CHE 113LAB – General Chemistry 1 Lab

University at Buffalo **Fall 2021 Course Syllabus** **Dr. R. Ventura – Lab Director**

LABORATORY STAFF

Dr. Rachel Ventura - General Chemistry Lab Director **Office – NSC 266** **Phone – (716) 645-1494**
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PRIMARY INSTRUCTORS FOR ALL LAB SECTIONS ARE GRADUATE STUDENT TEACHING ASSISTANTS

Contact Information for the TAs will be Available on UBLearns and HUB during the 1st Week of Classes

INSTRUCTIONAL MODE for Fall 2021:

All CHE113 Labs are scheduled as In-Person. (See information about the University's instructional modes here: https://registrar.buffalo.edu/schedules/fall-2021.php) Labs will meet weekly on campus in the room indicated on your student HUB schedule, and you are expected to attend in-person. See "Laboratory Attendance" on p.2.

IMPORTANT DATES:

Classes begin Monday August 30th
Labs Begin the Week of September 13th
Last day to drop/add a course is Tuesday September 7th
Last Day to Resign with grade of R is Friday November 12th
More Details: https://registrar.buffalo.edu/calendars/student/

COURSE OVERVIEW: CHE113LAB is the 1-credit General Chemistry 1 Laboratory which accompanies CHE101LR General Chemistry 1 Lecture & Recitation (4 credits combined). For students taking Gen Chem 1 for the first time, we highly recommend taking CHE101LR & CHE113LAB concurrently to get the full benefit of the courses as they were designed. Students will receive separate letter grades for CHE113LAB and CHE101LR.

COURSE WEBPAGES:

https://ublearns.buffalo.edu – Source for information/communication (syllabus, contact info, announcements).

UB Learns

www.labflow.com – Source for ALL lab materials, videos, and assignments. ***A subscription is required, see below.***

labflow

REQUIRED MATERIALS FOR CHE113:

1. **LabFlow Subscription (~$35) –** LabFlow is a website-based platform which will house ALL of your lab materials/assignments for this term. There is no hardcopy book to purchase. **Access can be purchased directly from LabFlow during the account creation process, or at the UB Bookstore. Keep in mind that the Bookstore will be a bit more expensive and can sometimes be backordered.** If you can, I HIGHLY recommend that you purchase directly through the website.

   To get signed up:
   - Logon to UBLearns first, download and follow the "LabFlow Instructions".
   - When asked for your **Enrollment Code**, enter your LAB SECTION. You can find this on your HUB schedule, it will be a Letter and a Number (something *like* P7).
   - When asked to confirm with the day/time your lab meets, refer to your HUB schedule to see the day/time.
   - When asked for payment, you can either pay directly with a credit card or request temporary access. **The temporary access will allow you to get started for free, and will expire on 9/20/21.**

   All students will also receive a printed booklet of the procedures and data tables during their first lab period. This is free of cost and will serve as your manual while in the lab.
2. **Computer** – Preferably with the minimum requirements as per the University: IT Service Guides
3. **Smartphone/Tablet** – *Recommended* for uploading photos of certain lab work to LabFlow.
4. **Padlock (combination or key)** – to be used to lock your lab drawer. NO LUGGAGE LOCKS.

REQUIRED PPE (YOU MUST HAVE THESE TO ATTEND YOUR FIRST LAB!!!)

1. **Vented Monogoggle Safety Glasses** (available at the UB Bookstore for ~$8, or here: Amazon Link)
2. **Lab Apron** (available at the UB Bookstore for ~$6, or here: Amazon Link) *A lab coat is also allowed, but not required.*
3. **Proper Protective Clothing in Lab:**
   - Long-sleeved shirt (which covers from the neck down), Long Pants, Intact Footwear covering the entire foot (no open toes or open backs)
   - Cloth Face Covering or Mask (to adhere to the University's face mask policy)
   - See "Safety in the UB Laboratory" on LabFlow for more details

Laboratory Attendance:

Students are expected to attend lab weekly as-scheduled. Attendance will be taken. **The health and safety of our students, teaching assistants, and lab staff is of paramount importance and we have taken extensive measures to create a safe environment. It is critical that you follow public health guidelines. Please follow all University protocols for attending in-person classes and complete the Daily Health Screening.**

Students that need to miss a lab for a *valid reason* may submit an "Absence Form" for the missed experiment – form and isntructions for submission are available on UBLearns.

