Spring 2022

CHEM 126A-004: General Chemistry Lab II

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NJIT New Jersey Institute of Technology

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE

Chem 126A-General Chemistry Lab II
Spring 2022 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.

COURSE INFORMATION

Requirements: General Chemistry Lab II is a continuation laboratory course of General Chemistry Lab I; it is designed to be taken concurrently with Chem 126 or Chem 122. Instructions are in the lab manual and concepts are from the text and lecture of the Chem 126/122 courses. The experiments are designed to provide undergraduate students with further practical experience and continue to train students with laboratory techniques/equipment common to chemistry laboratories.

Number of Credits: 1

Course-Section and Instructor

Chem 126A-004 Dr. A. Castro

Laboratory: In-person: Tiernan Hall (TIER 207) T, 10:00 a.m.-12:50 pm

Online: Laboratory sessions will happen at the scheduled in-person laboratory time, via Webex at the following address: https://njit.webex.com/join/castroa

Office: Tiernan (TIER) 110 Email: castroa@njit.edu

Office Hours: after the lab period as needed and by appointment

Required Lab Manual: Chemistry: A Molecular Approach. 5th Edition. Tro, N.J., Vincent, J.J., Livingston, E.J. Pearson Education, Inc., 2020. ISBN-13: 978-0-13-498983-9, ISBN-10: 0-13-4498983-X

University-wide Withdrawal Date: The last day to withdraw with a **W** is Monday, 4/4.

Learning Outcomes:

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

1. Demonstrate the ability to use general chemistry laboratory equipment.
2. Demonstrate the ability to follow lab manual instructions to perform chemistry experiments.
3. Demonstrate the ability to use the knowledge of General Chemistry principles to solve the problem.
4. Develop practices in recording experimental procedures and data.
5. Prepare for continued studies in chemistry and in related fields.
6. Comply with the safety protocols.

Required PPE (personal protective equipment) Materials:

-Safety goggles and face shield -Disposable nitrile gloves -Lab coat

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.

-Weekly attendance is mandatory. **A missed lab without an excused absence will result in a grade of zero (0) for that experiment. A second unexcused absence will result in a grade of zero (0) for the course.** If a student has a legitimate reason for missing a lab, the student should contact the Dean of the Students office and present written verifiable proof of the reason for missing the lab, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the instructor through the Dean of the students.

-A brief pre-lab lecture will be given by the instructor at the start of each lab. A face covering will be required in the lab. You will NOT be allowed to enter the lab without wearing a face mask! For each experiment, and if available, a demonstration video will be shared in advance. Students should watch the video prior to attending the lab.

-Students may carry out the experiments with **one** lab partner throughout the semester. However, each student must submit a separate lab report, which includes data and calculations which are their own work. Any students working in a group larger than **three** will receive a **zero** for that lab grade.

-Pre-lab assignment: For each experiment, students must complete the pre-lab before the lab period. The pre-lab should be submitted through Canvas. Pre-labs account for 20% of the total 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 if needed. For some experiments, lab reports must be submitted immediately following completion of the lab. For these experiments, late lab reports will not be accepted. For other experiments, students will be given one week to complete the lab report. Any reports submitted late will lose 10 points per day. Lab reports account for 70% of the total lab grade.

-Make-up Policy: The last week of the schedule is reserved for students to make-up an excused/missed lab. Students are allowed to make-up one experiment only.

-Cellular Phones: All cellular phones must be switched off during the lab period.

-All email communication should be done using the "njit.edu" domain.

-Shorts, short skirts, sleeveless shirts, midriff tops, and sandals are not allowed in lab.

-Food and beverages are not to be brought to the laboratory.

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

-Laboratory work: 10% total as follows:

2% each: punctuality, performance, lab technique, lab maintenance and safety procedures.

-Pre-labs: 20%

-Lab Reports and accuracy of the results: 70%

Your final letter grade in this course will be based on the following tentative curve:

A	100-90%	**C**	74-70%
B+	89-85%	**D**	69-65%
B	84-80%	**F**	Below 65%
C+	79-75%		

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.

Accommodation of Disabilities: **O**ffice of **A**ccessibility **R**esources and **S**ervices (***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. 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:

- https://www.njit.edu/studentsuccess/accessibility

Important dates: https://www5.njit.edu/registrar/spring-2022-academic-calendar/

Laboratory Schedule

Below is a tentative weekly schedule. Students will be notified via email of any changes.

Week	Experiment
1 (1/18)	Check in, Introduction, and Safety
2 (1/25)	Activation Energy Determination (Experiment 19C)
3 (2/1)	Kinetics Lab (Handout)
4 (2/8)	Equilibrium Constant and Le Chatelier's Principle (Experiment 20)
5 (2/15)	Absorption Spectrum and Beer's Law (Handout)
6 (2/22)	Acid and Base Titration (Experiment 22)
7 (3/1)	Determining the Buffer Capacity of Antacids (Experiment 23)
8 (3/8)	Entropy: The Chelate Effect (Experiment 24)
9 (3/15)	No Lab: Spring recess
10 (3/22)	Group I Cations (Experiment 27A)
11 (3/29)	Group IV Cations (Experiment 27D)
12 (4/5)	Anions (Experiment 27E)
13 (4/12)	Esters (Experiment 28)
14 (4/19)	Make-up (online only)