

# CHEMISTRY 1220 LAB – SPRING 2023

## General Chemistry II Lab Syllabus

### INTRODUCTION

| Instructional Team     |   |
|------------------------|---|
| Lab Supervisors:       | <a href="#">Dr. Bernice Opoku-Agyeman</a><br><a href="#">Dr. Camila Fontes Neves da Silva</a> |
| Lecturer:              | (Varies with lecture section)   |
| Course Coordinator:    | <a href="#">Jennifer Stebick</a>  |
| Office & SLDS Contact: | <a href="#">Holly Wheaton</a>   |
| TA:                    | (Varies with recitation/lab section)  |

Please see the “Contacts” page in Carmen for information on your instructors and who to contact for your unique needs.

Lab Supervisor  
Email: [chem1220labsupervisor@osu.edu](mailto:chem1220labsupervisor@osu.edu)

Lab Supervisor  
Office Hours: Mondays 2-3 PM, Tuesdays 10-11 AM, Thursdays 2:30-3:30 PM  
Note: Lab Supervisor office hours are on Zoom ([go.osu.edu/labsupoh](https://go.osu.edu/labsupoh)). The link is also available on Carmen. In-person office hours are available upon request.

TA Office Hours: Information regarding your TA’s office hours may be found on Carmen. They will reach out during the first week of class to communicate their office hours.

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**Welcome to CHEM 1220 Lab!** We are excited to explore General Chemistry concepts and laboratory skills with you this semester. Our goal is that you leave this course with an appreciation of how chemistry impacts your everyday lives. We also want to provide you with laboratory skills in chemistry that will facilitate your success in future science courses and careers.

This syllabus outlines the resources, policies, and procedures that will ensure your success in the General Chemistry lab. Please familiarize yourself with this syllabus and keep it in a convenient place for reference throughout the semester (buckle up—it’s a big course, so it’s got a big syllabus). You may find it helpful to download the syllabus on the Notability iPad app (or a similar app) to make personal notes on it. If you have questions or concerns about the syllabus itself, please contact the lab supervisors at the email address listed at the top of this syllabus.

### REQUIRED MATERIALS

**TEXTBOOK:** The textbook for the lecture is *Chemistry: The Central Science*, 15<sup>th</sup> edition, by Brown, LeMay, Bursten, Murphy, Woodward, & Stoltzfus. Refer to the lecture syllabus for information on other required lecture materials.

**LAB MANUAL:** You will be using *Chemistry 1220 General Chemistry Laboratory Manual*. Hayden-McNeil Publishing, Inc. New 2022-2023 e-book Edition. **Students are required to purchase access to the current version of the lab manual through the Achieve website or the University Bookstore.**



**ACHIEVE WEBSITE:** Access to the laboratory manual e-book can be purchased at the following link: <https://achieve.macmillanlearning.com/>. You are not able to sign up on the Achieve website before January 7<sup>th</sup>. A 14-day free trial may be used. After the 14-day trial period is up, you must purchase a code from the bookstore or purchase access with a credit or debit card on the site to continue using the platform. Please use your official OSU email when creating your Achieve account. Your purchase of the lab manual also includes access to Smart Worksheets that are used with some experiments to grade your data and calculations (SOL, FPD, BAR, CLK, SST, WST, and VOL).

When registering on the Achieve website, be sure you are in the correct lab section. You will need a Course ID for your specific lab section to ensure you enroll in the correct section. Consult the *Chemistry 1110 Achieve Course (Lab Manual & SmartWorksheets)* page in the Laboratory page of your Carmen course for the list of Course IDs. If you enrolled in a different lab section, be sure to switch to the correct lab section by Sunday January 22<sup>nd</sup>. Instructions of how to switch section can be found via this link: [Achieve > Switch courses if you enrolled in the wrong course \(site.com\)](#). To ensure fairness, students who do not appear in their lab section in the Achieve course by January 22<sup>nd</sup> will not receive credit for any Smart Worksheet assignments they complete in the incorrect section even if they switch to their section later on during the semester

This semester, we will provide you with a bound paper copy of the lab manual. If you are *re-taking* this class and have already purchased access to the lab manual and Smart Worksheets for a previous semester, please reach out to the Lab Supervisors via email to be added to this semester's class before **January 22<sup>nd</sup>**. Please be sure to provide the following information in your email: First and last name, email address used on HM account, current lecturer's name, and your 5-digit lab section number.

All worksheets and the electronic version of your lab manual can be accessed at <https://achieve.macmillanlearning.com/courses>. A link to the Achieve website can also be found on Carmen.

**LAB NOTEBOOK:** Students may use Notability (or a similar app) on an iPad (University-owned recommended) or a paper notebook. See page 6 for more information about lab notebooks for this semester.

**REQUIRED SOFTWARE:** Microsoft Office Suite (specifically Word and Excel). All Ohio State students are eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. See [office365.osu.edu](https://office365.osu.edu) for more information.

## GENERAL COURSE INFORMATION

### WILL YOU MISS MORE THAN ONE LAB?

If you know you will miss more than one in-person laboratory period (for OSU athletic competitions, military training/duties, religious observances, etc.), you are responsible for **contacting the general chemistry office** ([genchem@osu.edu](mailto:genchem@osu.edu)) during the first week in order to move to a laboratory section that minimizes scheduling conflicts, space permitting. Unfortunately, we cannot accommodate more than one lab absence, so we strongly encourage you to plan ahead.

**CARMEN:** Carmen is the central hub where the course is conducted. You will find important resources and information such as announcements, overview pages for each experiment, and lab assignments on Carmen. To ensure that you have successful lab experience, we encourage students to carefully read the syllabus to become familiar with the course content, procedures, and grading policies. Please note that information presented in the syllabus, overview pages, and announcements on Carmen supersede any other source and are the most reliable resources to keep you on track to successfully complete your lab-related tasks and assignments.

