

Fall 2020

## CHEM 125A-109: General Chemistry Lab I

Xueyan Zhang

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### Recommended Citation

Zhang, Xueyan, "CHEM 125A-109: General Chemistry Lab I" (2020). *Chemistry and Environmental Science Syllabi*. 275.

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## General Chemistry Lab I (Chem125A)

### *Fall 2020 Course Syllabus*

**NJIT Academic Integrity Code:** All Students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

The shift to remote and converged teaching due to the COVID-19 pandemic has required that both instructors and students make changes to their normal working protocols for courses. Students are asked to practice extra care and attention in regard to academic honesty, with the understanding that all cases of plagiarism, cheating, multiple submission, and unauthorized collaboration are subject to penalty. Students must properly cite and attribute all sources used for papers and assignments. Students may not collaborate on exams or assignments, directly or through virtual consultation, unless the instructor gives specific permission to do so. Posting an exam, assignment, or answers to them on an online forum (before, during, or after the due date), in addition to consulting posted materials, constitutes a violation of the university's Honesty policy. Likewise, unauthorized use of live assistance websites, including seeking "expert" help for specific questions during an exam, can be construed as a violation of the honesty policy. All students should be familiar with the [NJIT Academic Integrity Code](#).

### COURSE INFORMATION

**Course Description:** General Chemistry Lab I is a laboratory course; it is designed to be taken currently with **CHEM 125**. Instructions are in the lab manual and concepts are from the text and lecture of the **CHEM 125** courses. The experiments are designed to provide undergraduate students with practical experience and train students with laboratory techniques/equipment common to chemistry laboratories.

**Number of Credits:** 1

#### Course-Section, Instructors and Office Hours

| Course-Section | Instructor     | Email  | Office Hours                            |
|----------------|----------------|--|---|
| 001            | Meng, Xianyang | <a href="mailto:xianyang.meng@njit.edu">xianyang.meng@njit.edu</a> | Mon 2:00 PM-8:00 PM                     |
| 003            | Gu, Pin        | <a href="mailto:pin.gu@njit.edu">pin.gu@njit.edu</a>               | Monday 10am - 12pm                      |
| 005            | Wang, Zhiqian  | <a href="mailto:zhiqian.wang@njit.edu">zhiqian.wang@njit.edu</a>   | Tue 10:20 AM-12:20 PM<br>by appointment |
| 007            | Wang, Zhiqian  | <a href="mailto:zhiqian.wang@njit.edu">zhiqian.wang@njit.edu</a>   | Fri 3:20 PM-5:20 PM<br>by appointment   |
| 009            | Gu, Pin        | <a href="mailto:pin.gu@njit.edu">pin.gu@njit.edu</a>               | Tuesday 9 - 11am                        |

|     |                 |  |  |
|-----|-----------------|--|--|
| 011 | Osonga, Francis | <a href="mailto:francis.j.osonga@njit.edu">francis.j.osonga@njit.edu</a> | Wed 2.20 PM- 4.20 PM<br>by appointment   |
| 013 | Gu, Pin         | <a href="mailto:pin.gu@njit.edu">pin.gu@njit.edu</a>                     | Wednesday 9-11am   |
| 015 | Meng, Xianyang  | <a href="mailto:xianyang.meng@njit.edu">xianyang.meng@njit.edu</a>       | Mon 2:00 PM-8:00 PM  |
| 017 | Meng, Xianyang  | <a href="mailto:xianyang.meng@njit.edu">xianyang.meng@njit.edu</a>       | Mon 2:00 PM-8:00 PM  |
| 101 | Roy, Sagar      | <a href="mailto:sagar.roy@njit.edu">sagar.roy@njit.edu</a>               | - by appointment via email<br><a href="https://njit.webex.com/meet/sagar">https://njit.webex.com/meet/sagar</a><br>922 061 566 |
| 103 | Gu, Pin         | <a href="mailto:pin.gu@njit.edu">pin.gu@njit.edu</a>                     | Tuesday 11am - 1pm   |
| 105 | Gu, Pin         | <a href="mailto:pin.gu@njit.edu">pin.gu@njit.edu</a>                     | Wednesday 3-5pm  |
| 109 | Zhang, Xueyan   | <a href="mailto:xueyan.zhang@njit.edu">xueyan.zhang@njit.edu</a>         | Tuesday 2:30-4:30pm  |

### Required Textbook:

|                  |   |
|------------------|---|
| <b>Title</b>     | CHEM 125A, General Chemistry Laboratory I |
| <b>Author</b>    | R. W. Kluiber                             |
| <b>Edition</b>   | 9.1                                       |
| <b>Publisher</b> |   |
| <b>ISBN #</b>    |   |

**University-wide Withdrawal Date:** The last day to withdraw with a **W** is Monday, November 9, 2020. It will be strictly enforced.

### Learning Outcomes:

Upon completion of the course you should have a facility in accomplishing the following:

1. Understand the fundamental principles that govern reactions.
2. Improve logical reasoning ability and ability to analyze and integrate findings.
3. Become proficient in basic chemical, and physical laboratory skills.
4. Practice scientific writing by preparing laboratory reports.
5. Become familiar with the safety protocols followed in a chemistry laboratory.