- Approval of the Absence Form will be at the discretion of the Teaching Assistant and Laboratory Director.
- **If Approved**: student will be able to complete the missed experiment ONLINE by requesting "provisional data" through LabFlow. No penalty will be applied as long as the work is submitted on time. Students will not be granted more than 2 approved absences without **substantial documentation** for the missed labs.
- **If Denied**: student will receive a zero for the missed experiment. (See "Grading" for details on the lowest lab score is being dropped.)

Make-Up Policy:

- There are no make-ups for missed labs, meaning you cannot attend another lab section to complete a missed experiment. (Our enrollment is simply too large to effectively manage such a system.) See Attendance above.

ABOUT THE COURSE:

CHE113 Grading:

Safety Quiz	10 points
Pre-Lab Quizzes (Best 11 of 12 @ 5 pts each) *	55 points
Lab Reports (Best 11 of 12 @ 25 pts each) **	275 points
Lab Final***	60 points
Course Total	400 points

The final course grade (A-F including +/–'s) is determined strictly on the basis of the total number of points accumulated.

*There are **11 in-person** experiments scheduled, and **1 online-only** experiment (called "Energy & Specfic Heat") which will open during the last few weeks of the semester – so **12 total experiments.** There is a Pre-Lab Quiz and Lab Report for each experiment.

**The lowest 1 Pre-Lab Quiz and lowest 1 Lab Report (out of the 12 available) will be dropped at the end of the semester.

***The format of the lab final will be announced later in the semester – but it will be given *in-person* in your normal lab room, as shown in the schedule on the last page of the syllabus. The final will focus on lab techniques and key calculations which were performed during the semester.

Approximate Grade Cutoffs:

Grade	% of Points Required	Grade	% of Points Required
A	>91%	C	69% - 73%
A-	88% - 91%	C-	65% - 69%
B+	84% - 88%	D+	61% - 65%
B	81% - 84%	D	57% - 61%
B-	77% - 81%	F	<57%
C+	73% - 77%		

Weekly Assignments for Lab:

- All lab work will be accessed/submitted through the **LabFlow** website.
- **You will be completing 12 Experiments during the semester (11 in-person, 1 fully online). Your grade for each experiment will be made up of two components:** a Pre-Lab Quiz (5 points) and a Lab Report (25 points)
- **For each Experiment on LabFlow you will follow a READ, WATCH, DO workflow:**
  1. **READ** the experiment. *This is always the first "tile" in the row – it's a downloadable pdf.*
  2. **WATCH** any provided videos. *Some of these are produced by LabFlow, others have been made by us at UB.*
  3. **DO** the Pre-Lab Quiz. *These are are not timed, and you get two attempts. The highest score is taken.*
  4. **DO** the Lab Report. *You get two attempts for these as well – and there is no penalty for using your 2nd attempt. If you use a second attempt, it MUST be submitted before the due date of the assignment.* ***The last attempt is the one that is graded.***

******The "Helpful Resources" module on LabFlow (scroll all the way to the bottom) contains a few Orientation Videos and tips/tricks for using LabFlow successfully. Highly recommended!!*****

