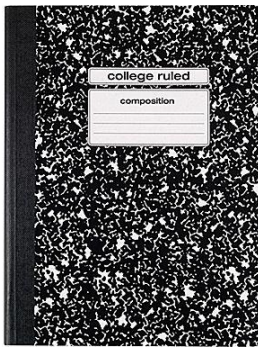
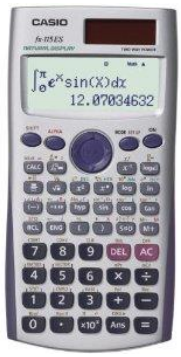
CHEM 1212 LAB, SUMMER 2017

Instructor: Dr. Weiwei Guo
Email: wguo9@gsu.edu
Office: 926 Langdale Hall
Office Hours: T&R 3:00-5:00 pm

Lab Lecture: T&R 10:00 am – 10:45 am, 362 Petit Science Center
Laboratory: T&R 10:55 am – 1:25 pm, 355 Petit Science Center

REQUIRED TEXT and LABORATORY MATERIALS
(1) Chem. 1212 Lab Manual (**available free during first lab**, includes course outline, schedule of activities, grading)
(2) Stitched composition notebook
(3) Safety glasses/goggles
(4) Non-programmable calculator





GRADING see page 6 of 1212 Lab Manual

Comments on Lab:
1. This is an individualized project-type lab

2. Lab notebooks should be kept up to date. **Bound notebook required**. Leave two pages blank at the front of the notebook for a Table of Contents. All pages must be numbered and dated. All data must be recorded in this notebook **in black or blue ink**.

3. Quizzes may be announced or unannounced and will be closed book. **Always bring your non-programmable calculator with you to lab.**

4. Before lab each week, students are responsible to read and write in their lab notebooks about each experiment beforehand (We will be following the schedule on the table below). **A summary in your own words about the experiment including purpose, materials, and experimental methods must be written in the notebook before beginning the experiment.** TAs will check your notebooks before pre-lab lecture, and students without written notes in their notebook will not be allowed to perform labs. During lab, students are expected to **record data in ink into the notebook**. **Data must NEVER be recorded in pencil/or on other books/papers, and later transferred to the notebook.**

5. Safety glasses required at all times in the lab.

6. Dress appropriately. Students will not be allowed in the lab without appropriate clothing.

a. No open-toe shoes (flip-flops, sandals, crocs, etc.)
b. No shorts/ short skirts

7. **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. Points will be taken off for lab benches or fume hoods not cleaned. Students must exit the lab before or by the schedule ending time.

8. No food and drinks allowed in the lab. Failure to follow safety rules will result in **expulsion from the lab with no make-up allowed.**

9. All the liquid waste generated during labs must be placed in the proper waste container. Check lab manual for each lab session. **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 then 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 appropriate 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 appropriate waste drum.**

10. Missing labs without valid excuses and documentations will be charged credit.

To pass the lab: Students MUST
(1) **Take the lab final exam** on **07/20.**
(2) **Turn in the lab report** before taking final lab exam.
(3) **Turn in notebook** before taking the final lab exam. It is important that students work on the lab report as experiments progress during the semester. Grading distribution is on page 6 of lab manual.

First Session: Safety, synthesis assignment, check-in, and crucibles weight experiment.
During our 1st lab, pages for the crucible experiment will be distributed. These will be cut and taped into lab notebook as your first experiment. The instructor will check for these taped pages in your notebook on the second week of lab.

Sessions 2 through 11: Preparation and determination of the formula for a cobalt-amino-halide complex and determination concentration of unknowns.

Session 12: Final report and lab notebook will be due at this time.

Session 12: Final exam and check out.

Note: If you withdraw from the class or stop attending the lab, you still MUST check out. If you do not, you will be charged for the procedure to be done without you.*
Graded final exams and final reports can be viewed at the instructor's office, but will not be returned to the students. **No grades will be given via e-mail or by phone.**

I reserve the right to make changes to this syllabus during the semester with appropriate class notification.

Session	Date	Pages	LAB ACTIVITY
1	06/08	61-62 72-74	Check-in, safety, synthesis assignments. Begin to heat, dry and weigh crucibles to obtain their empty weight. Store Gooch crucibles in desiccator until later usage.
2	06/13	17-22	Continue weighing crucibles if necessary. Begin particular synthesis procedure assigned by instructor.
3	06/15	17-22	Complete assigned synthesis procedure Collect product and record its color and procedure used. Gently pulverize product, and blend briefly; Store in open weighing boat in order to air dry product for one session before final weighing.
4	06/20 **(Quiz 1)**	23-24	Weigh air dried synthesis product and store in a vial. Complete procedure for precipitation and determination of % halide in Co-compound. Collect AgCl ppt in Gooch crucibles. Heat in oven, cool in desiccator, and get first weight of crucible + AgCl ppt.
5	06/22	25	Prepare stock HCl solution and mix thoroughly before storing in 500 mL bottle in desk. Perform THAM titrations using HCl solution. *Get final weight of crucible + ppt (to within + or - 0.0005 gram of previous weight).
6&7	06/27 & 06/29 **(Quiz 2)**	26-28	Prepare three solutions of boric acid. Set up distillation apparatus. Distill NH_3 from separate samples into the respective boric acid solutions. Titrate each boric acid + NH_3 sample with 0.3M HCl.
8	07/06 **(Quiz 3)**	29-31	Spectrophotometric determination of % cobalt.
9	07/11 **(Quiz 4)**	32-33	Prepare stock $Na_2S_2O_3$ solution. Weigh and prepare triplicate KIO_3. Dissolve KI and complete titration with $Na_2S_2O_3$.
10	07/13	38	Determination of % H_2O_2 in commercial H_2O_2 solutions.
11	07/18 **(Quiz 5)**		Complete all remaining work
12	07/20		Hand in final report and notebook. Laboratory final exam. Check out.