Syllabus

CHM 3120L ANALYTICAL CHEMISTRY LABORATORY

Summer 2022

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Course Website: Canvas; Please visit the website regularly for announcements and resources. Everything is posted under "Files"
Videos available at: https://www.chem.ufl.edu/undergraduate/courses-and-curriculum/chemistry-laboratories/analytical/

Required Materials

Laboratory Manual: No lab manual is required. All materials will be posted on the e-learning site, under Files.
Laboratory Notebook: Any sensible laboratory notebook, to be used only for this lab, is suitable. You will turn in scans or photos of your notes, retaining the original notebook for your own use. Please be sure that what you submit is legible and clear.
Laboratory Attire: The Essentials: Long, loose-fitting pants, full shirt, shoes which cover the feet, departmentally-approved safety glasses, tie-back for long hair.

Course Objectives

CHM 3120L is an introductory laboratory course in Analytical Chemistry. By the end of the semester, students are expected to demonstrate:

- proper laboratory techniques for quantitative chemical measurements including accuracy on unknowns
- knowledge of a select group of analytical methods
- competence in data analysis, statistics and preparation of professional laboratory reports

In response to COVID-19, the following recommendations are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

- If you are not vaccinated, get vaccinated. Vaccines are readily available and have been demonstrated to be safe and effective against the COVID-19 virus. Visit one.uf for screening / testing and vaccination opportunities.
- If you are sick, stay home. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 to be evaluated.
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

Grading

Your grade will be determined by the accuracy of your results, the quality of your reports, the quality of your laboratory notes, your competence in essential laboratory manipulations, and your performance on written quizzes. Grades will be posted in the Canvas gradebook.

Accuracy	6 @ 35 points	210
Questions, Reports and Notes	7 @ 70 points	490
Practical Exams	3 @ 40 points	120
Written Quizzes	3 @ 45 points	135
		955 total

The following grading scale will be used:

Letter Grade	Percentage	Letter Grade	Percentage	Letter Grade	Percentage
A	≥93	B-	≥80	D+	≥67
A-	≥90	C+	≥77	D	≥64
B+	≥87	C	≥73	E	<60
B	≥83	C-	≥70		

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There may be a curve, there may not be a curve.

Notes:

1) Prior to the first lab, visit the e-learning site and review Preliminary Handouts 1-3, 5: laboratory safety, basic lab rules, laboratory notebook, and fundamental techniques. Also read the handout for Experiment #1.

2) You will need to bring a copy of the lab experiments to your lab period. This can be done with either a print out, on a tablet or a laptop. It is advised not to use your phone.

3) On the first day, you select a workstation. This is where you will complete your experiments. Everything you will need will be at that station.

4) A minimum of 18 out of 35 accuracy points will be given if the experiment is performed, the results are calculated correctly, and deadlines are met. For labs with an unknown number, the number must be reported or will get an accuracy score of zero.

5) For labs 1-5, there will be questions at the end of the lab handout. You will turn in the answers to these questions and calculations along with your results, tabulated and presented nicely. Starting with lab 2, you will be asked to write a section of a lab report (Intro, Experimental, Results and Discussion and Conclusion) with each lab. For lab 6 and 7, you will be writing a full lab report. More details will be given about each section as the semester goes on. There are some examples of lab reports on Canvas. Videos covering scientific writing will be posted to Canvas.

6) Lab reports and answers to questions must be typed. By lab 2, all calculations must be shown through Microsoft Equation Editor.

7) A copy of your lab notes must be submitted with your reports.

8) Lab reports are due at the specified time on Canvas for your section

9) A 10% penalty off the final score of the report will be assessed each time a result or report is submitted late. The maximum permissible late time is one week.

10) All written work (late or otherwise) must be received by 3:00 PM on Friday, 4/15/22.

11) Each student is expected to pass laboratory practical exams on three essential analytical skills (use of the analytical balance/weighing by difference, quantitative transfer/use of a volumetric flask and use of a pipets). The tests will be given by the TA during the regular laboratory period at times mutually acceptable to both the student and the TA.

12) Three written quizzes will be given on the dates specified on the schedule. Quizzes will be given on Canvas. They are open note, but you must work alone. If you wish to go over your quiz, please contact your TA. The questions in your lab write ups will greatly help you prepare for the quizzes.

13) Attendance is required at all scheduled laboratory periods, unless you are informed otherwise by your TA or the instructor.

14) Plagiarism will not be tolerated. Students are expected to obey the University of Florida Honor Code, detailed at

The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructors or TAs in this class.
You are required to abide by the Student Honor Code. Any violation of the academic integrity expected of you will result in a minimum academic sanction of a zero on the assignment. Any alleged violations of the Student Honor Code will result in a referral to Student Conduct and Conflict Resolution. Please review the Student Honor Code and Student Conduct Code at https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code

15) Make-ups will be granted only when justified. If you know ahead that you will have to miss lab, notify your TA and Dr. Jacobs in advance. If you are sick and cannot reach anyone before lab, you will have to present written evidence of the illness. ***If you are not feeling well, do not come to lab***.

16) If you are involved in a laboratory accident, you must go to the infirmary for treatment.

17) Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

Course Fees: You have already paid this, but the fee for this course is $45.00

Laboratory Schedule

Note: Note that the schedule may change due to weather/holidays/pandemic

Dates (starting date)	**Preparation**	**Lab Work**	**Quizzes**	**Results Due**
Begin May 9th Week 1		No lab (add/drop week)		
Week 2 (May 16th)	Read Handouts 1-6 Read Experiment 1	Check in Experiment 1 Balance use Pipet use/calibration		
Week 3 (May 23rd)	Read Handout 7 Read Experiment 2	Begin Soda Ash Titrations HCl/NaOH titrations		Experiment 1 results and lab notes
Week 4, week of May 30th		No lab due to Memorial Day		
Week 5 (June 6th)		KHP/NaOH titrations Finish Soda Ash	Quiz 1 and Deadline for Weighing Practical	
Week 6 (June 13th)	Read Experiment 3 Review handouts to prepare for Quiz 1	Beer's Law measurement		Soda Ash questions, results, Introduction and notes due
Week 7, week of June 20th		No Lab, summer break		
Week 8 (June 27th)	Read Experiment 4	Spectrophotometric Fe	Quiz 2 Deadline for Pipetting Practical	Beer's Law questions, results, Experimental and notes due
Week 9, week of July 4th		No lab due to 4th of July holiday		
Week 10 (July 11th)	Read Experiment 5	Chloride Ion Selective Electrodes		Spec Fe questions, results, Results and Discussion and notes due
Week 11 (July 18th)	Read Experiment 6	Fluorescence of Quinine; Standard additions and Determination of quinine in cinchona bark	Quiz 3 Deadline for volumetric flask practical	ISE questions, results, Conclusion and lab notes due
Week 12 (July 25th)	Read Experiment 7	Chromatography of Soda		Quinine in tonic water report and notes due
Week 13 (August 1st)				Chromatography of Soda report and notes due