

# Syllabus

## CHM 3120L ANALYTICAL CHEMISTRY LABORATORY

### Fall 2020

Faculty Instructor: Dr. Alexander Jacobs, Leigh 202A  
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Zoom by appointment

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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

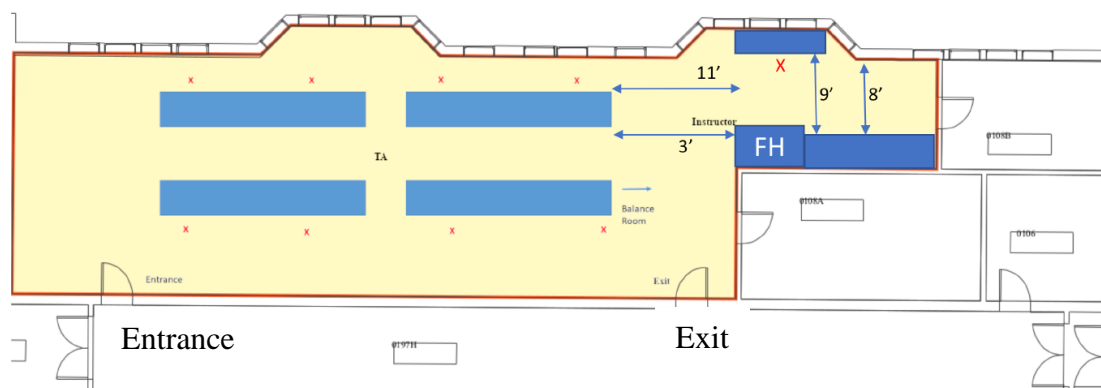
**Laboratory Manual:** No lab manual is required. All materials will be posted on the e-learning site, under Files. Print outs of the lab will be at your personal station

**Laboratory Notebook:** Any sensible laboratory notebook, to be used only for this lab, is suitable. You will turn in images of your notes, however, we will just check before you leave lab. 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.

**COVID-19 PPE** We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions:

You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution. You are required, at all times, to wear gloves and goggles. Gloves will be provided. Gloves will be disposed of when you leave the lab in the designated waste by the exit. No materials can leave the lab. That means notebooks, pens, calculators, etc. must remain in the lab. Your phone can be used to take pictures of your notes. Disinfecting wipes will be provided to clean your phones before you leave. UF Chemistry Band hand sanitizer will be available in the lab. You will enter through the door on the south end of LEI 108 and exit from the door on the north end (see diagram below)



**Plaza of the Americas on this side of Leigh Hall**

### 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
- learning the basics of laboratory report writing, figure making and data interpretation

### Grading

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

Accuracy	3 @ 45 points	135
Questions, Reports, at home assignments and Notes	8 @ 70 points	560
Written Quizzes	3 @ 45 points	<u>135</u>
		830 total

The following grading scale will be used:

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

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) A copy of the experiment will be at your station. You do not need to bring in a copy
- 3) Prior to the first lab, you will be notified about which lab rotation you are in (A or B). The appropriate schedule is at the bottom of the syllabus. You will alternate weeks in the lab, one week in lab, one week with an at home assignment.
- 4) Prior to lab, you be assigned a workstation in the lab. This is where you will complete your experiments for your in-person assignments. Everything you will need will be at that station.

- 5) Remember the rule of 6. There should always be at least 6 floor tiles between you and someone else. The tiles are 12"x12", so 6 tiles is 6 feet apart. The benches are 5 ft long on the short side, please keep this in mind.
- 6) 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.
- 7) Each lab will be accompanied by questions at the end of the lab and 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.
- 8) Lab reports and answers to questions must be typed. By lab 2, all calculations must be shown through Microsoft Equation Editor.
- 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. Lab reports are due at the specified time on Canvas for your section
- 10) Four written quizzes will be given on the dates specified on the schedule. You will be allowed to see your graded written quiz, but it must be returned to the TA before leaving lab. The questions in your lab write ups will greatly help you prepare for the quizzes.
- 11) Attendance is required at all scheduled laboratory periods, unless you are informed otherwise by your TA or the instructor.
- 12) Plagiarism will not be tolerated. Students are expected to obey the University of Florida Honor Code, detailed at <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>.
- 13) 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.
  - a. **If you are experiencing COVID-19 symptoms** ([Click here for guidance from the CDC on symptoms of coronavirus](#)), please use the UF Health screening system and follow the instructions on whether you are able to attend class. [Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms.](#)
  - b. **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.** [Find more information in the university attendance policies.](#)
- 14) If you are involved in a laboratory accident, you must go to the infirmary for treatment.
- 15) 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 (A)

