



Principles of chemistry I lab: CHEM 1211K 4 credit hours

Instructor:

Dr. Yao Xin (E-mail: yxin3@gsu.edu)

Lab Time: 12:00-12:45pm Pre-lab lecture 12:45-3:00 Lab

Pre-lab Lecture: PSC362 **Lab:** PSC360

Office Hours: MW10:40 - 12:10 pm or by appointment.

Office: Langdale Hall 861

Lab Coordinator: Dr. Bin Xu bxu6@gsu.edu;

Course Objective:

Gain hands-on experience in scientific observation, measurement and analysis using different mass and volumetric instruments and spectrometers. Learn basic techniques including recrystallization, titration and pK_a measurements. Learn to write ACS-style laboratory reports.

Course Materials:

A laboratory manual titled "The identification of an organic acid" and edited by Dr. Pedro C. Vasquez will be provided at the check in date.

Class Attendance:

Students are required to attend all laboratory sessions including a pre-lab lecture. Signing in and out of each laboratory are required. No make-up labs. Week 8 can be used as make up section. Computer search takes about 20 mins. **First day of lab is Tuesday Jan 22.** Students must show up by the week of 2/5.

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General Rules:

Safety is the first priority in the laboratory.

- No food and drinks allowed in the lab.
- Always wear your Safety glasses in the lab.
- Do not wear open-toe shoes, shorts or short skirts.
- Remember to clean up after using the balance or other shared equipment.
- Use bound notebook write your name and desk number on the front cover. Leave one blank page for table of content. Before each lab, write the pre-lab summary including title, purpose, and procedure. Record the original experiment data and related calculations using pen. Keep your notebook clean and do not spill chemicals on it. Number and date each page of the notebook and get the signature from TA at the end of each lab. Your notebook will be collected and graded at the end of the semester.
- Final exam and lab report are required to get a grade for the lab. It is recommended to start writing the lab report after week 8.
- Sign in and Sign out for each lab.
- Graded sheet will not be returned.
- No grades will be given via e-mail or by phone.

Grading:

All total of 200 points will be added to your 1211 lecture grades.

Final examination 40*

Notebook 10*

Study Questions and Quizzes 15

Final report (overall) 25*

Experiment results and analysis 110

Final examination, notebook, and final report are required to obtain a grade

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Laboratory Report Guideline:

Students should analyze the data and write each report independently. If the report is not turned in on time, 5% off for each past-due day. Reports over 2 days overdue will not be accepted for grading. A guideline for writing the lab report in on Page 5 of the lab manual.

Chemistry Department's Student Integrity Policy:

All assignments including lab reports, exams and tests taken must represent your individual, unaided efforts. Receiving unauthorized outside information or offering unauthorized information to another student during an examination is cheating. Any suspected offenses will be reported to the Department of Chemistry and the College of Arts and Sciences for appropriate action.

Tentative Schedule:

On Page iii (the second page) of the lab manual. There may be minor changes according to the class announcements. In summary, the first two lab is safety training and density experiment. Lab 3-12 term project: identification of unknown organic acid. Lab13: Lab final exam and check out.

Week 1: Safety training and check in

Week 2: Safety exam and density experiment (report sheet on p79 of lab manual)

Week 3: Recrystallization experiment

Week 4: Begin term project: Melting point measurement (report sheet)

Week 5-6: KHP and HCl titrations

Week 7: Equivalent weight

Week 8: Computer search and make up lab

Week 9-12: pKa titration and sodium fusion test

Week 13: Lab final exam and check out. Final report and lab notebook due.