

Chem 4000/6000 Lab-Online Spring 2021

FUND OF CHEMICAL ANALYSIS

Instructor: Dr. Tarushee Ahuja

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Send email from your GSU email account only, and mention the course in the subject

Check your iCollege page on the daily bases.

Office Hours: By Appointment **iCollege-Collaboration- WebEx-Virtual office hours**

Please email to set up an appointment

Lab Lecture Time: Through WebEx-Virtually on Lab time (first 30 min). Recorded videos will also be available on the lab time if necessary.

Lab Time: **Monday Section:** 9.00am to 12.15 pm, Virtual

Tuesday Section: 1.00pm to 4.15 pm, Virtual

Text: GSU Lab manual (will be uploaded in first week). A course outline, schedule of activities, grading, etc., is included in the lab manual.

Course Description:

This lab course will be held entirely online. Videos, assignment, data etc will be uploaded on icollege on weekly basis. Students have to watch the lecturer videos to understand the concept, instrumentation and working of each experiment. Students have to analyze the data and write a report based on ACS format and submit to the instructor online via email. Once instructor graded the report, students have to resubmit the report after the correction needed.

Steps to follow:

- Attend Lab Lecture-first 30 min of Lab
- Watch videos of concept, instrumentation and working
- Acquire data
- Make tables, figures and analyze data
- Write lab report and submit as per date of submission

Grading/Requirements:

- Four papers will be written using real data obtained in each corresponding week. The papers will be returned with comments and students will be allowed to re-write, revise and re-submit the paper within one week from the date of paper returning.
- **Due date will be announced in lecture.**
- Students will be able to resubmit paper #1 twice and papers #2 once. There is no resubmission for paper #3 and #4. The highest score is counted for each corresponding paper.

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- Students are required to write each paper independently, analyzing their own data and discussing accordingly. IT IS NOT PERMITTED TO USE OTHER PEOPLE'S DATA/DISCUSSION IN THE PAPER WITHOUT MENTION. If that happens, it will be considered cheating and zero score will be given on this paper.
- A past-due penalty will be given, 2 pts off for each past-due day.
- Each paper counts 15% of the final Lab score (each paper 100 pts), including the paper writing. The total lab score counts 50% of the final course score.

Lab Experiment Schedule: This lab course is divided into 4 units mentioned below. Assignments will be uploaded for each unit separately.

Unit 1: Error and statistical analysis;

Unit 2: Acid-base titration: standardization of prepared HCl and NaOH solution; determination of the acid mixture composition of HCl + HAc;

Unit 3: Titration of phosphoric acid w/ and w/o Mg^{2+} ; the effect of metal ion existence on acid titration (multiple-equilibrium);

Unit 4: EDTA standardization; metal-EDTA complex titration; determination of the metal ion mixture composition.

Chemistry Department Student Integrity Policy:

The Department of Chemistry follows the university policy on academic honesty published in the "Faculty Affairs Handbook" and the "On Campus: The Undergraduate Co-Curricular Affairs Handbook." All tests and quizzes taken and reports submitted must represent the student's individual unaided effort. To receive or offer information during an examination will be considered cheating. Any suspected offenses may be referred to the Department Chair for appropriate action. Classes will never be canceled unless an official from the Chemistry Department gives the class personal notification. Don't assume a note to be enough without checking with the Department office (404-413-5500, PSC 383).

The University requires that faculty members must, on a date after the mid-point of the course to be set by the Provost (or his designee): 1. Give a WF to all those students who are on their rolls but no longer taking the class 2. Report the last day the student attended or turned in an assignment. Students who are withdrawn may petition the Department Chair for reinstatement into their classes.

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Tentative Lab schedule

Week	Units	Experiment	Report submission
1	Welcome	Introduction, Syllabus, Report writing	
2	Experiment-1	Statistical Nature of Data	
3	Experiment-1	Statistical Nature of Data	
4	Experiment-2	Proton Transfer Reactions	
5	Experiment-2	Proton Transfer Reactions	Lab Report #1 Submission 1
6	Experiment-2	Proton Transfer Reactions	
7	Experiment-3	Metal-Ligand Reactions	Lab Report #1 Submission 2
8	Experiment-3	Metal-Ligand Reactions	Lab Report #2 Submission 1
9	Experiment-4	Analysis for metals by complexation of metal ions with EDTA	Lab Report #1 Submission 3
10	Experiment-4	Analysis for metals by complexation of metal ions with EDTA	Lab Report #3
11	Experiment-4	Analysis for metals by complexation of metal ions with EDTA	Lab Report #2 Submission 2
12	Experiment-4	Analysis for metals by complexation of metal ions with EDTA	Pending if any
13	Wrap up	Catch-up	
14	Final week	Final Submissions	Lab Report #4