New York University

CHEM-UA120 Laboratory for Introduction to Modern Chemistry Spring 2022

Instructor Information

- **Zhihua An**, Clinical Associate Professor
- **Office hours:** Tu, Th 2:00 pm - 3:00 pm EDT; Zoom meeting ID: 972 9029 7735
- **Email**: za6@nyu.edu

Course Schedule

Date	Exp. #	Title	Reading
Jan 28, F	1	Check-in and Safety in the Chemistry Laboratory	ACS safety in academic chemistry laboratories ACS safety video
Feb 4, F	2	Basic Laboratory Techniques	Lab 2 handouts
Feb 11, F	3	Atomic Fingerprints	Lab 3 handouts
Feb 18, F	4	Identifying Cations in Solution	Lab 4 handouts
Feb 25, F		Midterm 1 Review	
Mar 4, F	5	Energy and States of Matter	Lab 5 handouts
Mar 11, F	6	Energy and Calorimetry	Lab 6 handouts
Mar 25, F	7	Solubility of A Salt	Lab 7 handouts
Apr 1, F	8	Chemical Reactions and Equations	Lab 8 handouts
Apr 8, F		Midterm 2 Review	
Apr 15, F	9	Rates of Chemical Reactions- Iodine Clock Reaction	Lab 9 handouts
Apr 22, F	10	Acid-Base Titration	Lab 10 handouts
Apr 29, F		Check-out	
May 10, F		Final Review	

Course Description

Welcome to the laboratory course of Introduction to Modern Chemistry! The objective of this course is to become proficient in lab techniques used by chemists, to carry out experiments, to obtain and analyze data correctly. You will learn the basic techniques and skills in modern chemistry, such as spectroscopy, measure solubility of a salt, identifying cations and anions in solution, calorimetry, titration, iodine clock reaction to study kinetics of chemical reaction, and so on. Many of the experiments are scheduled to follow the topics of the lecture portion of the course. Try to see the connections between the two. Lab work will help you to understand the material covered by the lecture.

Course Materials

(1) Laboratory Manual

The lab handout will be posted on the NYU Brightspace/laboratories folder a few days prior to the start of the lab.

(2) Personal protective equipment (PPE)

The following PPEs are required and can be purchased in the Chemistry Stockroom located in Brown, room 151 using NYU campus cash only. Do not purchase them from other places because they may not fulfil the requirement.

- One pack of 12 disposable lab coats ($18)
- Safety goggles with indirect ventilation ($5.50 for regular, $13.70 for anti-fog.)
- One box of disposable nitrile gloves ($11)

Students need to wear a face mask at all time in lab following NYU masks guideline.

Resources

All other course materials (announcements, pre-lab quizzes, videos, links etc.) will be posted on NYU Brightspace) under **Introduction to Modern Chemistry, 2022 Spring Section 001/Laboratories**. NYU Brightspace can be accessed using the **ACADEMICS TAB** on your NYU Home page.

Course Requirements

a. Pre-Lab Assignments

(1) ***Read the experiment handouts*** and ***prepare for the lab.*** You need to study the lab handouts for the coming experiment. Make sure you extract the following information from the handouts: (1) the background information and the goal of the experiment, (2) the procedure of the experiment, (3) the relative calculations you need to know and (4) the techniques of the experiment and the other materials you need to prepare for the coming lab.

(2) ***Take the Pre-Lab quiz*** on NYU Brightspace. The pre-lab quiz questions are based on the background Information, lab procedures, and the relative calculation skills. The pre-lab quizzes are available to you on NYU Brightspace on every Wednesday morning at 9:00 am and due at 9:00 am on Friday. You will have 2 hours to complete it once you started (if you start after 7:00 am on Friday, you will have less time to finish it). It cannot be paused once you have begun. You will have only one submission for each quiz, so be prepared before starting.

b. In-Lab Tasks

(1) ***Perform the experiment, record, and analyze data.*** Each student will be paired up with another student to work in lab.

(2) ***Answer post-lab questions***. You need to answer post-lab questions after you have done the experiment. You can discuss the post-lab question with your lab partner. Each student will need to submit lab report including the data sheet and the post-lab questions as single pdf file to Gradescope (The Gradescope student guide is posted on NYU Brightspace/laboratories/course organization). The lab report is due in 24 hours that the experiment starts, late submission won't be accepted.

Grade Components

Each experiment is graded out of 100 points. Each pre-lab quiz counts for 20 points, the data sheet accounts for 50 points and the post-lab questions is for 30 points. Your lab grade will be incorporated into your final course grade, and it will be worth 30% towards the final course grade (please see the syllabus for lecture).

Lab grade	Pre-lab quiz	20 points
	Data sheet	50 points
	Post-lab questions	30 points
	Total	100 points

Lab Instructors

The laboratory course is divided into three sections which is staffed by three talented and dedicated graduate students, who will be a valuable resource for you during the semester as well as your primary instructor. These lab section instructors will be there through the whole lab session to guide you and help you with the experiments. They will be available during scheduled office hours as well.

