



Chemical Principles Laboratory I

Chemistry 1215
Dr. Harris
Spring 2012 Course Schedule
1 credit

Dates		Experiment/Activity
January	17 th – 23 rd	Course Policies – Safety Contracts – Lab Drawer Check In
January	24 th – 30 th	Basic Lab Techniques
January/February	31 st – 6 th	Separation of the Components of a Mixture
February	7 th – 13 th	Chemical Reactions – “A Greener Approach”
February	14 th – 21 st	Chemical Formulas
February	22 nd – 24 th	No labs
February/March	27 th – 2 nd	Chemical Reactions of Cu and % Yield
March	5 th – 9 th	Gravimetric Analysis of a Chloride Salt
March	19 th – 23 rd	Paper Chromatography
March	26 th – 30 th	Heats of Neutralization
April	2 nd – 6 th	Atomic Spectra
April	9 th – 13 th	TA/Course Evaluations – Grade Check
April	16 th – 20 th	Behavior of Gases

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

Materials

Lab Text (required): “Chemistry 1215 – Chemical Principles Lab I” Catalyst – The Prentice Hall Custom Laboratory Program for Chemistry
Lab Notebook (required): “Student Lab Notebook” from the USU bookstore (carbon-copy pages absolutely necessary)
CHEM 1215 course resource web site: ion.chem.usu.edu/~harrisd
Goggles, full-length pants, socks, and “complete” shoes are required in the laboratory.
 The lab fee of \$55 is used to purchase equipment and supplies for the laboratory. An additional use of the laboratory fee is to pay for the costs of laboratory supervision.

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%).

9 (best of 10) PreLab @ 10 pts.....	90 points
9 (best of 10) Lab notebook sets @ 10 pts.....	90 points
9 (best of 10) Lab reports @ 80 pts.....	720 points
Teaching Assistant Evaluation (safety, cooperation, independence).....	100 points
Total.....	1000 points

Policies and Procedures

1. The administration of Chemistry 1215 will adhere strictly to the policies (including the issuing of incompletes) outlined in the USU 2011 – 2012 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. Experiments will not be rescheduled to an earlier date and time. Make up experiments will not be offered.
4. Individuals not wearing safety goggles, full-length pants, socks, and “complete” shoes will not be allowed in the laboratory, no exceptions.
5. All students must read and sign the Utah State University Chemistry and Biochemistry Departmental *Laboratory Safety Agreement* before beginning lab experiments.
6. 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.
7. PreLab Work: the beginning of lab work will require a completed PreLab assignment. *The PreLab (one page limit) is written in the student's lab notebook and the carbon-copy is torn out and turned in to your TA at the beginning of the lab.* Permission will then be given for the student to begin work on the day's experiment. Incomplete or sloppy work will result in a delayed start and may result in incomplete experiments. In order to be fair to all class members, TAs will not allow students to remain in the lab past the scheduled ending time. The PreLab report will contain the experiment title, a short statement (1 to 2 sentences) about the objectives of the experiment, and answers to the assigned PreLab questions.
8. Notebooks: Students are required to keep an organized record of lab work in their lab notebooks. 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.* At the completion of each lab period, each student is required to hand in a copy of their lab notebook page(s). Each page must be signed and dated. These pages, along with the Lab Report, will be evaluated by the TA. Lab Reports will receive no credit in the absence of the lab notebook copies. Original notebook pages must not be removed from the binder. No blank pages may be left between lab entries and PreLab entries. All notebook entries must be in ink. Incorrect entries and mistakes should be crossed out and followed by correct entries.
9. Lab Reports: The grade in Chem 1215 is largely based on the completion of lab report forms in the Catalyst Lab text and experiments from Dr. Harris' CHEM 1215 resource web site. In addition to completing the assigned experiments, there may be additional questions to be answered at the end of the report form. *Students are to turn in the actual report forms from the Lab Text or resource web site.* Grading will reflect completeness, accuracy, and correspondence to the lab work documented in the notebook pages turned in at the completion of the lab. The 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 (Behavior of Gases) will be due at the conclusion of the lab period that it is performed.
10. Students must review all lab course grades at the grade check meeting time (April 9th – 13th). It is also recommended that students retain all graded course laboratory work. The laboratory teaching assistant will not declare a student's final lab course grade at the grade check meeting. In order to obtain the highest grade possible, all students are encouraged to complete all ten experiments. As a convenience, students may elect to check out of the lab at the grade check meeting and miss the tenth experiment (which will subsequently be dropped as the lowest scoring experiment). All students who choose to check out of the lab during the grade check meeting assume all final grade consequences of missing the tenth experiment.

Chem 1215 Assignment and Lab Study Questions		
Lab	PreLab Questions	Lab Report Questions
Course Policies – Safety Contracts – Check In – Basic Lab Techniques	No PreLab Questions	No Lab Report Questions
Basic Lab Techniques	2, 3, 8, 10, and 11 (pp. 13 and 14)	1-4 (p. 17)
Separation of the Components of a Mixture	1, 2, 5 (p. 28)	1, 2, 3, 5 (p. 32)
Chemical Reactions – “A Greener Approach”	See web site experiment (ion.chem.usu.edu/~harrisd/)	See web site experiment (ion.chem.usu.edu/~harrisd/)
Chemical Formulas	1, 4, 6, 7 (p. 43)	1-4 (p. 47)
Chemical Reactions of Cu and % Yield	1, 2, 3, 4, 5 (p. 54)	1, 4, 5, 6 (pp. 58 and 59)
Gravimetric Analysis of a Chloride Salt	1, 2, 3, 4, 5 (p. 70)	1, 2, 5, 6 (pp. 74 and 75)
Paper Chromatography	See web site experiment (ion.chem.usu.edu/~harrisd/)	See web site experiment (ion.chem.usu.edu/~harrisd/)
Heats of Neutralization	1, 2, 3, 4, 5 (p. 84)	1-4 (p. 89)
Atomic Spectra	1, 2, 3, 6 (p. 104)	3, 5, 7 (pp. 110 and 111)
Behavior of Gases	1, 2, 3, 4 (p. 121)	1 and 3 (p. 127) Gas Law Problems 3, 7, 8 (pp. 128 and 129)

Course Objectives and Assessment

Chem 1215 laboratory experiments are designed to complement the Chem 1210 lecture course. 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.

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