

# Syllabus

## I. General Information

Instructor:	Dr. Piotr Filipczak
Phone/Email:	505-925-8876 / <a href="mailto:pfilipczak@unm.edu">pfilipczak@unm.edu</a>
Office Hours (in-person):	Monday and Wednesday, 10:30 am to 12:00 am Tuesday and Thursday, 1:00 pm to 2:00 pm
Office Hours (online):	Tuesday and Thursday, 2:00 pm to 2:30 pm <a href="https://unm.zoom.us/j/99097010790">https://unm.zoom.us/j/99097010790</a> Meeting ID: 990 9701 0790
Office Number:	VAAS 132A
Course Section:	550
Meeting Room:	Online
Meeting Time:	Asynchronous

## II. Course Description

Prerequisite: ACT =>22 or SAT =>510 or MATH 1215 or MATH 1220 or MATH 1240 or MATH 1430 or MATH 1440 or MATH 1510 or MATH 1520 or MATH 2530.

This course covers qualitative and quantitative areas of non-organic general chemistry for non-science majors and some health professions. Students will learn and apply principles pertaining, but not limited to, atomic and molecular structure, the periodic table, acids and bases, mass relationships, and solutions. The laboratory component introduces students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.

## III. Resources

- "Chemistry, Atoms First" 2e from OpenStax (*textbook*).
- Canvas (*learning management system for communication, grades entry, resources navigation and selected assignments*).

## IV. Student Learning Outcomes

### Lecture Student Learning Outcomes:

1. Use the different systems of measurements and perform conversions within the same system of measurement and between different systems of measurements.
2. Identify elements from their name or symbol, use the periodic table to describe reactivity patterns of elements and to predict compound formation.

3. Describe the basic structure of an atom using subatomic particles, and apply these concepts to nuclear reactions.

4. Describe ion formation and the difference between covalent and ionic compounds. Name and write formulas for ionic and simple molecular compounds.

5. Write and balance chemical reactions. Use balanced reactions in stoichiometric calculations.

6. Describe the differences between the solid, liquid and gas phases. Use the gas laws in calculations, and apply these laws to everyday situations.

7. Explain different types of energy, and how is released or absorbed in a reaction.

8. Describe acid and base behavior.

9. Explain the intermolecular attractive forces that determine physical properties; apply this knowledge to qualitatively evaluate these forces and predict the physical properties that result.

### **Laboratory Student Learning Outcomes:**

1. Practice 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, 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.

4. Record quantitatively measured values to the correct number of significant figures and assign the correct units.

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. Draw appropriate conclusions based on data and analyses.

7. Present experimental results in laboratory reports of appropriate length, style and depth, or through other modes as required.

8. Determine chemical formulas and classify different types of reactions.

9. Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture course.

## V. Course Requirements

This is a 16-week, face-to-face course with the following requirements:

**Attendance:** In-person participation is required in this course. Student who missed 15% of a class time (which stands for 5 meetings) may be dropped by the instructor with a W, F or D (depending on the stage of the course). Exceptions may be made for documented medical reasons including COVID-19.

### Technology & Computer Requirements:

- Dependable computer
- Reliable internet connection
- Computer speakers
- Reliable web browser
- Microsoft Suite (PowerPoint and Word)
- Adobe Flash Player

## VI. Students Evaluation Criteria

Type of Assignment:	Points per Assignment:	Total Points in this Category:	Percentage of the Final Grade:
Homework (5x)	20 pts	100 pts	12.5%
Quizzes (5x)	20 pts	100 pts	12.5%
Lab Reports (8x)	10 pts	80 pts	10.0%
Discussions (4x)	5 pts	20 pts	2.5%
Partial Exams (3x)	100 pts	300 pts	37.5%
Final Exam (1x)	200 pts	200 pts	25.0%
<b>Total</b>	<b>NA</b>	<b>800 pts</b>	<b>100.0%</b>

- **Homework:** To be completed online via Canvas.
- **Quizzes:** To be completed online via Canvas. One lowest score will be dropped from the final grade.
- **Lab Manuals:** To be completed in person during laboratory meetings.
- **Discussions:** Administrated once per month via Canvas. All four discussions count.
- **Partial Exams:** To be completed in class on days indicated in the course schedule.
- **Final Exam:** To be completed in class during the final week of the course.
- **Extra Credit:** Practice final exam, which will be administrated online via Canvas in the second last week of the course, is the only extra credit opportunity that will contribute up to 5% of student's final grade.

**Grading scale:**

- 100 or higher: A+
- 94-99.99: A
- 90-93.99: A-
- 87-89.99: B+
- 83-86.99: B
- 80-82.99: B-
- 77-79.99: C+
- 73-76.99: C
- 70-72.99: C-
- 60-69.99: D
- below 60: F

**VII. Course Policies**

**Academic Integrity:** All homework, quizzes and exams in this course must be completed by students as their original and individual work. No group work is allowed when it comes to completing these assignments. While taking quizzes and exams, only resources listed by the instructor (such as non-graphing calculator, scratch paper, periodic table etc.) are allowed. Use of any other resources such as (but not limited to) textbooks, smartphones and other electronics are forbidden. Plagiarism or cheating is not tolerated. Any instance of this will result in a grade of zero for that assignment. For more details on academic integrity violation examples, please see the UNM Academic Dishonesty Policy: <https://policy.unm.edu/regents-policies/section-4/4-8.html>.

**Communication:** Email is the best way to contact your instructor. My typical response time is less than 24 hours during the workweek and less than 48 hours during the weekend. A summary of the most important information about the course will be posted every Monday via Canvas course shell. Small changes to the original schedule and course design are possible and will be announced by the instructor in a timely manner via Canvas or UNM-associated email.

**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](mailto: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 LGBTQ Resource 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 three-credit-hour course. Class meets for three 50-minute sessions/two 75-minute sessions of direct instruction for fifteen weeks during the Fall 2025 semester. Please plan for a minimum of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

**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. [Insert number] 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.

**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.

**Thriving and Finding Support:** Students are especially successful at UNM when they take advantage of support and get involved in campus and academic life. Your MyUNM login page provides direct links to wellbeing resources, including financial capability, mental health, food, jobs, and resource centers. 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.

## VIII. Course Schedule

Wk	Date	Topic	Assignment
1	1/19	Essential Ideas, Math and Measurements	
2	1/26	Atoms and Elements	H#1
3	2/2	Periodic Properties of Elements	Q#1
4	2/9	Electron Configurations	H#2
5	2/16	Chemical Compounds	<b>Exam #1</b>
6	2/23	Lewis Model and Molecular Geometries	Q#2
7	3/2	Types of Chemical Reactions	H#3
8	3/9	Reaction Stoichiometry	Q#3
9	3/16	Spring Break, No Activates	
10	3/23	Solutions	<b>Exam #2</b>
11	3/30	Gases	H#4
12	4/6	Thermochemistry	Q#4
13	4/13	Intermolecular Forces and Physical States	H#5
14	4/20	Acids and Bases	<b>Exam #3</b>
15	4/29	Organic Chemistry	Q#5
16	5/4	Course Review	Q#6, PFE
1	5/11	<b>In-Person Final Exam</b>	

Wk – Week of the Course, H – Homework, Q – Quiz, L – Lab, PFE – Practice Final Exam