**LAB TEAM COMMUNICATION:** The Lab Supervisors will be posting "Announcements" in your Carmen course that outline experiment tips, preparation instructions, and important details. Go to the Announcements area in the Carmen navigation bar to see all of these messages. They are never deleted and are searchable. You can also set Carmen to send you an email every time an announcement is posted; explicit instructions on how to do so are at the following web address: [www.go.osu.edu/notificationsettings](http://www.go.osu.edu/notificationsettings). We highly encourage students to regularly read announcements posted by the Lab Supervisors on Carmen.

The lab supervisors are here to support you on your chemistry journey, so please reach out to us with your questions and concerns about lab. If you have a question about a policy, procedure, or need clarification, please email the Lab Supervisors at [chem1220labsupervisor@osu.edu](mailto:chem1220labsupervisor@osu.edu). You will not receive a response if your message is sent to an



incorrect email address or via the Carmen Inbox system. You must use your OSU email account when emailing the Lab Supervisors. Be sure to include the following information in your email to help the Lab Supervisors get back to you faster:

- Your TA's name
- Your Lecturer's name
- The day and time of your lab
- 5-digit lab section number

Please note that emails sent over the weekend, or a holiday may not be answered until after the weekend/ break.

**ZOOM OFFICE HOURS:** This semester, the lab supervisors will have their office hours on Zoom. You can click on the link to the right ([go.osu.edu/labsupoh](https://go.osu.edu/labsupoh)), or simply type it into your web browser.

**ZOOM MEETINGS:** The last lab of the semester, experiment VOL, will be online via Zoom during your regularly scheduled lab time. Please see the Laboratory Activity Schedule and Laboratory Assignment Type sections below for more information.

To ensure we cultivate a safe and comfortable online learning environment, we encourage all of us to be professional, respectful, and focused when joining office hours on Zoom or attending online discussion for the class. Please be mindful of others while online. Links and information posted in the chat window are only available to students who are present at the time the links are posted. Please make sure your first and last name are displayed during any online interactions and online office hours.

**OVERVIEW PAGES:** This is where to start for every lab! For each experiment, there is an Overview page in the Lab Modules section of Carmen. The Overview pages contain helpful information, experiment videos, and required assignments for each experiment.

## MANDATORY QUIZZES

Introductory assignments do not contribute to your course grade but must be completed with a 100% score to pass this course.

The **Academic Misconduct Quiz** not only confirms your enrollment in the course, but also teaches you about academic integrity, which we take very seriously. Therefore, please complete this quiz by **11:59 pm, Sunday, January 15<sup>th</sup>**. Please note that if you do not receive a 100% on this quiz by the due date, **you will be assigned an "E" as your final course grade**. You may take the quiz as many times as you need to receive 100% and your score will be recorded in the Grades section of Carmen. Also, you may take this quiz online from any location (does not need to be completed while physically present for class). Please reach out to the **general chemistry office** ([genchem@osu.edu](mailto:genchem@osu.edu)) if you have any concerns about this policy.

In addition to the Academic Misconduct Quiz, you are required to complete the following assignments before you can participate in laboratory activities. Please check Carmen for the specific due dates of these assignments. You should complete these assignments in the order listed below.

1. **Lab Safety Statement:** A score of 100% on this assignment unlocks the *Safety and Lab Policies Quiz*. Be sure to complete this assignment before your first in-person lab session.
2. **Safety and Lab Policies Quiz:** A score of 100% unlocks the remainder of the lab module. Please bear in mind that any assignment you miss as a result of failing to complete this assignment will not be reopened. You can only access the *Safety and Lab Policies quiz* after completing the *Lab Safety Statement*.

Completing the assignments above before your first your first lab section should prepare you well for the lab. Please note that any lab assignments you miss because you failed to complete the Introductory quizzes will not be re-opened for you.



## DISABILITY SERVICES (SLDS)

The university strives to make all learning experiences as accessible as possible. Students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let the Lab Supervisor know immediately so that we can privately discuss options. To establish reasonable accommodation, the Lab Supervisor may request that you register with Student Life Disability Services. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

If you are a student with SLDS accommodation or who require accommodation, we've provided information in the Disability Services Resources Module in your Carmen course. You will find information on how the accommodation is applied to the different aspects of your General Chemistry course such as lab assignments, lecture, exams, online homework, and recitations. We therefore strongly encourage you to familiarize yourself with this resource in your Carmen course.

## EXPECTED LEARNING OUTCOMES

In Chemistry 1220 lab is a significant aspect of your chemistry learning experience in CHEM 1220, and the following are the goals and learning outcomes you will accomplish in the lab:

- Qualitatively and quantitatively examine curriculum presented in lecture, such as atomic and molecular structure, chemical reactivity, thermochemistry, and chemical calculations in an active laboratory setting.
- Practice laboratory methods applicable to chemists of all levels.
- Create, and demonstrate the proper use of, a well-prepared laboratory notebook and evaluate the importance of organized scientific data collection and data integrity.
- Demonstrate the ability to interpret data, evaluate conclusions supported and not supported by experimental results, and compare and contrast chemical methods, as communicated through Post-Labs.
- Demonstrate the safe handling and proper disposal techniques for all materials used in the lab.

## LABORATORY SCHEDULE

Your laboratory consists of one 2 hour and 55-minute session each week. All students will work in the laboratory only during their scheduled laboratory period. Students will only work on the experiment listed on the syllabus for that day. The lab schedule on the next page shows the experiment you will be completing each week in lab.

