclature and knowledge of reaction types to describe chemical changes, predict products and represent the process as a balanced equation.
4. Apply the mole concept to amounts on a macroscopic and a microscopic level and use this to perform stoichiometric calculations including for reactions in solution, gases and thermochemistry.
5. Apply the gas laws and kinetic molecular theory to relate atomic level behavior to macroscopic properties.
6. Describe the energy conversions that occur in chemical reactions and state changes, relating heat of reaction to thermodynamic properties such as enthalpy and internal energy, and apply these principles to measure and calculate energy changes in reaction.



Early chemists describe the first dirt molecule

7. Use different bonding models to describe formation of compounds (ionic and covalent) and apply knowledge of electronic structure to determine molecular spatial arrangement and polarity.
8. Analyze how periodic properties (e.g. electronegativity, atomic and ionic radii, ionization energy, electron affinity, metallic character) and reactivity of elements results from electron configurations of atoms.

COURSE/INSTRUCTOR COMMUNICATIONS

- **Please use the messaging function in UNM Learn for course communications.** UNM email (Lobo Mail) should be used only when there are issues with Learn messaging.
- When requesting meeting, please propose three (3) times that work for you in your initial request, and I'll choose from those if possible. This makes scheduling much more efficient
- It is the responsibility of the student to keep up with course announcements. ***Check UNM Learn Messaging daily and your UNM email daily!***

WHAT YOU'LL NEED (Required Resources)

- Chemistry: A Molecular Approach (any edition 2nd through 5th)
- Mastering Chemistry Access Code (link on UNM Learn, course ID **godbout15989**)
- Calculator (non-graphing) with log/antilog and exponential functions
- Internet Access: *BB Learn* and *UNM email address must be checked regularly (daily)*

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

- **Instructor:** Class, office hours
- **STEM Center:** Tutors*, molecular modelling kits, Laptops, textbooks (see UNM Learn for remote tutoring instructions)

* Reminder: 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	Weight
Class Points	1	10 %
Quizzes	24*	10 %
Homework	10	15 %
Exams	4	50 %
Final Exam	1	15 %
Total		100 %

* Approximate values

** Each equally weighted, 12.5 % each

WHAT YOU'LL FIND USEFUL (Recommended Resources)

- Binder for lecture notes, handouts, group activities
- Mastering Chemistry notebook: keep track of problem solving, identify patterns, record areas of difficulty
- Small markerboard to share your work with classmates
- Download your favorite from the internet! Having a paper copy available while you are working will be very useful

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

WHAT WILL MY ROUTINE BE LIKE?

- **Before Class:** complete any preparatory assignment (reading, video, etc.)
- **During Class:** Work in groups in breakout rooms to master concepts. The more you put in, the more you'll get out. There will also be some recorded lectures to fill out the and show some more examples.
- **After Class:** work on homework assignment relevant to that day's topic (review notes, **WORK ON PROBLEMS**, think of questions for office hour visits, etc.
- **Repeat 28-ish times!**

WHAT WILL EACH CLASS BE LIKE?

- **Course Business**
- **Group Activity:** collaborative activities to help master that day's topic
- **Reflection:** an opportunity to put the day's lesson into larger perspective, and formulate/ask questions
- **Quiz:** (after class) covering material recently covered and any assigned preparation (reading, video, etc.)
- **Homework:** Work on Mastering Chemistry assignment

Class Policies, Strategies for Success, and Important Dates

- **Be There.** Attendance is expected.
 - I will exercise my discretion to without notice to drop any student who:
 - misses the first two meetings or has not registered any activity in UNM Learn and/or Mastering Chemistry by the end of the 2nd week;
- **Be on time.** Class meetings will begin promptly, I hope. Please try to join in promptly as well.
- **When class ends, the work is just beginning.** Expect to dedicate at least 9 out-of-class hours per week for this class. Electronic quizzes (UNM Learn) and

homework (Mastering Chemistry) will be assigned regularly.

- **Make a schedule.** Most of your overall work in the class will be "on your own." Make a plan, stick to it, and don't fall behind!

All of this is flexible. These continue to be challenging times, and I realize that everyone has many additional stresses in their lives. I don't want to add to it more than necessary. Please don't hesitate to ask about deadlines and the like.

Selected Important Dates & Holidays¹

Mon, 17 Jan 2022	University Holiday – Martin Luther King Day (campus closed)
Fri, 28 Jan 2022	Last day to register, ADD sections, and change credit hours Enrollment cancellation for non-payment
Fri, 04 Feb 2022	Last Day to DROP without "W" grade and 100% tuition refund
Fri, 11 Feb 2022	Last Day to CHANGE grade option
Sun, 13 Mar 2022	University Holiday – Spring Break (through Sat, 20 Mar 2021)
Fri, 15 Apr 2022	Last Day to withdraw WITHOUT Student Services Permission
Fri, 06 May 2022	Last Day to withdraw WITH Student Services Permission
Wed 11 May 2022	Final Exam (for this section)

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

WHEN WE LEARN THIS STUFF?