Section	Time (Friday)	Instructor	Office hours	Email
201	2:15 -4:30 pm	Galit Ashkenazi	T: 11: am – 12:00 pm	ga2238@nyu.edu
202	2:15 -4:30 pm	Asit Pal	M: 2:00 pm – 3:00 pm	ap6603@nyu.edu
203	2:15 -4:30 pm	Alan Robledo	W: 3:00 pm – 4:00 pm	ar6138@nyu.edu

Course Policies

- **Basic Laboratory Rules**

1) Laboratory Safety

SAFETY IS OF PARAMOUNT IMPORTANCE IN THE LABORATORY. If you do not follow the safety rules presented to you, you will be removed from the lab and you will lose credit for the experiment.

a. Proper Lab Attire is required!!! everyone will be required to wear PPEs and face mask during each experiment.

b. Clothing that covers your legs and shoulders are required for this course. This does not include stockings or ripped jeans. No shorts or short skirts; No exposed bellies. Closed shoes must be worn at all times. No ballet flats, flip flops, or open shoes of any kind are permitted. In other words, minimal skin should be showing from the waist down. If you come to lab improperly dressed, you will be sent home.

c. Please silence your cell phones while in the lab. Receiving calls or texting is not permitted.

d. Personal computer or devices are also not permitted.
e. Food or water is not allowed in the lab. Gum chewing is not permitted.
f. **IF YOU DO ANY UNAUTHORIZED EXPERIMENTATION, YOU WILL FAIL THE COURSE!!!**

2) Lockers
Personal belongings are not permitted in the lab. Coats, book bags, purses, etc., will have to be placed in a hall locker. These lockers are located on the 4th floor of the Silver building. Here is the instruction of using these lockers:
a. Go to any locker on the 4th floor.
b. Place your items inside and close the door.
c. On the keypad press **C,** then **any 4-digits combination you will remember**, then the **key (lock button)**. The lock will engage. I suggest you take a picture of your locker as a record.
d. To open the locker, simply repeat the earlier steps – Press **C,** then **the same 4 number combination that you entered earlier, followed by the key (lock button)**. The lock will release. After you have removed your items, please leave the locker as it is, you do not need to re-engage the lock.
e. Please note that once the lock engages it will only remain locked for 5 hours. You must return as soon as possible following your lab and reclaim your belongings. *After 5 hours have passed, the lock will disengage automatically, and the contents will be accessible to anyone.*
f. **Items left in a locker past their removal time are subject to removal and disposal.**
g. If your locker does not open, the stockroom staff will be able to help you open your locker if you can prove it's your locker (take a picture).

3) Waste Minimization
To minimize costs and reduce any environmental damage, we need to avoid wasting laboratory materials and to dispose of all chemicals and other materials properly. You must observe the following rules in the lab:
a. When you obtain a reagent for use in an experiment, read the label on the bottle; make sure that the substance name, its chemical formula, and its concentration match those specified in the directions for the experiment.
b. Take only the amount that you need, and **DO NOT RETURN** any reagent to the bottle.
c. Dispose of all materials into the proper waste container (again, read the labels). **NOTHING WILL GO INTO THE SINKS. DISPOSABLE PIPETS**, **BROKEN GLASS and GLOVES** must be disposed of in the "Broken Glass" container (not the regular trash). Liquid chemical waste from the experiments is disposed of in the designated waste containers in the lab.

- **<u>Attendance and Tardiness</u>**

THERE WILL BE NO MAKEUP LABS. If you are feeling sick or having symptoms of COVID-19, please do not come to class and report your symptoms to the NYU COVID-19 Prevention and Response Team. If you have to miss a lab due to sickness or religious observance, You need to inform Prof. An under these circumstances. So, we can provide further guidance and support for you to catch up with the missed material once you are recovered and get back from the religious observance. Do not consider this policy as a free pass to miss labs for trivial reasons, missing lab experience is unlikely to have a positive impact on your course grade because the labs are designed to help you understand the course content, not mention that the lab content will be tested on exams.

- **Academic Honesty/Plagiarism**

  If you are caught cheating/plagiarizing in this course, you will receive a grade of F and your actions will be reported to the Dean of your school. You can destroy your entire career in an attempt to score a few extra points. Think about that. It isn't worth it. Cheating includes using any unauthorized written material during a quiz or exam, talking to anyone other than an instructor during a quiz or exam, copying work from another student (or allowing another student to copy from you), and anything else that would give you an unfair advantage over other members of the class.

- **Disability Disclosure Statement**

  Academic accommodations are available for students with disabilities. Please contact the Moses Center for Students with Disabilities (212-998-4980 or mosescsd@nyu.edu) for further information. Students who are requesting academic accommodations are advised to reach out to the Moses Center as early as possible in the semester for assistance.

- **Masks Are Required in Lab**

  A surgical mask (3-ply mask) or a KN95, KN94 or N95 mask is recommended to wear in lab following NYU mask guideline. You may wear a surgical mask underneath a cloth mask. Masks must completely cover your nose and mouth, fit snugly against the sides of your face without gaps. Press the nose wire from the middle to the side to close the leaks between mask and face. If your goggles fog up, you can use cloth tape to close the leaks and apply anti-fog wipes to the goggles, which will be provided in the lab. Ask your instructor how to use the cloth tape.