Syllabus

I. General Information

Instructor:	Dr. Piotr Filipczak
Email:	pfilipczak@unm.edu
Phone Number:	505-925-8876
Office Number:	VAAS 132A
Office Hours:	Monday, 1:30 pm to 3:00 pm (on-campus)
	Tuesday, 11:00 am to 12:00 pm (on-campus)
	Wednesday, 10:30 am to 1:00 pm (on-campus)
	Thursday, 10:30 am to 11:30 am (off-campus via Zoom)
Course Section:	501
Meeting Room:	VAAS 128
Meeting Time:	Monday, 10:30 am to 1:15 pm

II. Course Description

Prerequisite: ACT Math =>25 or SAT Math =>570 or MATH 1220 or MATH 1230 or MATH 1240 or MATH 1430 or MATH 1440 or MATH 1510 or MATH 1520 or MATH 2530 or CHEM 1215 and CHEM 1215L.

Co-requisite: CHEM 1225.

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.

III. Resources

Canvas (*learning management system for communication, lab manuals, exams and grades entry*).

IV. Student Learning Outcomes

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.

V. Course Requirements

Attendance: This is a 100% face-to-face course. Students enrolled in the course are obligated to attend at least **85%** of meetings and complete at least **85%** of lab reports. Thus, missing **3** out of 16 on-campus meetings or not completing **3** out of 13 lab reports may result in a failing grade. Students who missed **15%** of the course will be dropped by the instructor with a W, F or D (depending on the stage of the course). **One** justified absence may be accepted by the instructor ONLY in the case of documented medical emergency, or in other special circumstances if communicated to the instructor in advance.

Compliance and Safety: Students must read, understood and obey safety rules while present in chemical laboratory. That will be documented by signing safety contract during the first on-campus meeting. Student who does not obey the safety rules and brings the risk on himself/herself and/or on colleague students, may be suspended from the class by the instructor at any time of the course with the consequent non-passing grade.

Performance: Students must collect at least 73% of the possible points in order to complete the course with a passing grade. In order to minimize the risk of receiving F or

D grades, students who collected less than 50% of the possible points by October 11th, 2020 (end of the 8th week of the course) may be dropped by the instructor with a W.

VI. Students Evaluation Criteria

Type of Assignment:	Points per Assignment:	Total Points in this Category:	Contribution to the Final Grade:
Lab Reports(6x)	10 pts	70 pts	24.00%
Research Project (1x)	40 pts	40 pts	16.00%
Midterm Exam (1x)	60 pts	60 pts	24.00%
Final Exam (1x)	90 pts	90 pts	36.00%
Total		**250 pts**	**100%**

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 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, unauthorized internet websites, personal notes 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: Instructor will do his best to follow original schedule of this course. However, because of the element of unpredictability caused by ongoing COVID-19 pandemic, some modest changes to the course design such as exact number of assignments, face-to-face meetings or other aspects of the course cannot be completely ruled out. Whenever the modification is applied, it will always be implemented to favor students' success in the course, and will be announced by the instructor as soon as possible. It is the student's responsibility, however, to pay attention to the instructor's communications, and in case of any confusion or conflict, communicate back ASAP. All information important to the course will be passed to students via Canvas: either as announcement posted in the course content, or as an email sent to all students via Canvas, or both. Thus, keep in mind to (i) log in to your Canvas account REGULARLY (at least two times per week) and (ii) remember that all email correspondence will take place via student's @unm.edu address which is associated with your Canvas account (correspondence via other email addresses is not allowed).

Disruptive Behavior: Disruptive behavior will not be tolerated and can lead to being dropped from the course at the instructor's discretion. No "guests" will be allowed unless they are explicitly invited to attend the class by the instructor.

UNM Administrative Mandate on Required Vaccinations: All students, staff, and instructors are required by UNM Administrative Mandate on Required Vaccinations to be fully vaccinated for COVID-19 as soon as possible, but no later than September 30, 2021, and must provide proof of vaccination or of a UNM validated limited exemption or exemption no later than September 30, 2021 to the UNM vaccination verification site. Students seeking medical exemption from the vaccination policy must submit a request to the UNM verification site for review by the UNM Accessibility Resource Center. Students seeking religious exemption from the vaccination policy must submit a request for reasonable accommodation to the UNM verification site for review by the Compliance, Ethics, and Equal Opportunity Office. For further information on the requirement and on limited exemptions and exemptions, see the UNM Administrative Mandate on Required Vaccinations.

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 masking requirement. Vaccinated and unvaccinated instructors teaching in classrooms must wear a mask when entering and leaving the classroom and when moving around the room. When vaccinated instructors are able to maintain at least six feet of distance, they may choose to remove their mask for the purpose of increased communication during instruction. Instructors who are not vaccinated (because of an approved medical or religious exemption), or who are not vaccinated yet, must wear their masks at all times. 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. With the exception of the limited cases described above, students and employees who do not wear a mask in classrooms and other indoor public spaces on UNM campuses are subject to disciplinary actions.

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.

Acceptable masks and mask wearing in class: A two-layer mask that covers the nose and mouth and that is cleaned regularly is acceptable, as are disposable medical masks, KN95, KF94, FFP1 and FFP2 masks. 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 university mask requirement and endangers others.

Consequences of not wearing a mask properly: 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, class will be dismissed for the day to protect others and you will be dropped from the class immediately.

The instructor will try to have a few disposable masks available in the classroom on a first-come, first-served basis.

Students with Disabilities: If you have a documented disability, the Equal Access Services office will provide me with a letter outlining your accommodations. I will then discuss the accommodations with you to determine the best learning environment. If you feel that you need accommodations, but have not documented your disability, please contact Yolanda Pino, the coordinator for Equal Access Services at 925-8910 or pinoy@unm.edu.

Equal Opportunity and Non-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. This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: https://policy.unm.edu/university-policies/2000/2740.html.

VII. Course Schedule

Week	Date	Topic
1	1/16	**Martin Luther King Jr. Day – NO CLASS**
2	1/23	Lab 1: Intermolecular Forces
3	1/30	Lab 2: Colligative Properties of Solutions
4	2/6	Lab 3: The Reaction Rate Law of Bleaching by Sodium Hypochlorite
5	2/13	Lab 4: Activation Energy Determination
6	2/20	Lab 5: Chemical Equilibrium LeChatelier's Principle
7	2/27	Midterm Review – Introduction to Research Project
8	3/6	**Midterm Exam**
9	3/12-3/19	Spring Break
10	3/20	Research Project – Part I
11	3/27	Research Project – Part II
12	4/3	Research Project – Part III
13	4/11	Lab 6: Determination of Dissociation Constant of Weak Acid
14	4/17	Lab 7: Analyzing Calcium and Magnesium Content of Solutions
15	4/24	Course Review
16	5/1	**Final Exam**