### Required PPE (Personal Protective Equipment):

- Face Mask (Face coverings with exhalation valves or vents are not effective and therefore not

acceptable)

- Lab coat
- Lab book (available at NJIT Bookstore)

## **POLICIES**

**All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.**

### **Grading Policy:**

The final grade in this course will be determined as follows:

Lab Reports and Accuracy: 85%

Pre-lab Quiz: 10%

Cleanliness of lab bench and sink: 5%

### **Grading scheme:**

|           |           |          |           |
|-----------|-----------|----------|-----------|
| <b>A</b>  | 90 - 100  | <b>C</b> | 70 - 74.5 |
| <b>B+</b> | 85 - 89.5 | <b>D</b> | 55 - 69.5 |
| <b>B</b>  | 80 - 84.5 | <b>F</b> | <55       |
| <b>C+</b> | 75 - 79.5 |          |           |

### **Converged learning Policies:**

- Chem125A is offered in converged learning mode. The class will meet at the scheduled time with some students physically in the lab and others joining remotely. In order to maintain social distance, a maximum of eight students are allowed to work in the lab simultaneously. The times that students will be physically attending will be communicated to you by your lab instructor. Students have to follow a special procedure if you do not want to physically attend labs when it is your turn. If you have health related issues which prevent you from physically attending, you should notify the Office of the Dean of Students.
- Attendance is mandatory. A pre-lab lecture will be presented by the instructor in the class. Students physically attending the class will perform the experiment individually. A face covering will be required in the lab. You will NOT be allowed to enter the lab without wearing a face mask! Students joining remotely should login [njit.webex.com](http://njit.webex.com) and enter session number provided by the instructor to join the class. Online students will have the opportunity to ask questions through Webex.
- For each experiment, a demonstration video will be shared with students. Students should watch the video prior to attending the class.

- Prelab quizzes: For each experiment, students must complete a pre-lab quiz in Canvas before the class. The completed pre-lab quiz accounts for 10% of each lab grade.
- Lab Reports: A lab report will be submitted for each experiment. The report consists of the completed data sheet found in the lab materials, plus a separate page containing your calculations. Each student should submit a lab report of his/her own work. Students physically attending the lab will complete the experiment and submit the lab report to the instructor by the end of the class. Experimental data will be provided to online students via Assignments of Canvas at the beginning of the lab class. Students should complete the report, take pictures of all pages, and upload the pictures to Assignment of Canvas by the end of the lab class. **Late lab reports will not be accepted.**
- **Make-up Policy:** The last week of the semester will be reserved for students to make-up a lab which was missed. At this time, students will be permitted to make-up **one experiment only**. All make-ups will be conducted online only.
- **Cellular Phones:** All cellular phones must be switched off during all class times.

### **Safety and Clean Up Policy:**

- WEAR SAFETY GOGGLES AND FACE MASK AT ALL TIMES IN THE LABORATORY.
  - Clothing that covers your legs and shoulders are required. No shorts or short skirts.
  - Everyone will be required to wear lab coats and gloves during each experiment.
  - Closed shoes must be worn at all times. No sandals.
  - Food or drink is not allowed in the lab.
  - Turn off cell phones. Texting is not permitted in the lab.
  - Properly dispose of waste materials.
- Cleanup your workspace at the end of each lab session and wash your hands prior to leaving the laboratory. 5% PENALTY WILL BE APPLIED TO YOUR LAB REPORT SCORE FOR FAILURE TO CLEAN UP PROPERLY!

### **ADDITIONAL RESOURCES**

**Chemistry Tutoring Center:** Located in the Central King Building, Lower Level, Rm. G12. Hours of operation are Monday - Friday 10:00 am - 6:00 pm. For further information please click [here](#).

**Accommodation of Disabilities:** Office of Accessibility Resources and Services (*formerly known as Disability Support Services*) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at 973-596-5417 or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support services provided please visit the Accessibility Resources and Services (OARS) website at:

- <http://www5.njit.edu/studentssuccess/disability-support-services/>

## Laboratory Schedule

Below is a tentative weekly schedule. We will try to stick to this schedule as closely as possible. Students will be consulted with to reach an agreement on any modifications or deviations from the syllabus throughout the course of the semester.

| Week | Experiment  |
|------|---|
| 1    | Check in, Introduction, and Safety                          |
| 2    | Measuring the Density of a Solid and a Liquid               |
| 3    | Identification of a Compound by Mass Relationship           |
| 4    | Determination of a Chemical Formula                         |
| 5    | Water of Hydration  |
| 6    | Analysis of Acidic Substances by Titration                  |
| 7    | Molecular Weight of a Volatile Liquid                       |
| 8    | Calorimetry: Experiments Based on Thermodynamics            |
| 9    | A Spectroscopic Analysis for Copper                         |
| 10   | The Solvay Process  |
| 11   | Paper Chromatography  |
| 12   | Molecular Weight Determination by Freezing Point Depression |
| 13   | No class: Thanksgiving recess                               |
| 14   | Make Up (online only)                                       |

*Updated by Pin Gu - August, 2020  
Department of Chemistry & Environmental Sciences (CES)*

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*Course Syllabus, Fall 2020*