

CHM 3120
Syllabus
Introduction to Analytical Chemistry
Summer 2020

Instructor: Dr. Alex Jacobs, Leigh 202A (office is inside the lab, not like I can be there)
jacobsa@chem.ufl.edu Phone: 352-392-0528
Office Hours: Monday and Friday 2-3 pm
Also available to have a 1:1 Zoom meeting

Graduate TAs:

Jiaqiang "Jake" Zhu jiaqiang.zhu@chem.ufl.edu Office Hours: Wednesday 11 am-12:30pm

Russell Lewis rllewis@chem.ufl.edu Office Hours: Tuesday 10 am-11 am

Tong Huang tonghuang@chem.ufl.edu Office Hours: Thursday TBD

Lectures: M/W/F Period 2 (9:30-10:45), from the comfort of your home on Zoom

Optional textbook: Quantitative Chemical Analysis, 10th 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		

Exams:

Canvas exams will be given 3 times throughout the semester. Due to the nature of Canvas, the exams will be open note, but you must work alone. Each exam will be timed and you can only take it once. The exams will be open for the day of the exam, and close at midnight.

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:

You should plan to attend all lectures 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.

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
5/13	Units and Chemical Measurements	1
5/15	Tools	2
5/18	Errors and Sigfigs	3
5/20	Sigfigs Continued	4
5/22	Statistics	4
5/25	No Class	
5/27	Statistics	4
5/29	Quality Assurance and Calibrations	5
6/1	Review	
6/3	Exam 1	(Chapters 0-5)
6/5	Introduction to Spectroscopy	18
6/8	Introduction to Spectroscopy	18
6/10	Fundamentals of Spectroscopy	18
6/12	Spectroscopic Instrumentation	20
6/15	Spectroscopic Instrumentation	20
6/17	Atomic Spectroscopy	21
6/19	Atomic Spectroscopy	21
6/22	No Class-Summer Break	
6/24	No Class-Summer Break	
6/26	No Class-Summer Break	
6/29	No Class-Summer Break	
7/1	No Class-Summer Break	
7/3	No Class-Summer Break	
7/6	Applications of Spectroscopy	19
7/8	Review	
7/10	Exam 2	(Chapters 18-21)
7/13	Fundamentals of Electrochemistry	14
7/15	Electrodes and Potentiometry	15
7/17	Electrodes and Potentiometry	15
7/20	Cyclic Voltammetry	17
7/22	Cyclic Voltammetry	17
7/24	Applications of Electrochemistry	
7/27	Review	
7/29	Exam 3	(Chapters 14-17)
7/31	Separations	23
8/3	Liquid Chromatography	25
8/5	Liquid Chromatography	25
8/7	Gas Chromatography	25
8/10	Mass Spectrometry	22
8/12	Mass Spectrometry	22
8/14	Final	(Chapters (22-25))

