

**CHM 3120**  
**Syllabus**  
**Introduction to Analytical Chemistry**  
**Summer 2021**

Instructor: Dr. Alex Jacobs, Leigh 202A (office is inside the lab)  
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Office Hours: Wednesday 3-4  
Zoom ID: 882 880 7636  
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Graduate TAs:  
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Lectures: T/W/F Period 3 (11:00-12:15), in CLB130 or from the comfort of your home on Zoom

Optional textbook: Quantitative Chemical Analysis, 10<sup>th</sup> edition, Daniel C Harris, Freeman, 2020

Free option: Analytical Chemistry 2.1, David Harvey  
[https://chem.libretexts.org/Bookshelves/Analytical\\_Chemistry/Book%3A\\_Analytical\\_Chemistry\\_2.1\\_\(Harvey\)](https://chem.libretexts.org/Bookshelves/Analytical_Chemistry/Book%3A_Analytical_Chemistry_2.1_(Harvey))

(made possible by the Analytical Sciences Digital Library)

### **Course Objectives**

In this course, you will be introduced to the basics of analytical chemistry and how analytical techniques are used to make quantitative measurements. Lectures will emphasize both classical and modern techniques, with a greater focus on modern methods and recent developments. Statistical analysis and interpretation of data will also be covered. Some topics of quantitative analysis will be covered as well.

### **Grades**

Grades will be determined by a point distribution:

Exams (100 pts each 3 total)	300 pts
Final Exam (100 pts)	100 pts
Total	400 pts

Grades in this course will be on a straight scale as shown below. A curve may be applied at the end of the term if the professor deems it necessary.

<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		

Extra credit will be given in the form of the passwords on zoom. Starting week 2 there will be a theme to the passwords. At the end of the week, a quiz will open asking for the theme of the passwords. Each extra credit opportunity is worth 1 point.

### **Exams:**

Canvas exams will be given 4 times throughout the semester. The exams will be take home exams and will be open note, but you must work alone. You will have 24hrs to complete the exam. The exams will be posted at midnight on the exam day and close at 11:59 pm the same day. The turn in portal will also open and close at the same time. Exams are a mixture of multiple choice and free response.

### **Grading:**

If you believe there was an error in grading, please see myself or the TA within 1 week of having the exam returned to you. We do our best to ensure that the grading is fair for all students.

### **Attendance:**

This course is taught Hyflex. You should plan to attend all lectures in person or via Zoom at the normal meeting time. Powerpoint lectures may not contain 100% of the information provided in class. All lectures will be recorded and uploaded for your convenience. If you must be absent due to sporting events, family matters, religious obligations, etc. please let me know as soon as possible. If you are sick and will not be able to take your exam during the allotted time, please inform me by email and if possible, provide a note from a doctor or medical professional when you are well. Make up exams will only be given if appropriate documentation is provided. If you are going to be late, please keep your sound and camera off.

For those attending in person:

### **COVID-19 Protocol**

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.

This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals at minimum, 8+ preferred) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations. Every other row should be vacant, with 2 being optimal.

Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.

Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.

**Classroom Accommodations:**

Students needing classroom accommodations must first register with the Dean of Students office. The DSO will provide documentation to the student who must then provide this documentation to me when requesting the accommodation.

**Canvas:**

All lectures, grades, practice exams and other files will be posted to Canvas. Lecture powerpoints will be posted under "Files"

**Academic Honesty:**

The Honor Code (<https://sccr.dso.ufl.edu/process/student-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.

## Tentative Schedule

Date	Topic	Chapter(s)
5/11	Introduction, Course Overview	0 and 1
5/12	Units and Chemical Measurements	1
5/14	Tools	2
5/18	Errors and Sigfigs	3
5/19	Sigfigs Continued	4
5/21	Statistics	4
5/25	Statistics	4
5/26	Quality Assurance and Calibrations	5
5/28	Review	
6/1	Exam 1	(Chapters 0-5)
6/2	Introduction to Spectroscopy	18
6/4	Introduction to Spectroscopy	18
6/8	Fundamentals of Spectroscopy	18
6/9	Spectroscopic Instrumentation	20
6/11	Spectroscopic Instrumentation	20
6/15	Atomic Spectroscopy	21
6/16	Atomic Spectroscopy	21
6/19	Applications of Spectroscopy	19
6/22	No Class-Summer Break	
6/23	No Class-Summer Break	
6/25	No Class-Summer Break	
6/29	Review	
6/30	Exam 2	(Chapters 18-21)
7/2	No class (4 <sup>th</sup> of July weekend)	
7/6	Fundamentals of Electrochemistry	14
7/7	Electrodes and Potentiometry	15
7/9	Electrodes and Potentiometry	15
7/13	Cyclic Voltammetry	17
7/14	Cyclic Voltammetry	17
7/16	Applications of Electrochemistry	
7/20	Review	
7/21	Exam 3	(Chapters 14-17)
7/23	Separations	23
7/27	Liquid Chromatography	25
7/28	Liquid Chromatography	25
7/30	Gas Chromatography	25
8/3	Review	Review
8/4	Final	(Chapters (22-25))