

Syllabus

I. General Information

Instructor:	Dr. Piotr Filipczak
Phone Number:	505-925-8876
Email:	pfilipczak@unm.edu
Office Hours:	Tuesday (On-Campus) and Thursday (via Zoom), 1:30 pm to 2:30 pm
Office Number:	VAAS 132A
Course Section:	503
Meeting Room:	VAAS 128
Meeting Time:	Thursday 10:30 am to 1:15 pm

II. Course Description

Prerequisite: MATH 1220 or MATH 1230 or MATH 1240 or MATH 1430 or MATH 1440 or MATH 1510 or MATH 1520 or MATH 2530.

Co-requisite: CHEM 1215.

General Chemistry I Laboratory for Science Majors is the first semester laboratory course designed to complement the theory and concepts presented in General Chemistry I 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

Instructor will provide lab manuals to students by posting the on Blackboard prior the class on the weekly basis. No purchase required.

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. 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.

V. Course Requirements

Attendance: For as long as the New Mexico state regulations in regards to ongoing COVID-19 pandemic allow, this is on-campus, face-to-face course with exception of the final week which is scheduled online. Students enrolled in the course are obligated to attend at least **85%** of meetings and complete at least **85%** of lab reports. Thus, missing **2** out of 13 on-campus meetings or not completing **2** out of 13 lab reports will 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, understand 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:	Percentage of Overall Grade:
Lab Reports(13x)	20 pts	260 pts	55.7%
Attendance (13x)	4 pts	52 pts	11.1%
Practice Final Exam (1x)	15 pts	15 pts	3.2%
Final Exam (1x)	140 pts	140 pts	30.0%
Total	NA	467 pts	100%

Note: All evaluations will be executed online either via Blackboard (*partial and the final exams*) or Mastering Chemistry (homework and quizzes).

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

VI. 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 Blackboard: either as announcement posted in the course content, or as an email sent to all students via Blackboard, or both. Thus, keep in mind to (i) log in to your Blackboard 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 Blackboard 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.

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	On-Campus Meeting Date	Topic
1	08/20/2020	Safety, Laboratory Equipment and Essential Math
2	08/27/2020	Density of Liquids and Solids
3	09/03/2020	Paper Chromatography
4	09/10/2020	Chemistry of Solutions
5	09/17/2020	Types of Chemical Reactions and Reaction Stoichiometry
6	09/24/2020	Chemical Reactions with Copper and Percent Yield Calculations
7	10/01/2020	Determination of Chromium Concentrations using Spectroscopy
8	10/08/2020	Titration and Acid-Base Neutralization Reactions
9	10/15/2020	Specific Heat of Substances
10	10/22/2020	Gas Laws
11	10/29/2020	Gas Evolution Analysis of Alka-Seltzer
12	11/05/2020	Online Review and Troubleshooting
13	11/12/2020	Characterizing Elements via Atomic Spectra Analysis
14	11/19/2020	VSEPR Theory and Molecular Geometry
15	NO MEETING	Practice Final Exam via Blackboard
FINAL WEEK	11/30/2020 -12/04/2020	Online Final Exam via Blackboard