



Quantitative Analysis, Chemistry 249 Fall 2019

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Office hours: after class

Course Website: <http://bb.hunter.cuny.edu/>

Lecture: Wednesday, Time: 10:10-12:00 ROOM: 1403 HN

Textbook: *Quantitative Chemical Analysis*, D.C. Harris 9th ed.

Required Lab manual: *Quantitative Analysis Laboratory* by Smeureanu and Drain
(from Hunter College bookstore/Shakespeare only)

Lab notebook

Homework Required: <https://www.saplinglearning.com/>

Tentative Lecture Schedule

Class Date	Lecture Topic
8/28	Chemical measurements, tools of the trade, experimental error, Accuracy, Precision and Detection Chapters 1- 3
9/4	Errors & Statistics, Calibration methods: Chapters 4- 5
9/11	Intro to Titrations chapter 7 Begin Chemical Equilibrium Chapter 6
9/18	Chemical Equilibrium continued: Chapter 6 Activity Chapter 8 Systematic Treatment of Equilibrium: Chapter 9
9/25	Acids, Bases, Buffers: Acid –base titrations, Chapters 10,11,12
10/2	Acid-base chemistry continued, Chapters 10,11, 12
10/9	NO CLASS
10/16	Monday schedule
10/23	EDTA titrations Chapter 13
10/30	Exam 1
11/6	Electrochemistry: Chapter 14
11/13	Redox Titrations Chapter 16
11/20	Fundamentals of Spectroscopy: Chapter 18
11/27	Applications of Spectrometry: Chapters 19, 20
12/4	Exam 2
12/11	Introduction to Analytical Separations: Chapter 23 and introduction to Chromatography (Gas chromatography, HPLC) Chapter 24,25
12/18	9:00-11:00 Final Exam

Grading

	%	Points
Lab Analysis	50%	500
Sapling Homework	10%	100
Exam 1	12%	120
Exam 2	12%	120
Exam 3, Final	16%	160
	100%	1000

Homework instructions

Required Homework: As part of this course we will be using a custom platform called **Sapling**. The Sapling platform will be used as your online homework system and has been designed specifically for our course. To register for Sapling you will need to buy an access code from the Sapling Website or from the Hunter College online bookstore. *To register for Sapling:*

1. Log on to <https://www.saplinglearning.com/ibiscms/login/>
2. Click on the blue "create an account" tab and follow the online instructions to create a user profile (choose a username and password).
3. Select **City University of New York (CUNY), Hunter College** as your school
4. Select **CUNY Hunter - CHEM 249- Fall 19 -Francesconi** as your course.
5. Follow the online instructions to complete your registration.

**** eTEXTBOOK:** Your course text is available as a low cost online eTextbook. You can search, highlight, take notes, and each homework question is linked back to the appropriate section in the eTextbook for immediate instructional help. You may purchase the eTextbook in step 5 on the homework payment screen.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. During sign up or throughout the term, if you have any technical problems or grading issues, send an email to support@saplinglearning.com explaining the issue. The Sapling Learning support team is almost always faster and better able to resolve issues than your instructor.

Student Centered Learning Outcomes:

Upon completing this class, students should be able to:

- explain the analytical process
- describe the process of sample preparation, calibration curves, and interpreting results
- describe the types of experimental error, and carry out propagation of uncertainty
- describe the preparation and function of buffers
- make concentration and dilutions calculations
- Understand instrumental methods: Spectroscopy and gas chromatography

Laboratory:

- Preparation for laboratory experiments is essential. Before coming to lab, read through the entire experiment.
- Advance reading of the Procedure will help you to plan your time efficiently.
- It is recommended that you outline the procedure in your laboratory notebook prior to arriving in the lab. Also it will be good to do all your necessary calculations prior the lab.
- You are required to use a laboratory notebook to record data and observations.

Laboratory Reports:

Lab reports are required for two experiments; otherwise you must hand in your experiment answer on the form available in your laboratory manual at the end of each experiment as follow:

Name, Experiment Title, Result in $\% \pm$ Standard Deviation

The results are due within 1 week after the experiment ends, consult the laboratory teaching assistant

Labs are graded only on how close your analytical results are to the known values. All samples are double blind in that the instructor does not have the “answers”. If you want to improve your grade you may repeat the analysis up to two times. You can repeat them only at the end of the semester in the designated make-up labs.

One half of a letter grade will be subtracted from the second/third submission, e.g. if you get an F on the first analysis, and an A on the second, you will receive an A- for the experiment.

Use the book as an aid to both understanding the lectures AND to understand the experiments.

Makeup Exams and labs. There is a built in extra laboratory period for those wishing to repeat a lab. If a lab is missed, you cannot attend another section but must use the makeup lab at the end of the semester or at the discretion of the teaching assistant, your following lab period (this depends on the availability of lab equipment, materials, etc.). There are no makeup exams. If you miss an exam, the other two exams will be recalibrated to account for the missed exam points.

Hunter College required statements for syllabi

1. Academic Integrity Statement: “Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.”
2. ADA Statement: “In compliance with the ADA and with Section 504 of the Rehabilitation Act, Hunter College is committed to ensuring educational access and accommodations for all its registered students. Hunter College’s students with disabilities and medical conditions are encouraged to register with the Office of AccessABILITY for assistance and accommodation. For information and appointment contact the Office of AccessABILITY located in Room E1214 or call (212) 772-4857 /or VRS (646) 755-3129.”
3. Hunter College Policy on Sexual Misconduct “In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.
 - a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).
 - b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link: <http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>”