If you are unable to finish a laboratory experiment during the designated time, please contact the Lab Supervisor, via email, within **24 hours of the lab start time** so we can discuss the lab make-up process and procedures. Please, read details about the supplementary data and make-up policies on pages 8.

### Laboratory Schedule

| 1220 Laboratory Activity Schedule |                      |         |           |          |        |
|-----------------------------------|----------------------|---------|-----------|----------|--------|
| Week of                           | Monday               | Tuesday | Wednesday | Thursday | Friday |
| Jan 9 – 13                        | X                    | X       | X         | X        | X      |
| Jan 16 – 20                       | MLK Day <sup>†</sup> | VRM     | VRM       | VRM      | VRM    |
| Jan 23 – 27                       | VRM                  | SOL     | SOL       | SOL      | SOL    |
| Jan 30 – Feb 3                    | SOL                  | FPD     | FPD       | FPD      | FPD    |
| Feb 6 – 10                        | FPD                  | X       | X         | X        | X      |
| Feb 13 – 17                       | BAR                  | BAR     | BAR       | BAR      | BAR    |
| Feb 20 – 24                       | CLK                  | CLK     | CLK       | CLK      | CLK    |
| Feb 27 – Mar 3                    | LCP                  | LCP     | LCP       | LCP      | LCP    |



|             |              |             |             |            |            |
|-------------|--------------|-------------|-------------|------------|------------|
| Mar 6 – 10  | SAL          | SAL         | SAL         | SAL        | SAL        |
| Mar 13 – 17 | Spring Break |             |             |            |            |
| Mar 20 – 24 | SST          | SST         | SST         | SST        | SST        |
| Mar 27 – 31 | WST          | WST         | WST         | WST        | WST        |
| Apr 3 – 7   | BLP          | BLP         | BLP         | BLP        | BLP        |
| Apr 10 – 14 | VOL Online   | VOL Online  | VOL Online  | VOL Online | VOL Online |
| Apr 17 – 21 | X            | X           | X           | X          | X          |
| Apr 24 – 28 | X            | Reading Day | Final Exams |            |            |

X = Labs will be cancelled

<sup>†</sup> = University Holiday. Due dates for lab assignments that fall on University Holidays will be extended

Due to the Celeste renovation, experiment VOL will be completed digitally and will have an online discussion on Zoom during your regularly scheduled lab time. A link to the Zoom session will be available in the Zoom area of your Carmen course. To earn any credit for the VOL Post-Lab, you must attend the entirety of the online discussion on Zoom.

## PREPARING FOR FIRST DAY OF IN-PERSON LAB

**PROPER LABORATORY ATTIRE:** The clothing you wear to lab must provide skin protection from chemical spills and splashes. **Ankles and feet must be completely covered.** Please refer to the LABORATORY SAFETY REQUIREMENTS on page 9 for a more detailed discussion.

**LAB COATS:** Each student is required to purchase a department-approved lab coat from the Chemistry store to wear during General Chemistry labs. This lab coat has been specially selected to protect you from the hazards in the lab. Please come prepared with a lab coat for your first in-person lab, otherwise you will unfortunately be sent home from lab. Therefore, please give yourself plenty of time to purchase a lab coat before your first lab session.

**Lab Coat Purchase:** The Chemistry Store (<https://u.osu.edu/chems/>) is located in 180 Celeste Lab and is open Monday-Friday from 7:45 am – 4:00 pm (hours may vary). The Chemistry Store is a university-run store and is not affiliated with the Department of Chemistry and Biochemistry. Their hours vary during the semester. Credit cards, Apple Pay and Buck-ID are currently the only accepted methods of payment at the Chemistry Store. You must have your lab coat by your first in-person lab session. **The lab coat sold in the Chemistry Store is the ONLY acceptable model.** When you purchase your lab coat at the Chemistry Store, you will be provided with a plastic zip-top bag for storage and a lab coat care sheet. If you are re-taking General Chemistry, you will be provided a bag in your first lab session.

You will keep your lab coat and goggles between lab sessions. Your TA will walk you through the lab coat protocol during your first laboratory session. At the end of the course, you will keep your lab coat for future lab experiences.

**Lab Coat Etiquette:** Lab coats should be fully buttoned up when in the laboratory. We are not able to loan lab coats to students if you forget your own lab coat. You should remove your lab coat before heading home, or to the bathroom or drinking fountain. You may wear your lab coat when obtaining items from the stockroom window. You are not permitted to sit on the benches in the hallway while wearing your lab coat. Never wear your lab coat at home. Always treat your lab coat as if it is contaminated.

**GOGGLES:** Students who are new to the Columbus OSU campus will be provided goggles for use in the General Chemistry laboratory during their first in-person lab session. If you previously took General Chemistry, you may use the goggles previously given to you or purchase a new pair from the Chemistry Store.

## LABORATORY ASSIGNMENTS & GRADING

**LAB POINT DISTRIBUTION:** The laboratory component of CHEM 1220 is worth 20% of your overall course grade. Therefore, your total points earned (out of the total 1100) will be scaled to contribute this percentage to your overall course grade. For more information, see your lecture syllabus or Carmen gradebook. To ensure you develop the necessary skills and competencies critical for your success in chemistry, **you will need to earn 50% of the total**





**lab points (550/1100) to pass the course.** Regardless of your grades in lecture, if you do not meet this minimum, unfortunately you will be assigned an “E” grade in CHEM 1220.

