

## Chemistry 1230 Laboratory Fall Semester, 2005

**Professor in Charge:** Vernon D. Parker, W 345, 797-1697, vparker@cc.usu.edu  
Office hours: M, Tu, Th 1:30 – 2:30

**Teaching Assistants:**

*In accordance with the Americans with Disabilities Act, reasonable accomodation will be made for all persons with disabilities in order to assure equal participation in Chem 1230. Please meet with your Teaching Assistant and Dr. Parker during the first week of labs to make arrangements.*

**Lab Fee (required):** \$45.00 used for the purchase of equipment and supplies for the lab.

**Lab Text (required):** "Chemistry 1230 – Chemical Priniciples 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)

**Course Objectives:** Chem 1230 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, spectroscopy, chemical separations, and the characterization of reactions.

**Schedule:** (Experiment numbers refer to those in Lab text)

Lab Week 1	Exp. #1, Check in and Basic Lab Techniques	9/06-9/12 (Tu-Mon)
Lab Week 2:	Exp. #2, Separation of the Components of a Mixture	9/13-9/19 (Tu-Mon)
Lab Week 3:	Exp. #3, Chemical Reactions	9/20-9/26 (Tu-Mon)
Lab Week 4:	Exp. #4, Chemical Formulas	9/27-10/03 (Tu-Mon)
Lab Week 5:	Exp. #5, Chemical Reactions of Cu and Percent Yield	10/04-10/10 (Tu-Th)
Lab Week 6:	Exp. #6, Chemicals in Everyday Life	10/11-10/17 (Tu-Mon)
Lab Week 7:	Exp. #7, Gravimetric Analysis of a Chloride Salt	10/18-10/24 (Tu-Mon)
Lab Week 8:	Exp. #8, Paper Chromotography of Cations and Dyes	10/25-10-31 (Tu-Mon)
Lab Week 9:	Exp. #9, Heats of Neutralization	11/1-11/7 (Tu-Mon)
Lab Week 10:	Exp. #10, Atomic Spectra	11/8-11/14 (Tu-Mon)
Lab Week 11:	Exp. #11, Behaviour of Gases	11/15-11/21 (Tu-Mon)
Lab Week 12:	Exp. #12, Determination of R: The Gas-Law Constant	11/28-12/2 (Mon-Th)
Lab Week 13:	Check out	12/5-12/8 (Mon-Th)

## Chem 1230 Policies, Spring 2005

**Safety:** All students must read and sign the Utah State University Chemistry and Biochemistry Departmental *Laboratory Safety Agreement* before beginning lab experiments.

**Attendance:** Students must be registered for the lab section they are attending. Failure to do so will result in no grade being assigned (that's an F). The Individual lab sections are managed and graded by the Teaching Assistants in charge.

**Missed Labs:** These cannot be made up. Students may not attend other sections of the course. A single missed lab will be excused and grades will be averaged excluding the missed lab. Further absence from lab (unexcused) will result in a 0 grade for the lab and may constitute grounds for an "Incomplete" grade for the course. Grades for students who do not miss any labs will be the average excluding the lowest lab grade.

**PreLab Work:** Except for the first week of labs, 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 the 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. The TA's are required to close the labs in a timely fashion due to significant time and space limitations.

**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. 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.

**Lab Reports:** The grade in Chem 1230 is largely based on the completion of lab report forms in the Nelson/Kemp Lab text. In addition to completing the assigned experiments, there may be additional questions to be answered at the end of the report form.

Lab reports are due no later than one week following the actual experimental work. ***Students are to turn in the actual report forms from the Nelson/Kemp Lab Text.*** Grading will reflect completeness, accuracy, and correspondence to the lab work documented in the notebook pages turned in at the completion of the lab. Late reports will be assessed a 10% penalty per week.

**Grading:** A score of 90% is guaranteed A- and 95% or better grade an A. The course will be graded on a curve.

10 (best of 11) PreLab @ 10 pts.....	100 points
11 (best of 12) Lab notebook sets @ 10 pts.....	110 points
11 (best of 12) Lab reports @ 80 pts.....	880 points
TA Evaluation (safety, cooperation, independence).....	50 points
<b>Total.....</b>	<b>1140 points</b>

Grades will be submitted electronically when available.

***The Dean's office will not approve any registration changes after January 27, 2003. All students must be properly registered for the laboratory section they are attending in order to receive a grade for the course.***

## Chem 1230 Assignment and Lab Study Questions

Each PreLab Report (one page limit written in lab notebook):

Date and sign the PreLab pages in your notebook.

Write the title of the Experiment.

Write a short statement (1-2 sentences) about the objectives of the experiment.

Answer the questions assigned for the lab.

<u>Lab #</u>	<u>Prelab Questions</u>	<u>Lab Report Questions</u>
1	No Pre-Lab	1-4 (p. 17)
2	1, 2, 5 (p. 28)	1, 2, 3, 5 (p. 32)
3	1, 2, 5, 6 (p. 42)	balance equations 1,3,5,6 (p. 46)
4	1, 4, 6, 7 (p. 57)	1-4 (p. 61)
5	1, 2, 3, 4, 5 (p. 68)	1, 4, 5, 6 (p. 72)
6	1, 2, 3, 4, 5 (p. 82)	1-3 (p. 87)
7	1, 2, 3, 4, 5 (p. 98)	1, 2, 5, 6 (p. 102)
8	1, 2, 3, 4, 5 (p. 114)	no lab report questions
9	1, 2, 3, 4, 5 (p. 126)	1-4 (p. 131)
10	1, 2, 3, 6 (p. 146)	3, 5, 7 (p. 152)
11	1, 2, 3, 4 (p. 163)	1, 3 (p. 169)  Gas Law Problems 3, 7, 8
12	1, 2, 3, 4, 5 (p. 176)	1, 2, 3 (p. 178)

**The Prelab Report must be handed to your TA immediately upon arrival to lab. Lab work may be started when your TA approves your prelab report.**

**The Lab Report is due at the beginning of the next laboratory session.**