

Chemical Principles Laboratory I

CHEM 1215 Spring 2022 Course Syllabus

1 credit

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Office Hours: By appointment, in person or by Zoom.

Dates (Week Starting)		Experiment
January 10	Intro	Course Policies & Safety Review
January 17	Holiday	Martin Luther King Holiday - No Labs
January 24	Exp1	Basic Lab Skills and Excel (Notebook)
January 31	Exp2	Separation of Components (LabFlow)
February 07	Exp3	Empirical Formulas (Notebook)
February 14	Exp4	Chemical Reactions of Copper (LabFlow)
February 21	Holiday	President's Day – No Labs
February 28	Exp5	Gravimetric Analysis (Notebook)
March 07	Holiday	Spring Break – No Labs
March 14	Exp6	Paper Chromatography (LabFlow)
March 21	Exp7	Calorimetry (Notebook)
March 28	Exp8	Atomic Spectra & Beers Law (LabFlow)
April 04	Exp9	Modeling Molecular Geometry (LabFlow)
April 11	Exp10	The Ideal Gas Law (Notebook)
April 18	Ck-Out	TA/Course Evaluations – Score Check

Required Materials:

- Lab Text:** Enrollment in LabFlow through Canvas link.
- Lab Notebook:** "Whitelines gridded notebook" from the USU bookstore (or similar).
- Splash Goggles:** Must be splash proof, impact resistant, provide good vision and fit properly. Must meet ANSI Z87.1 standards.
- Lab Coats:** Must cover arms to wrists and legs to knees. Available at Campus Bookstore, Chemistry Stores and other locations. **Lab aprons are unacceptable.**
- Proper Attire:** Full-length pants with no holes, socks, and closed-toed shoes are required in the laboratory. **Nylon/Lycra or Spandex tights are unacceptable.**
- Lab Fees:** The lab fee of \$75 is used to purchase equipment and supplies for the laboratory as well as a small portion for teaching assistant compensation.

Recommend Materials:

Scientific Calculator: A calculator is useful for performing calculations in the lab. Other electronic devices, including cell phones, tablets, and laptops, are not permitted in lab.

Grading

A score of 90% is guaranteed an A- and 93% or better is guaranteed an A. For complete breakdown see grading scheme sheet. It is up to the student to check scores are correct and complete on a regular basis.

Check-in Module

Safety quiz (LabFlow).....	10 points
Safety Agreement, signed and uploaded (Canvas).....	10 points

10 Lab Report Modules @ 100 pts each (Worst lab module dropped) 900 points

Notebook Report Modules (5)

Pre-lab quiz	10 points
Pre-lab write-up	10 points
Lab notebook submission.....	60 points
Post-lab quiz.....	15 points
Lab clean-up (Collective for section)	<u>5 points</u>
Total for each lab.....	100 points

LabFlow Report Modules (5)

Pre-lab quiz	10 points
Pre-lab write-up	10 points
Lab report submission	60 points
Post-lab quiz.....	15 points
Lab clean-up (Collective for section)	<u>5 points</u>
Total for each lab.....	100 points

Check-out Module

Drawer Clean-Up.....	10 points
Course Evaluation (Canvas)	10 points
TA Evaluation (Canvas)	10 points

Total Points Possible 950 points

- Pre-lab assignments (pre-lab write-up, pre-lab quiz) are due 30 minutes **prior** to the lab meeting time.
- Pre-lab assignments (pre-lab write-up, pre-lab quiz) will not be accepted late.
- All students are expected to upload *.pdf or *.jpg files of their lab notebook writeups to Canvas no later than 30 minutes **prior** to the next lab meeting.
- Late post-lab assignments will be assessed a 10% penalty/day. Any assignment over one week late will not be accepted unless a prior agreement with your TA has been made.
- It is up to the student to check Canvas assignment scores are correct and up to date.

Course Structure

Labs meet weekly, according to the syllabus schedule above, in the assigned laboratory room.