### Point Distribution for Each Lab

| Abbreviation              | Activity   | Pre-Lab | Post-Lab | Smart Worksheet | Total       |
|---------------------------|--|---------|----------|-----------------|-------------|
| –                         | Introduction to Smart Worksheets                             | –       | –        | –               | <b>10</b>   |
| <b>Check-In</b>           | Introduction to the General Chemistry Laboratory             | –       | –        | –               | <b>60</b>   |
| <b>SOL*</b>               | An Exploration of Factors Affecting Solubility               | 15      | 50       | 35              | <b>100</b>  |
| <b>FPD*</b>               | Quantifying Freezing Point Depression                        | 15      | 60       | 25              | <b>100</b>  |
| <b>BAR*</b>               | Determining the Kinetics for the Bleaching of Allura Red Dye | 15      | 55       | 30              | <b>100</b>  |
| <b>CLK*</b>               | Exploring the Effect of Temperature on Reaction Rate         | 15      | 55       | 30              | <b>100</b>  |
| <b>LCP</b>                | Le Châtelier’s Principle                                     | 15      | 85       | –               | <b>100</b>  |
| <b>SAL</b>                | Investigation of the Acid-Base Properties of Salt Solutions  | 15      | 85       | –               | <b>100</b>  |
| <b>SST*</b>               | Strong Acid and Strong Base Titration                        | 15      | 10       | 75              | <b>100</b>  |
| <b>WST*</b>               | Weak Acid and Strong Base Titration                          | 15      | 10       | 75              | <b>100</b>  |
| <b>VOL*†</b>              | An Exploration of Voltaic and electrolytic Cells             | 15      | 50       | 35              | <b>100</b>  |
| <b>BLP</b>                | Lab Practical  | –       | 100      | –               | <b>100</b>  |
| -                         | End of Semester Survey                                       | –       | –        | –               | <b>30</b>   |
| <b>Overall Lab Total:</b> |  |         |          |                 | <b>1100</b> |

\*This experiment has a Smart Worksheet; the score is entered into the Smart Worksheet assignment in Carmen.

†This experiment is fully digital with an online discussion

**GRADING REVIEW REQUESTS:** We are happy to review the grading of your lab assignments, if necessary. However, please note that all requests for re-grading (Pre-Labs, Post-Labs, etc.) should be made within **1 week** of receipt of the graded work. You are required to discuss the grade with your TA first before contacting the lab supervisors to request for re-grade. After receiving your request via email, the lab supervisors will first discuss the grading process with your TA and then one of the Lab supervisors will re-grade the entire assignment. This revised grade will then be final.

**DATA INTEGRITY:** Data integrity is critical to your success in chemistry. Thus, it is important to remember that data and procedural information in your lab notebook cannot be altered in any way after you have left the lab. The data and written procedures recorded in your Post-Lab or Smart Worksheet (see below) should match the data and procedures in your lab notebook, so we encourage students to be careful when copying procedure or data from your notebook to your Post-Lab or Smart Worksheet. Changing data or adding detail to a written procedure in a Post-Lab or Smart Worksheet is considered data fabrication. Common examples of data fabrication include adding zeros to values, changing exact values or observations, or adding details to procedures. For more information, review the “A Note About Data Integrity” page on Carmen and the “Standards of Academic Conduct in General Chemistry” below.

**LATE SUBMISSIONS:** All assignments are due by the date and time listed on Carmen. Considering students may encounter unexpected circumstances that may prevent them from submitting assignments on time, a 48-hour grace period will be implemented for Post-Labs & Smart Worksheets. To be clear, the due dates for these assignments have not been extended; Carmen has been programmed to continue accepting Post-Lab submissions for 48 hours after the due date. Students are strongly encouraged to work ahead on the Post-Labs and Smart Worksheets so they can contact the lab supervisors before the due date if they encounter issues while working on the assignments. This ensures that there is enough time to provide any assistance needed. Please note that the lab supervisors will not be able to help if a student contacts them once the due date of the assignment has passed and the 48-hour grace period has begun. Submissions will not be accepted 48 hours after the due date. The timestamp on your submission in Carmen is the official submission time and date. Even if 48 hours have not elapsed, *Post-Labs and notebook uploads will not be accepted after 11:59 PM on Friday, April 21<sup>st</sup>, 2023.* Again, the 48-hour grace period does not apply to Pre-Labs and lab notebook uploads.



## LABORATORY ASSIGNMENT TYPES

There are different ways lab supervisors will use to provide information about each lab assignment. The information may be provided in this lab syllabus, via email, or on Carmen. On Carmen, this can include posted announcements, the overview page in your laboratory module for each experiment, the instruction box for each assignment, and in some cases, information embedded in the question itself.

**PRE-LAB ASSIGNMENTS:** To ensure that you are well-prepared to conduct experiments each week, Pre-Labs need to be completed before the due date on Carmen. We highly encourage you to read all Pre-Lab instructions carefully before you start the assignment. Students will receive 2 attempts on each; Unfortunately, no credit (0) will be given if the Pre-Lab assignment is late. **The 48-hour grace period does not apply to Pre-Labs.** Please note that students cannot be excused from Pre-Labs of experiments that have been assigned to them.

**LABORATORY NOTEBOOK:** The laboratory notebook is a permanent record of purpose, procedures, observations, data, and conclusions. As one of our Learning Outcomes, it is important to learn how to create and keep a lab notebook as a General Chemistry student and scientist. This semester students may use the Notability app (or similar) on an iPad or a physical notebook that has lines or grids. Please note that laptops cannot be used as lab notebooks. Please also note that no information can be recorded on scratch paper or in the lab manual during an in-person laboratory session. It is critical to ensure that all information recorded in a lab notebook is not altered in any way after leaving the lab.

