

CHM 3120
Syllabus
Introduction to Analytical Chemistry
Summer 2022

Instructor: Dr. Alex Jacobs, Leigh 202A (office is inside the lab)
jacobsa@chem.ufl.edu Phone: 352-392-0528
Office Hours: Wednesday 1pm-2pm
Zoom ID: 882 880 7636
Password: Officehr

Graduate TAs:
Brian Martinez bmartinez1@ufl.edu Office Hours:

Lectures: T/W/F Period 3 (11:00-12:15), in LEI207

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		

Extra credit will be given in the form of passwords. 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:

You should plan to attend all lectures. Powerpoint lectures may not contain 100% of the information provided in class. If you know you will 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.

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.ufl.edu 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.

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 instructor 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 exam. 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>

Tentative Schedule

Date	Topic	Chapter(s)
5/10	Introduction, Course Overview	0 and 1
5/11	Units and Chemical Measurements	1
5/13	Tools	2
5/17	Errors and Sigfigs	3
5/18	Sigfigs Continued	4
5/20	Statistics	4
5/24	Statistics	4
5/25	Quality Assurance and Calibrations	5
5/27	Review	
5/31	Exam 1	(Chapters 0-5)
6/1	Introduction to Spectroscopy	18
6/3	Introduction to Spectroscopy	18
6/7	Fundamentals of Spectroscopy	18
6/8	Spectroscopic Instrumentation	20
6/10	Spectroscopic Instrumentation	20
6/14	Atomic Spectroscopy	21
6/15	Atomic Spectroscopy	21
6/17	Applications of Spectroscopy	19
6/21	No Class-Summer Break	
6/22	No Class-Summer Break	
6/24	No Class-Summer Break	
6/28	Review	
6/29	Exam 2	(Chapters 18-21)
7/1	Fundamentals of Electrochemistry	14
7/5	Electrodes and Potentiometry	15
7/6	Electrodes and Potentiometry	15
7/8	Cyclic Voltammetry	17
7/12	Cyclic Voltammetry	17
7/13	Applications of Electrochemistry	
7/15	Review	
7/19	Exam 3	(Chapters 14-17)
7/20	Separations	23
7/22	Liquid Chromatography	25
7/26	Liquid Chromatography	25
7/27	Gas Chromatography	25
7/29	Review	Review
8/2or3	Exam 4	(Chapters (22-25))