Canvas

Canvas is required and must be checked on a regular basis. Students are responsible for all information posted on the Canvas 1215 Course including all announcements, course information and assignments.

Laboratory Check-in

Laboratory Check-in is mandatory and is held during the week of August 20, during your regularly scheduled lab meeting. Students will be introduced to their Teaching Assistant (TA) and the laboratory space including a discussion on safety information directly relevant to the laboratory space. **Any student failing to attend the Laboratory Check-in will not be permitted to perform any in-laboratory experiments and will not receive credit for any experiments whether performed in the laboratory or online.**

Policies and Procedures

1. The administration of Chemistry 1215 will adhere strictly to the policies (including the issuing of incompletes) outlined in the USU 2021 – 2022 General Catalog.
2. Qualified students with disabilities may be eligible for reasonable accommodations. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, 797-2444 voice, 797-0740 TTY, or toll-free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.
3. Attendance at **all** the assigned meetings is required. Excused absences include: (1) school excused absences outlined in the general catalog, (2) illness, and (3) a family emergency. Planned family trips, vacations, outings, and weddings are not excused absences. Students should notify the TA in advance, if possible, prior to missing an experiment. Documentation of a USU verified excused absence must be provided. Students missing an experiment will have one week to notify the TA that they have a valid excuse. A missed experiment without a valid excuse will be scored as **zero**. One lab score, usually the worst, will be dropped.
4. Makeup labs are available **solely at the discretion of the lab instructor**, Rob Alumbaugh. Makeup experiments are only possible during the week the experiment is scheduled, no exceptions.
5. Individuals not wearing safety goggles, lab coats, acceptable full-length pants with no holes, socks, and “complete” shoes (no sandals or pumps) will not be allowed in the laboratory, no exceptions.
6. Personal mobile electronic devices, such as phones, tablets and laptops, are not to be used in the laboratory and must be stored away.
7. All students must **read and sign** the Utah State University Chemistry and Biochemistry Departmental *Laboratory Safety Agreement Documentation* **prior** to beginning lab experiments.
8. Students must be registered for the lab section they attend. Failure to attend the student's registered section will result in an F-letter grade being assigned.
9. Canvas is required and students are expected and responsible to check the information therein for information regarding experiments and assignments.
10. Notebooks: Students are required to keep an organized record of lab work in their lab notebooks. An experiment procedure, detailed enough for someone else to follow and repeat the experiment, is expected to be entered into the lab notebook **before starting** each experiment. Your lab TA will provide additional specific information regarding the organization and what to include in the lab notebook. Pre-lab notebook writeups will be uploaded as either *.pdf or *.jpg files to LabFlow 30 minutes prior to the section start time for each experiment. The TA will grade the introduction and procedure section for the current experiment. All work done in the lab must be summarized in the note book. *No writing on lab report forms is permitted during the lab periods.* All notebook entries must be in ink. Incorrect entries and mistakes should be lined out and followed by correct entries.
11. Each lab report is due 30 minutes prior to the next laboratory session. Late reports will be assessed a 10% penalty per day. In the case of a University-excused absence on the day a lab report is due the student will have until the day they return to school to turn in their report without penalty. The lab report for the final experiment will be due at the beginning of the lab check-out period.
12. Students must review all lab course scores at the Check-out meeting time (Week of 29 November). It is also recommended that students retain all scored course laboratory work. Teaching assistants will not declare a student's final lab course grade at the score check meeting.

13. The Banner/Access system will automatically drop a student from the CHEM 1215 lab course if the student drops the concurrently enrolled CHEM 1210 lecture course. Students that have completed all of the experiments through *Experiment 8* may make a special request to Robert Alumbaugh to remain registered for the CHEM 1215 lab course.

Course Objectives and Assessment

CHEM 1215 is a laboratory course designed to explore a range of general chemistry concepts covered in the CHEM 1210 lecture course and put them to use in a laboratory setting. The experiments deal with basic chemistry techniques, assessment of data, synthesis of compounds, determination of chemical composition and characteristics, chemical separations, and the characterization of reactions. Students are expected to develop laboratory skills, learn to use basic instrumentation and keep a research-grade experiment notebook.