To ensure a productive in-person lab experience, your notebook should be prepared before the beginning of lab, and you will earn up to 5 points for a well-prepared notebook that has all components (purpose, all procedure and data) present. During grading, your TA will assess your notebook prep and its contents and then assign you notebook points. Please note that points will be deducted for missing components. Having a fully prepared notebook will ensure you understand lab procedures, what data is to be collected in lab, and any relevant safety concerns. When preparing your notebook, please manually make your own tables to record data. Please note that screen shots of your lab manual pages will not count as your procedure or tables for recording data, and your notebook will earn 0 points if they are included.

There are some experiments that require you to complete some in-lab activities in addition to collecting data prior to leaving lab. These activities have been designed to provide some conceptual insight into what the experiment is about and to encourage discussions among students and with the lab TA. Please note that points may be deducted from your notebook score and lab performance points if you are unable to complete these lab activities due to tardiness or lateness. You can read more about lab performance points below.

ALL entries in your lab notebook should be recorded in **Blue or Black** when using either a digital or physical notebook. Lab notebook guidelines are described in the 'Guide for Success in the General Chemistry Laboratory' section of your laboratory manual (beginning on page xiii). To protect your iPad from chemical contamination, students should place their iPad in a plastic bag during lab. You will be provided with one bag at the beginning of the semester. Please do not discard this bag since a replacement bag will not be provided.

For all in-person labs, a digital copy of your filled-in lab notebook should be submitted to Carmen within 48 hours **after** the start time of your in-person lab. You can submit your digital copy in one of two ways:

- 1) a PDF exported from Notability or a similar app.
- 2) Scans/photos of physical notebooks.

Specific instructions for your notebook upload can be found in the relevant Carmen upload assignment.

Please note the following about your Notebook Uploads.

- The only accepted file types for submitting digital copies of notebook pages are docx and PDF.
- You must use the following file naming system:  
**lastname.#\_firstname\_semester\_experimentcode\_notebook.** For example, a lab notebook upload for experiment CLK in Spring 2023 would have the file name "Smith.1234\_John\_SP23\_CLK\_notebook".

Please submit only a single file. The purpose, procedure, and data to collect must be in the same file. Be sure to open your notebook in Carmen after submission to ensure that all the pages have been fully submitted. Unfortunately, if you do not submit a digital copy of your lab notebook on time, your TA will not be able to grade your Post-Lab assignment and you will not receive the 5 notebook points for the lab in question. In addition, for experiments that include Smart Worksheets, you will not receive credit for any work you complete on your worksheets if you do not



submit a digital copy of your lab notebook on time. If a digital copy of your notebook, with all procedure and data included, is not received before the final deadline for lab work (**Friday, April 21<sup>st</sup>**), you will only earn your performance for your Post-Lab and receive a zero score on any accompanying smart worksheet. Please note that for each specific experiment, you can still submit your lab notebook after the 48-hour window for no credit unless the final deadline has passed. Also, note that students cannot be excused from notebook uploads of experiments that have been assigned to them.

Only pdf and docx submissions on Carmen will be accepted for lab notebooks. Submissions only containing links to OneDrive, etc. folders, submissions via email, and submissions via comments in Carmen will not be accepted. **It is important to note that the 48-hour grace period does not apply to uploading your notebook** after the deadline. Please make sure you submit your notebook pages to the correct assignment dropbox in Carmen. Turning in notebook pages to the wrong assignment dropbox will result in no credit for the notebook or the corresponding Post-Lab once the final deadline to submit labs has passed on April 21<sup>st</sup> 2023. If you submit your notebook pages for any experiment within a week of the final deadline, please contact your lab TA and notify them of your submission in order for them to grade your Post-Lab for that experiment.

Please do not re-upload your notebook pages once they have been graded with the intention of getting a higher score. Since notebooks uploaded after the 48-hour submission window are considered late, re-uploading your notebook pages will result in your notebook grade being changed to zero as a result of a late submission.

**Laboratory Notebook for Experiment VOL:** For your digital VOL lab, there is a notebook assignment that you should submit before your regularly scheduled lab time. Please prepare your notebook for experiment VOL with all the required components you are expected to normally have in your lab notebook prior to attending lab i.e purpose, procedure, and data to collect section without the data filled in. **You should submit your prepared lab notebook as a pdf or docx before the start of your regularly scheduled lab time for experiment VOL.** Please note that if you do not submit a digital copy of your lab VOL notebook on time, your TA will not be able to grade your digital VOL Post-Lab and the accompanying Smart Worksheet assignment. You will also not receive the 5 notebook points for the lab. Additional requirements including the final deadline for lab notebooks are explained under “Laboratory Notebook” applies to experiment VOL as well.

**LABORATORY PERFORMANCE:** To foster a safe and positive learning environment for all students, each in-person laboratory grade includes 5 points for laboratory performance. In the bullet points below, we discuss some of the items that contribute to your performance points.

- To make sure you (and your lab partner) complete lab in time, we highly encourage you to arrive outside the laboratory by the official start time and wait for the TA to welcome you into the lab room.
- You are expected to be prepared. Proper attire must be worn, and safety policies must be followed; see page 9 and the Safety Statement on Carmen for more information.
- As the laboratory is a common space, you are expected to treat all equipment respectfully and use it properly.
- You must follow instructions given in the lab manual and by your TA, and if a mistake is made, adjust your technique or behavior to adhere to these instructions.
- **Cell phones must be put away in a backpack or bag during lab.** Laptops and tablets should never be set directly on the lab bench (due to chemical contamination) before cleaning. Headphone use is strictly prohibited.
- Gloves must be taken off before leaving the lab room. Please do not touch the doorknobs or any food or drink items while wearing gloves.
- You are expected to complete any in-lab activities before leaving lab unless extenuating circumstances apply.
- Make sure your TA checks you out before you leave the lab.

