

# Chemical Principles Laboratory II

Chemistry 1225  
Dr. Harris  
Fall 2018 Course Syllabus  
1 credit

Dates		Experiment/Activity
September	10 <sup>th</sup> – 13 <sup>th</sup>	Course Policies – Safety Review
September	17 <sup>th</sup> – 20 <sup>th</sup>	Lab Drawer Check In Colligative Properties
September	24 <sup>th</sup> – 27 <sup>th</sup>	Base Hydrolysis of Ethyl Acetate
October	1 <sup>st</sup> – 4 <sup>th</sup>	Qualitative Analysis
October	8 <sup>th</sup> – 11 <sup>th</sup>	Qualitative Analysis (continued)
October	15 <sup>th</sup> – 18 <sup>th</sup>	Titration of Acids and Bases
October	22 <sup>nd</sup> – 25 <sup>th</sup>	Determination of the $K_a$ of a Weak Acid
October/November	29 <sup>th</sup> – 1 <sup>st</sup>	Determination of the $K_{sp}$ for Calcium Hydroxide
November	5 <sup>th</sup> – 8 <sup>th</sup>	Electrolysis, the Faraday, Avogadro's Number
November	12 <sup>th</sup> – 15 <sup>th</sup>	Activity Series – Lab Drawer Check Out
November	26 <sup>th</sup> – 29 <sup>th</sup>	TA/Course Evaluations – Score Check – Check Out – Final Exam
December	3 <sup>rd</sup> – 6 <sup>th</sup>	Make Up Experiment Beer's Law

Dr. Doug Harris  
Office: Widtsoe 335, (435) 797-1609  
E-mail: [doug.harris@usu.edu](mailto:doug.harris@usu.edu)

## Materials

**Lab Text (required):** "Chemistry 1225 – Chemical Principles Lab II" Catalyst –  
The Prentice Hall Custom Laboratory Program for Chemistry

**Lab Notebook (required):** "Student Lab Notebook" from the USU bookstore  
(carbon-copy pages absolutely necessary)

**Goggles, lab coats, full-length jeans with no holes, socks, and "complete" shoes are required in the laboratory.**

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.

## Grades

A score of 90% is guaranteed an A- and 95% or better is guaranteed an A. Final scores will be rounded to nearest one's place (94.4% = 94% and 94.5% = 95%).

Safety Documentation Review and Signature Sheet.....	20 points
5 Unannounced lab notebook checks @ 10 pts.....	50 points
8 Lab reports @ 20 pts.....	160 points
Final Exam.....	100 points
TA Evaluation of Student (safety, cooperation, independence) .....	50 points
<b>Total.....</b>	<b>380 points</b>

### Policies and Procedures

1. The administration of Chemistry 1225 will adhere strictly to the policies (including the issuing of incompletes) outlined in the USU 2018 – 2019 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. Service Animals in the CHEM 1225 lab: Utah State University is committed to providing access for service dog handlers. Due to the unique nature of the laboratory environment service animal handlers must meet with the Disability Resource Center prior to bringing a service dog into the lab. The purpose of this meeting is not to prevent you from having your service animal with you but rather to understand how to best accommodate your needs and the needs of your animal. Please contact the Disability Resource Center at 435-797-2444 or [drc@usu.edu](mailto:drc@usu.edu) to set up an appointment.
4. Attendance at all the assigned meetings is required. A missed experiment which has an excused absence will be made up by appointment only with the last scheduled experiment (Beer's Law). 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. Students missing an experiment will have one week to notify the TA that they have a valid excuse. A missed experiment that is not made up will be scored as zero. Only one missed experiment can be made up.
5. Individuals not wearing safety goggles, lab coats, full-length jeans with no holes, socks, and "complete" shoes (no sandals or pumps) will not be allowed in the laboratory, no exceptions.
6. All students must read and sign the Utah State University Chemistry and Biochemistry Departmental *Laboratory Safety Agreement Documentation* before beginning lab experiments.
7. Students must be registered for the lab section they attend. Failure to do so will result in an F letter grade being assigned to the university.
8. Notebooks: Students are required to keep an organized record of lab work in their lab notebooks. An experiment procedure that is detailed enough for someone else to follow and repeat the experiment should be entered into the lab notebook before starting each experiment. Your lab TA will provide additional specific information regarding the organization of what to include in the lab notebook. In order to ensure that students have reviewed each experiment and the lab notebook is properly prepared, 5 unannounced lab notebook checks will be performed at the beginning of the experiment in which the TA will call for the duplicate copy pages for the prepared experiment. All work done in the lab must be summarized in the note book. *No writing on the lab report forms is permitted during the lab periods.* All notebook entries must be in ink. Incorrect entries and mistakes should be crossed out and followed by correct entries.
9. Each lab report is due at the beginning of the next laboratory session. Late reports will be assessed a 10% penalty per week. The lab report for the final experiment (Beer's Law) will be due at the conclusion of the lab period that it is performed.
10. Students must review all lab course scores at the score check meeting time (November 26<sup>th</sup> – 29<sup>th</sup>). 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.
11. The Banner/Access system will automatically drop a student from the CHEM 1225 lab course if the student drops the concurrently enrolled CHEM 1220 lecture course. Students that have completed all of the experiments up to the Determination of the  $K_a$  of a Weak Acid (group A) or Determination of the  $K_{sp}$  for Calcium Hydroxide (group B) may make a special request to Dr. Harris to remain registered for the CHEM 1225 lab course.

### Course Objectives and Assessment

Chem 1225 laboratory experiments are designed to cover a range of general chemistry concepts covered in the Chem 1220 lecture course. The experiments deal with the determination of chemical composition and characteristics, acid/bases and their salts, spectroscopy, the characterization of reactions, and electrochemistry.

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