Your Weekly Work-Flow Should Look Something Like This …

Before Lab

- Logon to LabFlow. Scroll down to the appropriate Experiment Name based on the schedule.
- Open the first tile, and read the Experiment (pdf will open).
- Watch any videos that are posted to the right of the first tile, just keep scrolling to the right.
- Open the **"Pre-Lab Quiz"** tile and complete it. These are generally between 7 and 10 questions long, and should only take 10 minutes or less. You will be given two attempts on each Pre-Lab Quiz. **Pre-Lab Quizzes are due at the start time of your lab section. So if you have lab on Mondays at 1:50pm, your Pre-Lab Quizzes are due at 1:50pm on Mondays!** Set reminders for yourself! 😉 *These Pre-Lab Quizzes are worth a total of 50 points – which is about 16% of your total grade, so don't skip them!*

In Lab

- Attend lab and complete the experiment! Make sure you accurately record all of the data required, and any Unknown Numbers you may need. Your TA will check your data sheets before you leave the lab.

After Lab

- Before the next week, you will need to complete your Laboratory Report. Logon to LabFlow, and scroll to the appropriate experiment.
- Scroll all the way over to the right, and click on the "Report Submission" tile.
  - You will be asked if you are completing the experiment online or not. **Since experiments are done in the lab, answer "NO" to this question.** ***If you obtained an approved Absence Form, you will answer "YES" to this question and follow the prompts to be given provided data.***
  - Once you have entered or requested data, you will finish the rest of the report. This is normally entering numerical answers for calculations, and typing in answers to any short-answer questions.
  - You may also be asked to submit an image or images of your Data Page(s), and the written-out work for your calculations. Please make sure the images are **clear and legible**.
  - After you are comfortable with your answers, hit "Submit" at the bottom of the page. You will receive feedback as to the correctness of any auto-graded components (calculations).
    If you wish, you will have one additional attempt to go back and try again. (So you have 2 total attempts for each Lab Report). **The Orientation Videos on LabFlow (in the Helpful Resources module) explain how the second attempts work.**
  - **Lab Reports are due 1 WEEK after each experiment is scheduled, unless otherwise noted on the Schedule. You can view all of the due date details on LabFlow as well.**
  - NOTE: The grading of each lab report is based generally on the calculations that you perform, and the answers to the short-answer "laboratory report questions". There is no credit attached to the "accuracy" of your results, simply that you conducted the calculations *correctly* using the data you obtained in the lab or the provided data. There is also credit associated with uploading the images of your written-out work for the calculations, and answering any short-answer questions with correct/logical/justifiable answers.

Late Lab Reports:

- **Reports that are up to 24 hours late:** can be submitted through the normal LabFlow submission link. **A 2-point penalty will be assessed.**
- **Reports that are more than 24 hours late:** you must email your TA for an extension. If you do not have a compelling/documented reason for being late, **2 points will be taken off for every day late**.
- **Reports more than 1 week late**: will not be accepted without documentation.

If unavoidable circumstances cause you to miss the due date for a lab report, please let your TA know right away so they can evaluate the request and decide if late points should be deducted. Documentation may be requested to avoid late penalties.

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Laboratory learning is directly related to the General Education requirement for natural science for understanding the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis.
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Incompletes:

A grade of incomplete ("I") indicates that additional course work is required to fulfill the requirements of a given course. University Policy states that students may only be given an "I" grade if they have a *passing average in coursework that has been completed* and have well-defined parameters to complete the course requirements that could result in a grade better than the default grade. Since there is not a pathway to complete laboratories that are missed, incompletes for CHE113 will only be granted in extenuating circumstances, and are at the discretion of the Laboratory Director. **It is the responsibility of the student to initiate the request for an "I" grade and receive the Lab Director's approval, prior to the end of the semester.** For more information regarding Incompletes, see: https://catalog.buffalo.edu/policies/explanation.html Students who stop attending, as judged by their submission of lab reports from the latter half of the session, without officially resigning, will be assigned the grade of F. A grade of FX will be given to students registered for lab and who do not turn in any labs. The lack of participation will be reported to the Office of Financial Aid at the end of the session.