Every student will begin each lab period with all 5 performance points. Your TA will deduct points for not following the above guidelines. “Lab Performance” is the first item in each Post-Lab for an in-person lab. When each Post-Lab has been graded and returned, your lab performance score will be included.

Please note that students who are continuously late to lab will be asked to meet with the lab supervisors to chat about the recurring lateness first before they can continue working in the lab.

**ONLINE DISCUSSION & COMPLETION POINTS:** The very last lab of the semester (VOL) is a digital lab. To encourage active participation, the digital experiment includes 5 completion points as the first item in the Post-lab. Five points are earned by attending the entirety of the online lab discussion session via Zoom. The discussion will start at the regular start time of your lab. Make sure your first and last name are displayed during the online lab discussion. To receive the five points, you must participate in the online discussion.





To be eligible to make up the online lab discussion session, you must have a documented university-approved absence. Please email the Lab Supervisors using the email address listed on the front of this syllabus within 24 hours of the missed online session and provide your documentation (please cc your TA on the email) unless extenuating circumstances arise. The Lab Supervisor will consider extenuating circumstances as they arise.

When you are on Zoom for your online discussion, we recommend closing any apps on your device that are not relevant and turn off notifications to make sure we all can stay focused without any distractions. Be sure to use the chat window for questions and comments that are relevant to class. Be mindful to others in the meeting and **stay on the topic being discussed**. Please mute your microphone when you are not talking. If you do not attend the entirety of the online discussion for the lab of the semester, you will receive a zero (0) even if you complete the accompanying Post-Lab.

**POST-LABS:** Post-Labs, available on Carmen, will be completed after most experiments. You will have two attempts and your highest autograded attempt will be graded, not the most recent. Each attempt can be open for 48 hours. Some Post-Labs include a Smart Worksheet while others include a Presentation of Data file upload question. Refer to the Achieve website section below for a discussion of Smart Worksheets.

Please note the following information about the Presentation of Data uploads.

- The only accepted file type is PDF.
- The file should be named with the following format:  
**lastname.#\_firstname\_semester\_experimentcode\_data**. For example, a Presentation of Data file for experiment CLK in Spring 2023 would have the file name "Smith.1234\_John\_SP22\_CLK\_data".

Any submitted files that are not the required file type (PDF only) will result in zero credit for your Presentation of data question in your Post-Lab. We encourage you to review your Presentation of Data after your first submission to ensure you have submitted what you intend to submit for that question. Submissions only containing links to OneDrive, etc. folders, submissions via email, and submissions via comments in Carmen will not be accepted. We can only accept the work you submit to the appropriate question in your Carmen assignment.

Students will be given one exception to submit their data on their data upload for instances where submission requirements are not followed. If you want to use your exception, you must contact the lab supervisors within a week of your graded assignment. Conditions under which a pass will be granted are:

- Submitting any other file type other than a pdf
- Naming the file incorrectly and
- Accidentally submitting a blank file
- Extenuating circumstances as determined by the lab supervisors

Please note that instances that do not qualify for an exception include but not limited to forgetting to submit the Presentation of data file, uploading incomplete work and submitting work completed from a previous semester.

Post-Labs are due one week after the completion of the experiment by the start time of your lab period. No credit (0) will be given to Post-Labs and submitted after the 48-hour grace period. Even if 48 hours have not elapsed, Post-Labs, and notebook uploads will not be accepted after **Friday, April 21<sup>st</sup> at 11:59 pm**. As stated in the Laboratory Notebook section of this syllabus, you will only earn performance points on the Post-Lab if you do not upload a digital copy of your notebook including all procedure and data before the final deadline for lab work.

Please note that if the due date of a Post-Lab coincides with a University Holiday, an extension will be applied to that assignment. For instance, the due date for experiment SAL Post-Lab will be extended to the Tuesday right after Spring break. There will be no grace period once the new due date passes. Please note that the due dates will not be extended beyond the final deadline i.e. **Friday, April 21<sup>st</sup> at 11:59 pm**.

**SMART WORKSHEETS:** Your Post-Lab assessments for experiments SOL, FPD, BAR, CLK, SST, WST, and VOL include Smart Worksheets that you will use to analyze the data you collected. The worksheets can be accessed via the Achieve website at <https://achieve.macmillanlearning.com/courses>. This link can also be found on Carmen. See the General Information below to learn about the Achieve website.

You may only submit a worksheet once; they will not be reset for any reason. Worksheets are due at the same time as the accompanying Post-Lab. The Smart Worksheet autosaves as you work on it therefore you do not need to submit the worksheet when you are finished. Please note that students cannot be excused from Smart Worksheets for Post-Labs that have been assigned to them. Only have the worksheet open when you are working on it. If the



worksheet has been idle for more than an hour, refresh the page before continuing your work. Failure to purchase access will result in forfeiture of these points. No credit (0) will be given to Smart Worksheets submitted after the 48-hour grace period. Even if 48 hours have not elapsed, Smart Worksheets will not be accepted after **Friday, April 21<sup>st</sup> at 11:59 pm**. For experiments that includes smart worksheets, no credit will be given for the worksheets if you do not upload a digital copy of your notebook including all procedure and data before the final deadline for lab work.

Just like the Post-Lab, if the due date of a Smart Worksheet coincides with a University Holiday, an extension will be applied to that assignment. Again, no assignment will have due dates extended beyond the final deadline i.e **Friday, April 21<sup>st</sup> at 11:59 pm**.

