

# Syllabus

## I. General Information

|                 |   |
|-----------------|---|
| Instructor:     | Dr. Piotr Filipczak   |
| Email:          | <a href="mailto:pfilipczak@unm.edu">pfilipczak@unm.edu</a>                            |
| Office Hours:   | Tuesday and Thursday via Zoom, 10:45 am to 11:30 am                                   |
| Course Section: | 501   |
| Meeting Time:   | Asynchronous – resources and activities published via Blackboard on the weekly basis. |

## 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

Blackboard (*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

This course is a 16-week course conducted online in the asynchronous mode with lectures, other learning resources, homework, quizzes and exams published by the instructor on the weekly basis. Online office hours which are voluntary (although encouraged) is the only synchronous activity in this class. The following course requirements are in place:

**Attendance:** Although this is an online course, participation is required and is measured by completion of online activities by the student. 14 assignments including 12 lab reports, 1 midterm exam and 1 final exam are scheduled. Students who fail to complete all assignments scheduled in two consecutive weeks of the course, or who failed to complete 15% of all assignments (which stands for 3 assignments overall despite of the category) will be dropped by the instructor with a W, F or D (depending on the stage of the course).

**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 March 14<sup>th</sup> (Spring break) may be dropped by the instructor with a W.

**Respondus Lockdown Browser:** All exams in this course will require Respondus Lockdown browser which is an electronic tool that prevents some forms of academic misconduct. Simply speaking, you will be recorded while taking exams, and this recording will be available to the instructor (and only instructor) via Blackboard. Additionally, all

other browsers on your device will be disabled for the time of the exam. It is critical that you are equipped with the device that matches technical requirements for the use of Respondus (including but not limited to recording camera), otherwise you will not be able to successfully complete the course. UNM-Valencia library has a capacity to issue compatible devices to students after they request it ahead of the time. Instruction on how to install Respondus Lockdown browser together with all the specifications of compatible electronic devices are posted in the course content via Blackboard.

## VI. Students Evaluation Criteria

| Type of Assignment: | Points per Assignment: | Total Points in this Category: | Percentage of Overall Grade: |
|---------------------|------------------------|--------------------------------|------------------------------|
| Lab Reports (12x)   | 10 pts                 | 120 pts                        | 50                           |
| Midterm Exam (1x)   | 50 pts                 | 50 pts                         | 20                           |
| Final Exam (1x)     | 70 pts                 | 70 pts                         | 30                           |
| <b>Total</b>        | <b>NA</b>              | <b>240 pts</b>                 | <b>100%</b>                  |

**Note:** All evaluations will be executed online via Blackboard. All assignments will be included into the final grade. However, student is eligible to makeup/redo one lab report.

### 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, lab reports 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 or others cannot be completely ruled out. Whenever the modification is applied, it will always be implemented to favor student's 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).

**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](mailto: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](http://oeo.unm.edu)). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>.

VIII. Course Schedule

| Week              | Date           | Topic  |
|-------------------|----------------|--|
| 1                 | 1/19-1/24      | Lab 1: Safety and Math Review  |
| 2                 | 1/25-1/31      | Lab 2: Colligative Properties of Solutions                           |
| 3                 | 2/1-2/7        | Lab 3: The Reaction Rate Law of Bleaching by Sodium Hypochlorite     |
| 4                 | 2/8-2/14       | Lab 4: Activation Energy Determination                               |
| 5                 | 2/15-2/21      | Lab 5: TBA   |
| 6                 | 2/22-2/28      | Lab 6: Chemical Equilibrium LeChatelier's Principle                  |
| 7                 | 3/1-3/8        | Lab 7: Chemical Equilibrium LeChatelier's Principle, continue        |
| 8                 | 3/9-3/13       | <u>Midterms Exam</u>   |
| 9                 | 3/14-3/21      | <b>Spring Break</b>  |
| 10                | 3/22-3/28      | Lab 8: Determination of Dissociation Constant of Weak Acid           |
| 11                | 3/29-4/5       | Lab 9: pH and Buffer Solutions                                       |
| 12                | 4/5-4/11       | Lab 10: Analyzing Calcium and Magnesium Content of Solutions         |
| 13                | 4/12-4/18      | Lab 11: Thermal Energy Associated with Physical and Chemical Changes |
| 14                | 4/19-4/25      | Lab 12: TBD  |
| 15                | 4/26-5/2       | Course Review  |
| <b>FINAL WEEK</b> | <b>5/3-5/6</b> | <b>Online Final Exam via Blackboard</b>                              |