Students Registered with the Office of Accessibility Resources: The Chemistry Department works closely with the Office of Accessibility Resources to make it possible for anyone wishing to take a Chemistry course to do so. Arrangements can be made for students who must perform laboratory experiments with alternate accessibility arrangements. Arrangements must be made well in advance by contacting Mr. Randall E. Borst, Director of Accessibility Resources, 60 Capen Hall and Mrs. Clarke or Dr. Ventura for laboratory experiments.

Limited Enrollment Course:

Please be advised that CHE 113 is designated as a "limited enrollment" course, which means that the enrollment is limited by the number of student positions available. Self-registration in this course in the fall and spring semesters will be limited to those students who are taking the course for the first time. Thus, repeat enrollment may be difficult or impossible in the fall and spring semesters, and students who plan to repeat the course for any reason should plan to register for the course in the summer.

Academic Integrity:

The University community depends upon shared academic standards. **Academic dishonesty in any form represents a fundamental impairment of these standards.** If, after consultation with the student, an instructor believes the student has committed an act of academic dishonesty, the instructor has the authority to impose sanctions in keeping with this principle. The MINIMUM sanctions to be imposed in Chemistry 113 are as follows:

> First infraction: The score for the assignment in question will be reduced to ZERO.
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> Any subsequent infraction will result in a minimum penalty of 50 points deducted from the student's total course points.

Students should consult the Academic Regulations and Procedures section of the Undergraduate Catalog for a more detailed discussion of possible harsher sanctions and the appeals process: https://catalog.buffalo.edu/policies/integrity.html

Academic dishonesty includes, but is not limited to, the following:

1. Copying from another person's lab report or deliberately allowing another person to copy from you, or handing in ANY work that is not your own original work. **This includes using another person's words for short-answer questions (even if those answers were provided by an online resource).**
2. Changing any of the answers on a lab report and then requesting that the lab report be regraded for additional credit. **LabFlow stores an electronic copy of every lab report submission.**
3. Reporting of laboratory work using data inconsistent with the data recorded in the laboratory or the data provided by LabFlow.
4. Posting laboratory materials (printed or electronic) to external websites. Posting Laboratory Report Questions to Chegg or other external websites to ask for answers.
5. Copying or altering the copyrighted laboratory manual to obtain data without doing the lab as designed.
6. **Intellectual Property**: Course materials that have been prepared for this course are intellectual property. Video, audio, and photographic recording of laboratories is prohibited without explicit permission. The selling or dissemination of laboratory videos and handouts is prohibited without explicit permission.

CHE 113 Objectives and Assessment:*

Students successfully completing this course will:	**Assessment**
Understand and apply concepts to solve problems using: • matter and measurement** • atoms, molecules and ions • stoichiometry and calculations with chemical formulas and equations** • reactions in aqueous solution**	Laboratory Experiments: Measurements & Density, Separation of a Heterogeneous Mixture, Rxns in Aqueous Solution, Acid-Base Titration, Preparation of Alum Students must achieve a grade equal to C or above to be deemed "satisfactory" on a mid-semester report
**Describe and calculate quantities for: • thermochemical principles • gas behavior	Laboratory Experiments: Analysis of an Antacid by the Ideal Gas Law, Molar Mass of an Unknown Volatile Liquid, Coffee Cup Calorimetry
**Use the following to predict, depict and describe: • liquids and intermolecular forces • general characteristics of solids	Laboratory Experiments: Measurements & Density, Investigation of Polar and Nonpolar Compounds, Molar Mass of an Unknown Volatile Liquid

***course objectives are subject to change due to unforeseen circumstances.** These learning objectives directly address the General Education Knowledge and Skill Area #2- Natural Sciences, item "application of scientific data, concepts, and models in one of the natural or physical sciences."

