

Chemistry 223
Quantitative Analysis
Spring 2006

Prof. Shane C. Street
Office: Shelby 143A
Office Telephone: 205-348-5957
Office Hours: TTh 9:30-10:30 am; 10-11 am F; other hours by appointment

Lecture: TTh 8:30-9:20 am
Room: Shelby 150
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Text: Skoog, West, and Holler, *Analytical Chemistry: An Introduction*, 7th edition
CH 223 Lab Manual to be purchased from SUPE Store in Ferguson Center

<u>Date</u>	<u>Topic</u>	<u>Reading</u>
1/12	Administrivia, Introduction, Basic Definitions	Ch. 1, 2
1/17	Units and Solutions	Ch. 3
1/19	Stoichiometry, Equilibria	Ch. 3, 4
1/24	Equilibria, Error Analysis	Ch. 4, 5
1/26	Statistical Data Evaluation	Ch. 6, 7
1/31	Data Evaluation	Ch. 6, 7
2/2	Gravimetry	Ch. 8
2/7	Activity	Ch. 9
2/9	Multiple Equilibria	Ch. 10
2/14	Exam 1	
2/16	Volumetric Analysis	Ch. 11
2/21	Back Titrations, Acid-Base Titrations	Ch. 11, 12
2/23	Buffers	Ch. 12
2/28	Buffers	Ch. 12
3/2	Polyfunctional Titrations	Ch. 13
3/7	Polyfunctional Titrations, Kjeldahl	Ch. 13, 14
3/9	Complexation, Argentometric Titrations	Ch. 15
3/14	Introduction to Spectroscopy	Ch. 21
3/16	Exam 2	
3/21-3/23	Spring Break	
3/28	Spectroscopy Instruments	Ch. 22
3/30	Instruments, Applying Spectroscopy	Ch. 22, 23
4/4	Fluorescence and Atomic Spectroscopy	Ch. 23
4/6	AA, Introduction to Electrochemistry	Ch. 23, 16
4/11	Electrode Potentials	Ch. 16, 17
4/13	Redox Titrations and Reagents	Ch. 17, 18
4/18	Exam 3	
4/20	No Class - Thanksgiving Holiday	
4/25	Potentiometry	Ch. 19
4/27	Introduction to Separations	Ch. 24
5/2	Chromatography Basics	Ch. 24, 25
5/4	Gas and Liquid Chromatography	Ch. 25
5/12 (Friday)	Final Exam - 11:30 AM - 2:00 PM	

Course Description: This course in analytical chemistry is designed to introduce you to the methods of quantitative analysis, including acid-base and complexometric equilibrium chemistry, statistical methods of data analysis, volumetric analysis, gravimetric analysis, electrochemistry, spectroscopy, and chromatography.

Notice of Requirements: All students must have passed CH 102 before enrolling in CH 223. All students must enroll in a CH 223 laboratory section. A lab manual can be purchased at the University Supply Store (SUPE Store). Note that if you drop the course you must check-out of lab in order to avoid a fee (currently \$25).

Grading: Your final grade will be determined from the results of 3 in-class exams, a comprehensive final exam, and your laboratory grade. The CH 223 exams will emphasize lecture material, problem assignments, and the reading assignments. Homework problems will be assigned but not graded. One or more assigned problems will appear on each exam, however. Working homework problems is **extremely** important in order to understand the material.

Do not get behind!

The final exam will be the American Chemical Society's standardized exam in analytical chemistry, which is given to quantitative analysis classes across the country.

Make-up exams will only be given for **documented** cases of illness or unavoidable absence and **only** when the student has notified the instructor **prior** to the regularly scheduled exam.

3 Hour Exams at 150 pts each	450 pts
Final Exam	200 pts
Laboratory Grade (10 labs at 20 pts each)	<u>200 pts</u>
Total	850 pts

Grading Scale:

A	748 - 850 points
B	663 - 747 points
C	578 - 662 points
D	493 - 577 points
F	< 493 points

Course Website: Working. There is a very useful website for last semester's CH223 class: <http://bama.ua.edu/~ccassady/ch223/ch223.html>

Academic Misconduct: All acts of dishonesty in any work constitute academic misconduct. The Academic Misconduct Disciplinary Policy will be followed in the event of academic misconduct.

Disability Accommodations: To request disability accommodations, please contact Disability Services (348-4285). After initial arrangements are made with that office, contact Dr. Cassady.

Note: Food and drink is not allowed in Shelby Hall lecture rooms or labs.