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

Dates (starting date)	Preparation	Lab Work	Quizzes	Results Due
<b>Begin Aug 31st</b> Week 1	No lab			
Week 2 (Sept 7 <sup>th</sup> ) (No Monday lab)	Read Handouts 1-3,5,6 Read Experiment 1 Watch video: Lab Techniques	Check in Experiment 1 Balance use Pipet use/calibration		
Week 3 (Sept 14 <sup>th</sup> )		At home assignment 1	Quiz 1	Experiment 1 results and lab notes on Canvas
Week 4 (Sept 21 <sup>st</sup> ) (Monday lab, experiment 1)	Read Experiment 2	Prep NaOH and HCl Standardize KHP		At home assignment 1 due
Week 5 (Sept 29 <sup>th</sup> )		At home assignment 2		
Week 6 (Oct 5 <sup>th</sup> )		Continue Lab 2	Quiz 2	At home assignment 2 due
Week 7 (Oct 12 <sup>th</sup> )		At home assignment 3		Titration questions, results, <u>Introduction</u> and notes due
Week 8 (Oct 19 <sup>th</sup> )	Read Experiment 3	Spectrophotometric Fe		At home assignment 3 due
Week 9 (Oct 26 <sup>th</sup> )		At home assignment 4	Quiz 3	Spec Fe questions, results, <u>Experimental</u> and notes due
Week 10 (Nov 2 <sup>nd</sup> )	Read Experiment 4	Chloride Ion Selective Electrodes and check out		At home Assignment 4 due
Week 11 (Nov 9 <sup>th</sup> )				ISE questions, results, <u>Results and Discussion</u> and notes due
Week 12 (Nov 16 <sup>th</sup> )	<u><i>Monday and Friday</i></u> <u><i>Complete lab 4</i></u>			

## Laboratory Schedule (B)

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

Dates (starting date)	Preparation	Lab Work	Quizzes	Results Due
<b>Begin Aug 31st</b> Week 1		No lab		
Week 2 (Sept 7 <sup>th</sup> )		At home assignment 1		
Week 3 (Sept 14 <sup>th</sup> )	Read Handouts 1-3,5,6 Read Experiment 1 Watch video: Lab Techniques	Check in Experiment 1 Balance use Pipet use/calibration	Quiz 1	At home assignment 1 due
Week 4 (Sept 21 <sup>st</sup> )		At home assignment 2		Experiment 1 results and lab notes on Canvas
Week 5 (Sept 29 <sup>th</sup> )	Read Experiment 2	Prep NaOH and HCl Standardize KHP		At home assignment 2 due
Week 6 (Oct 5 <sup>th</sup> )		At home assignment 3		
Week 7 (Oct 12 <sup>th</sup> )		Continue Lab 2	Quiz 2	At home assignment 3 due
Week 8 (Oct 19 <sup>th</sup> )		At home assignment 4		Titration questions, results, <u>Introduction</u> and notes due
Week 9 (Oct 26 <sup>th</sup> )	Read Experiment 3	Spectrophotometric Fe		At home assignment 4 due
Week 10 (Nov 2 <sup>nd</sup> )			Quiz 3	Spec Fe questions, results, <u>Experimental</u> and notes due
Week 11 (Nov 9 <sup>th</sup> ) (No Wednesday lab due to Veteran's Day)	Read Experiment 4	Chloride Ion Selective Electrodes and check out		
Week 12 (Nov 16 <sup>th</sup> )	<b><u>Wednesday complete lab 4</u></b>			ISE questions, results, <u>Results and Discussion</u> and notes due