(Schedule is aspirational, approximate and subject to change by the instructor, public health orders, and other circumstances beyond our control)

Class	Date	Topics/Events
1	Mon 17 Jan	Martin Luther King Day - No meeting
2	Wed 19 Jan	Nuclear Atom GA (2.5 - 2.6)
3	Mon 24 Jan	Dimensional Analysis GA (1.6 - 1.8)
4	Wed 26 Jan	Dalton's Atomic Theory (2.1 - 2.5)
5	Mon 31 Jan	Periodic Table, Average Atomic Mass GA (2.7 - 2.8)
6	Wed 02 Feb	Molar Mass (Counting by Weighing GA) (2.8)
7	Mon 07 Feb	Chemical Bonding, Formulas and Naming (3.1 - 3.7)
8	Wed 09 Feb	Exam 1 (Chapters 1 & 2)
9	Mon 14 Feb	Molar Mass, Balanced Chemical Equations (3.8 - 3.12)
10	Wed 16 Feb	Stoichiometry, L.R., % Yield, (4.1 - 4.2)
11	Mon 21 Feb	Solution Stoichiometry. Aqueous Solutions, Molarity (4.3 - 4.6)
12	Wed 23 Feb	Aqueous Reactions, Net Ionic Equations (4.7 - 4.9)
13	Mon 28 Feb	Ideal Gas Equation (5.1 - 5.4)
14	Wed 02 Mar	Exam 2 (Chapters 3 - 4)
15	Mon 07 Mar	Gas Mixtures, Gas Stoichiometry (5.6 - 5.7)
16	Wed 09 Mar	Kinetic Molecular Theory, Real Gases, Thermodynamics Intro (5.8, 5.10, 6.1 - 6.3)
	Mon 14 Mar	Spring Break (no meeting)
	Wed 16 Mar	Spring Break (no meeting)
17	Mon 21 Mar	Thermochemistry and Calorimetry (6.3 - 6.7)
18	Wed 23 Mar	Hess' Law and Reaction Enthalpies (6.8 - 6.9)
19	Mon 28 Mar	Atomic Orbitals and Shapes (7.5 - 7.6)
20	Wed 30 Mar	Electronic Configurations and Periodic Table (8.1 - 8.5)
21	Mon 04 Apr	Exam 3 (Chapters 5 - 7)
22	Wed 06 Apr	Periodic Trends (8.6 - 8.9)
23	Mon 11 Apr	Lewis Dot Structures (9.1 - 9.5)
24	Wed 13 Apr	Bond Polarity, Dipoles, Bond Characteristics (9.6 - 9.11)
25	Mon 18 Apr	VSEPR Theory (10.1 - 10.5)
26	Wed 20 Apr	Hybridization (10.6 - 10.7)
27	Mon 25 Apr	Bonding Review
28	Wed 27 Apr	Exam 4 (Chapters 8 - 10)
29	Mon 02 May	Molecular Orbital Theory (10.8)
30	Wed 04 May	Molecular Orbital Theory (10.8)
	Wed 11 May	Final Exam (9:00 - 11:00 a.m.)

That molecule at the top of the first page - message me its name for 5 quiz points

Respect the UNM Community by Preserving Health

UNM Administrative Mandate on Required Vaccinations

UNM requires COVID-19 vaccination and a booster for all students, faculty, and staff, or an approved exemption (see: [UNM Administrative Mandate on Required Vaccinations](#)). Proof of vaccination and booster, or a [medical, religious, or online remote exemption](#), must be uploaded to the [UNM vaccination verification site](#). Failure to provide this proof may result in a registration hold and/or disenrollment for students and disciplinary action for UNM employees.

Booster Requirement: Individuals who received their second dose of a Pfizer or Moderna vaccine on or before June 15, 2021, or their single dose of a Johnson & Johnson vaccine on or before October 15, 2021, must provide documentation of receipt of a booster dose no later than January 17, 2022.

Individuals who received their second dose of a Pfizer or Moderna vaccine after June 15, 2021 or who received their single dose of Johnson & Johnson after November 15, 2021 must provide documentation of receipt of a booster within four weeks of eligibility, according to the criteria provided by the FDA (6 months after completing an initial two-dose Moderna vaccine, 5 months after completing the Pfizer sequence, and 2 months after receiving a one-dose Johnson and Johnson vaccine).

International students: Consult with the [Global Education Office](#).

Exemptions: Individuals who cannot yet obtain a booster due to illness should request a [medical, religious, or online remote exemption](#) (which may have an end date) and upload this to the [vaccination verification site](#).

Medical and religious exemptions validated in Fall 2021 (see your email confirmation) are also valid for Spring 2022 unless an end date was specified in the granting of a limited medical exemption. Students must apply for a remote online exemption every semester.

UNM Requirement on Masking in Indoor Spaces



All students, staff, and instructors are required to wear face masks in indoor classes, labs, studios and meetings on UNM campuses, [see the masking requirement](#). Students who do not wear a mask indoors on UNM campuses can expect to be asked to leave the classroom and to be dropped from a class if failure to wear a mask occurs more than once in that class. Students and employees who do not wear a mask in classrooms and other indoor public spaces on UNM campuses are subject to disciplinary actions. **Medical/health grade masks are the best protection against the omicron variant and these masks should be used, rather than cloth.**

COVID-19 Symptoms and Positive Test Results

Please do not come to a UNM campus if you are experiencing symptoms of illness, or have received a positive COVID-19 test (even if you have no symptoms). Contact your instructors and let them know that you should not come to class due to symptoms or diagnosis. Students who need support addressing a health or personal event or crisis can find it at the [Lobo Respect Advocacy Center](#).

Communication on change in modality

The university may direct that classes move to remote delivery at any time to preserve the health and safety of the students, instructor and community. Please check your email and your UNM Learn site regularly for updates about our class, and please check <https://bringbackthepack.unm.edu> regularly for general UNM updates about COVID-19 and the health of our community.

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 <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 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/>



Citizenship/Immigration status