**Introduction to Smart Worksheets:** We highly encourage you to complete the Introduction to Smart Worksheets assignment found on the Achieve website. This assignment is **due on January 15<sup>th</sup> at 11:59 pm for credit but will remain open until April 21<sup>st</sup> at 11:59pm**. It is designed to introduce you to key features of the Smart Worksheets you will be completing this semester and shows you how to get the most out of them. The score of this assignment will count towards your grade for this class. You will complete this worksheet once and they will not be reset for any reason. Regardless of whether you complete this assignment or not, you are responsible for understanding how data analysis and calculations work in the Smart Worksheets.

## LABORATORY POLICIES

**SUPPLEMENTARY DATA POLICY:** If you are unable to collect all the data needed in lab, you should email the lab supervisors within 24 hours of the start of lab. The lab supervisors will review your circumstance and make a decision as to whether you will receive the data you are missing. Depending on the type of data you need, points may be deducted from your Smart Worksheet, Presentation of Data, and/or procedure questions in the Post-Lab. Please note that contacting the lab supervisors is not an assurance that that you will receive data.

**MISSED LABORATORY POLICY:** To ensure a successful and productive lab experience, students are required to attend all in-person labs this semester. Students can make-up only one lab without a university approved absence. However, failure to have an approved excuse for missing a lab will result in a 40-point penalty. The 40-point grade penalty is applied in a separate column in the Carmen grade book so students can easily see when a grade penalty is applied. Please know that absences resulting from extenuating circumstances will be reviewed by the Lab Supervisor and decide whether the 40-point penalty can be waived.

Unfortunately, the 40-point penalty cannot be waived for the following reasons: Lack of preparation, negligence, work schedules, planned vacations, failure to have proper PPE (goggles and Lab coat) and/or lab attire, and exams held during regularly scheduled lab sessions. The 40-point penalty will be waived for the following reasons with proper documentation: Student-athlete commitments, military commitments, religious obligations, medical emergencies, illness, death of a family member, childcare issues, or SLDS attendance/deadline modifications. The lab supervisors may request for some form of documentation to have the 40-point penalty waived. Please be sure to email the requested documentation to the email listed at the front of the syllabus by the final deadline for submitting all lab works i.e **Friday, April 21<sup>st</sup> at 11:59 pm**.

You may miss a second lab if you have a university approved absence. If you miss an in-person lab and want to request a make-up, you should email the Lab Supervisors within one week of the missed lab. The make-up lab for your first missed lab will be a digital make-up lab assigned towards the end of the semester. This make-up lab will be unrelated to the lab you missed. The make-up lab for a second missed lab with an approved absence will be a digital alternate version of the in-person lab you missed.

If you are registered with SLDS with Intermittent Flex Plan, please refer to the Intermittent Flex Plan Agreement in your Carmen course for specific policies about missed labs.

If you do not attend the lab, please do NOT submit a Post-Lab or Smart Worksheet. You must email the lab supervisor within one week of the missed lab unless extenuating circumstances make it so you cannot. The Lab Supervisor will determine if a circumstance is extenuating. If you do not contact the lab supervisors within a week of an in-person missed lab and submit the in-person Post-Lab or Smart Worksheet for that experiment, you will automatically receive a zero on the assignments, including the notebook upload, and will forfeit the opportunity for a make-up assignment for that experiment.



**COVID-19 ABSENCE:** In the event, you need to miss your in-person lab due to COVID-related issues, including but not limited to, illness and/or quarantine, please request accommodations from Student Life Disability Services as soon as possible. <https://slds.osu.edu/covid-19-info/covid-related-accommodation-requests/>. Once an accommodation is granted, please forward the accommodation letter to the Lab Supervisors as documentation.

**LATE ENROLLMENT:** Please note that if you enrolled in Chem 1220 once the semester begins, you are responsible for ensuring that you did not miss any lab assignments. We strongly suggest that you check the Laboratory Modules in Carmen and note any assignments you may have missed due to your late enrollment. Then reach out to the lab supervisors *within one week* of your enrollment in the class to request make-ups for any lab assignments you have missed.

**INCOMPLETE POLICY:** While nobody begins the semester anticipating they will receive an incomplete for a course, there are circumstances that may warrant that a student takes an incomplete in the course. In such situations, the Incomplete Policy for General Chemistry Lab will allow you to make-up a maximum of four (4) experiments. All incomplete requests must be made in writing to the lab supervisors by **Friday, April 21<sup>st</sup> at 11:59 pm**. Requests made after the final deadline will only be approved in the case of significant extenuating circumstances.

## HEALTH AND SAFETY REQUIREMENTS

**MEDICAL INSURANCE COVERAGE:** Due to the potentially dangerous nature of laboratory work, you are required to maintain medical insurance coverage through the Ohio State student health insurance or a private agency when enrolling in chemistry laboratory courses.

**COVID-19 SAFETY MEASURES:** All students, faculty and staff are required to comply with and stay up to date on all university health and safety guidance (<https://safeandhealthy.osu.edu>), which includes following university mask policies. Non-compliance will be warned first, and disciplinary actions will be taken for repeated offenses. Any changes to health and safety requirements may be found on the Safe and Healthy website and will be communicated through a Carmen announcement, if needed. In the event of a positive test or exposure to COVID, please visit <https://safeandhealthy.osu.edu/tracing-isolation-quarantine> for the current University guidance on isolation and quarantine.

**LAB ROOM SANITIZATION:** Students will be required to sanitize all equipment and glassware using the supplied 70% ethanol used before leaving lab. Cleaning and sanitizing are part of our regular standard operating procedures that have been approved by the University's Department of Environmental Health and Safety. Failure to clean and sanitize your equipment and glassware will result in loss of performance points for the experiment of the day.