Assessment of the course will include an end-of-semester evaluation seeking suggestions for course improvement.

Academic Freedom and Professional Responsibilities

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. [USU Policy 403](#) further defines academic freedom and professional responsibilities.

Academic Integrity - "The Honor System"

The University expects that students and faculty alike maintain the highest standards of academic honesty. The Code of Policies and Procedures for Students at Utah State University ([Student Conduct](#)) addresses academic integrity and honesty and notes the following:

Academic Integrity: Students have a responsibility to promote academic integrity at the University by not participating in or facilitating others' participation in any act of academic dishonesty and by reporting all violations or suspected violations of the Academic Integrity Standard to their instructors.

Plagiarism

Plagiarism includes knowingly "representing by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." The penalties for plagiarism are severe. They include warning or reprimand, grade adjustment, probation, suspension, expulsion, withholding of transcripts, denial or revocation of degrees, and referral to psychological counseling.

Grievance Process

Students who feel they have been unfairly treated [in matters other than discipline, admission, residency, employment, traffic, and parking - which are addressed by procedures separate and independent from the Student Code] may file a grievance through the channels and procedures described in the Student Code: [Article VII Grievances](#)

Sexual Harassment

Utah State University is committed to creating and maintaining an environment free from acts of sexual misconduct and discrimination and to fostering respect and dignity for all members of the USU community. Title IX and [USU Policy 339](#) address sexual harassment in the workplace and academic setting.

The university responds promptly upon learning of any form of possible discrimination or sexual misconduct. Any individual may contact [USU's Affirmative Action/Equal Opportunity \(AA/EO\) Office](#) for available options and resources or clarification. The university has established a complaint procedure to handle all types of discrimination complaints, including sexual harassment ([USU Policy 305](#)), and has designated the AA/EO Director/Title IX Coordinator as the official responsible for receiving and investigating complaints of sexual harassment.

Students with Disabilities

USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the Disability Resource Center (DRC) as early in the semester as possible (University Inn # 101, 435-797-2444, drc@usu.edu). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

Withdrawal Policy, "I" Grade Policy and Dropping Courses

If a student does not attend a class during the first week of the term or by the second class meeting, whichever comes first, the instructor may submit a request to have the student dropped from the course. (This does not remove responsibility from the student to drop courses which they do not plan to attend.) Students who are dropped from courses will be notified by the Registrar's Office through their preferred e-mail account.

Students may drop courses without notation on the permanent record through the first 20 percent of the class. If a student drops a course following the first 20 percent of the class, a W will be permanently affixed to the student's record (check [General Catalog](#) for exact dates).

Students with extenuating circumstances should refer to the policy regarding Complete Withdrawal from the University and the Incomplete (I) Grade policy in the General Catalog.

Assumption of Risk

All classes, programs, and extracurricular activities within the University involve some risk, and some involve travel. The University provides opportunities to participate in these programs on a voluntary basis. Therefore, students should not participate in them if they do not care to assume the risks. Students can ask the respective program leaders/sponsors about the possible risks a program may generate, and if students are not willing to assume the risks, they should not select that program. By voluntarily participating in classes, programs, and extracurricular activities, students do so at their own risk. General information about University Risk Management policies, insurance coverage, vehicle use policies, and risk management forms can be found at <http://www.usu.edu/riskmgt/>.

Mental Health

Mental health is critically important for the success of USU students. As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Utah State University provides free services for students to assist them with addressing these and other concerns. You can learn more about the broad range of confidential mental health services available on campus at [Counseling and Psychological Services \(CAPS\)](#).

Students are also encouraged to download the "[SafeUT App](#)" to their smartphones. The SafeUT application is a 24/7 statewide crisis text and tip service that provides real-time crisis intervention to students through texting and a confidential tip program that can help anyone with emotional crises, bullying, relationship problems, mental health, or suicide related issues.