CHE113 Experiment Schedule for Fall 2021

Week of	What's Due This Week?	Monday	Tuesday	Wednesday	Thursday	Friday
8/30 ***No Labs***	Visit UBLearns for the Syllabus, **READ IT!**	**Classes Begin NO LAB**	**NO LAB**	**NO LAB**	**NO LAB**	**NO LAB**
9/6 ***No Labs***	Buy your Lab Materials, sign up for LabFlow!	**Labor Day – No Classes Held, NO LAB**	**NO LAB**	**NO LAB**	**NO LAB**	**NO LAB**
9/13 ***Labs Begin***	**Safety Quiz** **Pre-Lab:** Msmt & Density	**Check-In, Safety** Measurements & Density	**Check-In, Safety** Measurements & Density	**Check-In, Safety** Measurements & Density	**Check-In, Safety** Measurements & Density	**Check-In, Safety** Measurements & Density
9/20	**Report:** Msmt & Density **Pre-Lab:** Separation	Separation of a Heterogeneous Mixture	Separation of a Heterogeneous Mixture	Separation of a Heterogeneous Mixture	Separation of a Heterogeneous Mixture	Separation of a Heterogeneous Mixture
9/27	**Report:** NONE **Pre-Lab:** Rxns In Aq. Solution	(*weigh sand from Sep. lab)* Rxns in Aq. Solution	(*weigh sand from Sep. lab)* Rxns in Aq. Solution	(*weigh sand from Sep. lab)* Rxns in Aq. Solution	(*weigh sand from Sep. lab)* Rxns in Aq. Solution	(*weigh sand from Sep. lab)* Rxns in Aq. Solution
10/4	**Reports:** Sep.**&** Rxns In Aq. Sol'n **Pre-Lab:** Grav. Analysis	Gravimetric Analysis	Gravimetric Analysis	Gravimetric Analysis	Gravimetric Analysis	Gravimetric Analysis
10/11	**Report:** Grav. Analysis **Pre-Lab:**Titration	Acid-Base Titration	Acid-Base Titration	Acid-Base Titration	Acid-Base Titration	Acid-Base Titration
10/18	**Report:** Titration **Pre-Lab:** Calorimetry	Calorimetry	Calorimetry	Calorimetry	Calorimetry	Calorimetry
10/25 **Specific Ht Lab Opens**	**Report:** Calorimetry **Pre-Lab:** Alum	Preparation of Alum	Preparation of Alum	Preparation of Alum	Preparation of Alum	Preparation of Alum
11/1	**Report:** NONE **Pre-Lab:** Antacid	(*weigh alum pdct*) Analysis of an Antacid	(*weigh alum pdct*) Analysis of an Antacid	(*weigh alum pdct*) Analysis of an Antacid	(*weigh alum pdct*) Analysis of an Antacid	(*weigh alum pdct*) Analysis of an Antacid
11/8	**Reports:** Alum AND Antacid **Pre-Lab:** MM Unknown Liquid	Molar Mass of an Unknown Volatile Liquid	Molar Mass of an Unknown Volatile Liquid	Molar Mass of an Unknown Volatile Liquid	Molar Mass of an Unknown Volatile Liquid	Molar Mass of an Unknown Volatile Liquid
11/15	**Report:** MM Unknown Liquid **Pre-Lab:** TBD	Dry Lab – Topic TBD	Dry Lab – Topic TBD	Dry Lab – Topic TBD	Dry Lab – Topic TBD	Dry Lab – Topic TBD
11/22	**Report:** NONE	**Thanksgiving Recess – No Labs**				
11/29 **Specific Ht Lab Due**	**Pre-Lab:** Polar & Nonpolar Cmpds	Investigation of Polar & Nonpolar Compounds	Investigation of Polar & Nonpolar Compounds	Investigation of Polar & Nonpolar Compounds	Investigation of Polar & Nonpolar Compounds	Investigation of Polar & Nonpolar Compounds
12/6	**Report:** Polar & Nonpolar Cmpds	**Check-Out, Lab Final**	**Check-Out, Lab Final**	**Check-Out, Lab Final**	**Check-Out, Lab Final**	**Check-Out, Lab Final**
12/13	Final Exam Week – No Labs					