

Chemistry 1212K Lab
Spring Semester 2014
CRN 10240

Pre-Lab Lecture: Wednesdays 12:00 pm – 12:45 pm, 362 Petit Science Center

Laboratory: Wednesdays 12:55 pm – 3:00 pm, 355 Petit Science Center

Instructor: Dr. Julianne Caton-Williams

Office Location: 210 Courtland North (Building 9 on the GSU campus map)

Email: jcatonwilliams1@gsu.edu

NOTE: For email communication, use your official GSU email and write the course name (Chem 1212 lab) in the subject line

Office Hours: Thursday, 12:30 to 2:00 pm, or by appointment

Text: GSU Lab manual (to be distributed at first lab lecture)

A course outline, schedule of activities (p.8-11), grading (p.6) are all included in the lab manual.

Course objective

This course will reinforce concepts and stoichiometric calculations learnt in Chem 1211 and 1212 lectures and labs. Students will have the opportunity to synthesize a compound containing cobalt, NH_3 and halide (Cl^- or Br^-), and use quantitative analysis to determine the formula of their compound synthesize. The quantitative analysis will involve precipitation reactions, acid-base titrations, redox titrations, and performing stoichiometric calculations to determine the mass percent of each element in the compound analyzed. Students will also learn basic lab techniques including how to prepare solutions of known concentration, and the proper handling and disposal of acids, bases and other common chemicals.

Lab Policies:

- This lab is an individualized project-oriented lab. Students will work independently in the lab and report their own results.
- **Stitched, bound notebook is required.** Lab notebooks should be kept up to date.
- **No use of cell phones in pre-lecture and labs.**

NOTE: Leave three (3) blank pages at the front of your notebook for Table of Contents. Number and date all pages at top right of note book. **Before students can begin any lab work, lab notebooks must have a summary of the experiment in their own words including (i) purpose, (ii) materials, and (iii) experimental methods in bullet points.** TAs will check notebooks before entering lab, and students without written notes in their notebook for the lab on that day will **NOT** be allowed to enter the lab. During lab students are expected to record data in **INK** directly into their notebook. Data must NEVER be recorded in pencil or on other books/papers and later transferred to the notebook. Do not tear out pages, or whiteout data. Instead, draw a line through the incorrect data and present corrected data on another blank page

- Quizzes may be announced or unannounced, and will be closed book. No makeup quizzes will be given.
- **Safety glasses or goggles must be worn at all times inside the lab.**
- Dress appropriately. Students will not be allowed to enter the lab without appropriate clothing.
 - ✓ No open-toed shoes (flip-flops, sandals, crocks, etc.)
 - ✓ No shorts or short skirts. Legs must be covered. No caps
 - ✓ No sleeveless shirts/tops. Shoulders must be covered. Long sleeves advised. Keep on lab aprons.

- **The preparation/handling of concentrated acid or ammonia solutions must be carried out under the hood. All experiments (except titrations) must be done in the hood.** Students must handle all chemicals safely and dispose of them in appropriate waste containers.
- **Cleaning up is part of the lab session.** Students should stop working and begin cleaning up their work area, including their hood space, 20 minutes before the conclusion of the lab session. Return all checked out items to TA at least 15 minutes before the end of lab (by 3:00 pm). **Students must EXIT the lab by 3:00 pm.** Students need to put away all individual glassware and supplies in their locked drawer before leaving lab. Items left out on counters will be taken up and students will be charged for missing items at end of semester.
- **No food or drink allowed in the lab.** This includes chewing gum and candy. Put all food/drink away inside your book bag. Bags, coats, umbrellas, etc are to be stored in the compartments by the door; these items are not allowed on the floors, stools or lab counters. **Failure to follow safety rules will result in expulsion from the lab with no make-up allowed.**
- **Students must turn in reports on all calculations and data sheets (in ink) at the completion of each experiment** (p.71-83 of the lab manual) at the beginning of the following lab session. Calculations with correct significant figures and units must be included for full points. Typed final **data tables** and **sample calculations** must be included in the final lab report, including p. 67 (summary data sheet).
- No make-up labs allowed until after the semester mid-point on March 4, 2013. Each student may only have one make-up lab session. Written authorization from lab instructor is needed before making up a lab. Students will only be admitted to make-up labs if the instructor determines that there is room in the lab that day.

To pass the lab:

- Students MUST (1) **take the written lab final exam**, (2) **turn in a final lab report**, and (3) **turn in their lab notebook**. All this is due on last day of lab (during week 13) at the beginning of pre-lab lecture. It is important that students work on their lab report as experiments progress during the semester. Grading scheme is given on p. 56 of lab manual. Lab report directions are given on p. 62- 66 of lab manual. The final lab report cannot be completed in one night.

First Session:

- Orientation, Safety, check-in, crucibles weight experiment (pages 69 and 71 of the lab manual) Students should remove page 71 of the lab manual and affix it to the lab notebook as **page 2**. Students should remove page 69 of the lab manual and affix it to the lab notebook as **page 4**, following the table of contents on page 1. This experiment must be dated (at top right), and a similar format should be used for the rest of the experiments to be performed throughout the semester.

Sessions 2 through 12:

- Preparation and determination of the formula for a cobalt-amino-halide complex and determination of unknown concentrations and mass percentages.

Session 13:

- Final exam and check out. Final report (including the table on page 67 of the lab manual) and lab notebook due at this time. Graded lab notebooks may be picked up from the lab instructor in the first week of the following semester, after which time they may be discarded. Graded final exams and final reports can be viewed in the instructor's office but will not be returned to the students.

No grades will be given via e-mail or by phone.

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I have read the entire syllabus and understand the grading system and agree to abide by the course policies and all the additional information provided in it, including the following:

- **No make-up tests or quizzes** will be given.
- Students need to show their GSU Panther I.D. card when taking exams and quizzes.
- The instructor reserves the right to assign seating during exams and quizzes.
- Cell-phone calculators and programmable calculators are not allowed.
- Cell-phones need to be kept either in purses or book-bags during exams or quizzes, and should be turned off at all times.

- **The preparation/handling of concentrated acid or ammonia solutions must be carried out under the hood.** Unused concentrated acid or ammonia solutions must be diluted by adding them to water, under the hood. The amount of water to be used in the dilution depends on the amount of reagent needed to be diluted so it will not fume (about 1 in10 dilution). The diluted solutions will be discarded in the waste drum located in the lab. Glassware used for the preparation/handling of concentrated acid or ammonia solutions must be rinsed with enough water, under the hood, and the combined rinses must then be placed in the waste drum.

- **Preliminary reports on all calculations, in ink, must be submitted at the time of the completion of each experiment** (due dates in syllabus), and a typed version must be included in the appendix section of the final report; otherwise, you will be assigned the minimum amount of points for those experiments not submitted (if you have supporting data in your lab notebook). Preliminary report forms are found in the last pages of the lab manual, one for each experiment needing calculations. **For full points show sample calculations with correct significant figures and units.**

- **The clock schedule for the lab must be followed.** Students are not to enter occupied labs before the scheduled start time of the lab itself. *For each scheduled lab section, clean-up must be completed by the end time of the lab so as not to disrupt the next class.*

- **Make-up lab policies are posted** on the door outside the lab, and will only be allowed after **March 4, 2014** if space available. A written authorization from your lab instructor is required.

Name (print in ink): _____
Signature (in ink): _____
Date: _____

Deviations from this syllabus may be required!