**LABORATORY SAFETY REQUIREMENTS:** Students are required to read, understand, and implement the safety precautions indicated in the laboratory manual. The precautions are summarized on a safety statement which must be digitally signed on Carmen by all students during their first laboratory period. Until this statement is signed, students are not permitted to participate in laboratory activities. Some particularly important parts are:

1. You must wear department-authorized ANSI code goggles in the laboratory. If your goggles are lost, a new pair must be purchased from 180 Celeste Lab. Students in the lab without goggles will incur a 5-point deduction from their grade for the experiment (all lab performance points). Continued violations will result in a more severe point penalty and may result in dismissal from the course. Wearing contact lenses is not recommended.
2. According to University policy, wearing a face covering in lab is optional (<https://safeandhealthy.osu.edu/personal-protection-hygiene>). Students will need to provide their own face mask if the opt to wear a mask. We recommend bringing a second mask to change into after the lab is complete. You should wash any reusable face covering that you wore in lab before wearing again. Please note in the unlikely event your face covering is contaminated by a spill or splash, it may need to be disposed of as hazardous waste. In that case, you will be provided with a disposable mask to complete the day's lab.
3. Each student must wear adequate clothing to reduce the possibility of injury from chemicals or broken glass, including long pants and shoes that cover your entire foot. ***Students wearing inappropriate attire - including but not limited to shorts, sandals, spandex or other thin, skin-tight pants, pants with holes, tank tops, or short skirts - will be sent home.*** These students are expected to change and return to complete the experiment in proper attire. Confine long hair. Ankles should be completely covered. Please note that this policy is to protect you from chemical burns or spills.
4. Familiarize yourself with the location of the fire extinguisher and eye wash in the laboratory.



5. Promptly report all accidents, no matter how small, to your lab instructor.
6. Your work area and common glassware must be cleaned before you leave lab. After cleaning all glassware, you must sanitize your glassware with the provided 70% ethanol solution. Once you have sanitized all glassware, clean your bench with the provided 70% ethanol. This ensures that you, and other students who use the space, will have a clean and sanitized workstation. Clean up spills in the balance room by brushing chemicals into a weighing dish.
7. No unauthorized experiments are allowed. No chemicals may be removed from the lab.

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***Requirements in this syllabus (assignments, due dates, policies etc.) may be altered ONLY by a Lab Supervisor or the Vice Chair for Undergraduate Studies. Please see the lecture syllabus for pre-requisites, goals and learning outcomes, commitment to diversity, and details about recitation, online homework, and exams. All lecture policies still apply to the laboratory.***

## ACADEMIC CONDUCT

### STANDARDS OF ACADEMIC CONDUCT IN GENERAL CHEMISTRY LAB

**Violations of academic standards in General Chemistry will be referred to the University Committee of Academic Misconduct (COAM) as required by Faculty Rules.** It is the responsibility of COAM to investigate all reported cases of student academic misconduct; illustrated by, but not limited to, cases of plagiarism and any dishonest practices in connection with examinations, quizzes, and graded assignments. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information see the Code of Student Conduct: [studentlife.osu.edu/csc](http://studentlife.osu.edu/csc)

**Student Responsibilities:** Any graded material submitted in General Chemistry must represent your own work. This includes exams, quizzes, homework, and laboratory assignments, which are to be an individual effort. Unauthorized group efforts by students, use of another student's course materials, or assistance from individuals who already have taken the course, could place you in jeopardy of violation of the standards for General Chemistry. In some courses, group work is acceptable on certain activities (as explicitly stated by your instructor). In these cases, it is important that you know and understand where authorized collaboration (working in a group) ends and collusion (working together in an unauthorized manner) begins. Identical answers indicate copying or unacceptable group efforts - always answer questions in your own unique words. It is important that you consult with your instructor for clarification on whether or not collaboration is appropriate on an activity.

*You should not assist others in violating academic standards.* Students supplying materials for others to "look at" may be charged with academic misconduct. Never allow another student access to your Pre-Laboratory exercises, lab reports, or other assignments – even after completion of the course. "I didn't know they were going to copy my work" is not an acceptable excuse.

**Laboratory:** Laboratory work is the essence of the science of chemistry. All laboratory work in General Chemistry is to be an individual effort and any lab assignments may be sent through Turnitin, an originality checker. You are expected to perform all parts of the experiments with your own equipment, chemicals, and unknowns. The accumulation of data, calculations derived from that data, and any conclusions or answers to questions associated with that experiment are to be your own work. Academic misconduct involving lab work includes but is not limited to the following:

- Laboratory data may not be altered or "made up". All laboratory work must be done in your assigned laboratory room, during your scheduled time period, and under the supervision of your assigned teaching assistant.
- Plagiarism or the submission of work based on old material is considered to be academic misconduct no matter how small the infraction. Possession of another student's lab report(s) will raise immediate concerns about academic misconduct.
- Evidence of copying or unauthorized "working together" on laboratory course work will be submitted to COAM.
- Individuals retaking the course must complete all work for the course during the current semester, and may not submit any parts of any laboratory assignment from a previous semester (see item #6 in "Ten Suggestions for Preserving Academic Integrity", <http://oaa.osu.edu/coamtensuggestions.html>).
- If you are found in violation, COAM will decide what disciplinary and/or grade sanctions you receive. Additional information about COAM policies and procedures can be found at <https://oaa.osu.edu/academic-integrity-and-misconduct>.



## CONCLUSION

We are going to have a great semester learning and experimenting together. We know this syllabus is a lot of information to digest at once but remember that the lab team is there to guide you when you have questions. You can find out more about us and the other General Chemistry team members on the “**Contacts**” page in Carmen, and also to find which one of us has the specific expertise to address your unique needs. We cannot wait to meet you!