ANALYTICAL CHEMISTRY

CH456 - Fall 2016

M/W/F 12:00 PM -1:00 PM (Welch 2.304)

Lecture Instructor: Prof. Livia S. Eberlin (liviase@utexas.edu)
Office hours: Friday, 11:00 AM - 12:00 PM or by appointment
Room: Welch 4.328

Lecture Teaching Assistant: Whitney A. Fies (wfies@utexas.edu)
Office Hours: Monday, 1:00 PM - 2:00PM.
Room: Welch 4.308

Laboratory Instructor: Dr. Thushani Herath (thushaninherath@gmail.com)

Course Description: The goal of this course is to develop the student's fundamental and practical understanding of analytical chemistry and quantitative chemical analysis.

Required Materials/Resources:

Square Cap: www.squarecap.com ($8/semester)
Website: Canvas.
Textbook: "*Quantitative Chemical Analysis*", 8th Edition, by Daniel Harris.
Lab Manual: Available at the Copy Center in The Union and electronic version on Canvas.
Lab Notebook: Must produce duplicate copies.

Grading: Your grade in this course depends on your performance on the in-class exams, the lab reports, and the in class questions (via Square Cap).

The weighting of these components is:

Exam 1:	20%	(200 points)
Exam 2:	20%	(200 points)
Exam 3:	20%	(200 points)
Square Cap:	10%	(100 points)
Labs:	30%	(300 points)
	100%	(1000 points)

Grades will be assigned according to the following scale:

A: ≥90.0%
B+: 87.0 – 89.9%
B: 75.0 – 86.9%
C+: 72.0 – 74.9%
C: 60.0 – 71.9%
D: 50.0 – 59.9%
F: < 50.0%

Exams: The exams will be modeled after the assigned end-of-chapter problems and presented lecture material. Only approved calculators maybe used during the examinations. No cell phones, personal data assistants (PDAs), personal computer tablets or notebooks, or other microelectronic devices will be permitted to be turned on during the examination. If you must miss an exam, it can be made up only with documented proof of a *major life trauma or emergency*, and only after consultation with the instructor. I will be available for any exam-related question until 5 pm of the day before the exam. We will not have a final comprehensive exam.

Problem Sets: Problem sets will be assigned periodically (~every two weeks), but will not be graded. These problems will be selected from the end-of-chapter problems. The correct answers will be posted in Canvas. Whitney will be available to help solving the problems with you during her office hours. I *strongly recommend* you work through the problems, as these are representative of the material that will appear on the exam. If you turn in dated copies of the problem sets solved to Whitney within 1 week of when they are posted, I will evaluate your effort for *extra credit* at the end of the semester when assigning your final grade (at my discretion).

In-Class Square Cap Questions: We will be frequently working on questions during classes using Square Cap (~1-3 quizzes/class). Points for these questions will be assigned based on participation, independently of correct/wrong answer. At the end of the semester, answers for 10% of quizzes will be discarded. This means that if there are, for example, 80 quizzes total, as long as you participate in 72 of them, you will receive 100 points. If you participate in x quizzes (x<72), your top hat grade will be (x/72)*100. Since we are dropping 10% of quizzes, there is **no mechanism** for a quiz make-up, for **whatever reason** - illness, emergency, travel, etc - you miss a quiz.

Overview of Course Schedule:

PERIOD	TOPIC	CHAPTERS
August 26 – September 9	Measurements, Statistics, and Calibration	1, 3, 4, and 5
September 12 – September 28	Equilibrium & Titrations	6, 7, 8, 9, 10, and 11
September 30	EXAM 1	
October 3 – November 2	Electrochemistry	13, 14, 15, and 16
November 2	EXAM 2	
November 4 – December 2	Chromatography	22, 23, 24, and 25
December 5	EXAM 3	

Course Aims and Outcomes:

By the end of this course, you should:

1. Know how to perform and correctly report measurements.
2. Understand and apply basic statistics to evaluate your data.
3. Understand calibration methods.
4. Understand equilibrium, acids and bases, and buffers.
5. Understand and know how to perform titrations.
6. Be familiar with the theory, instrumentation, and applications of electrochemistry.
7. Be familiar with the theory, instrumentation, and applications of chromatography.

IMPORTANT

Special Assistance: If you require special assistance because of a physical or learning disability, please notify me immediately. Arrangements and necessary accommodations will be made in compliance with UT policy and the American Disabilities Act. UT provides upon request appropriate accommodations for qualified persons with disabilities. For more information, contact Student Dean's Office (471-6259, 471-4641 TTY).

Policies Regarding Academic Dishonesty: Policies for academic dishonesty are designed to help you and to be fair to the other individuals in the class. Please familiarize yourselves with academic dishonesty issues (plagiarism, falsification, fabrication, cheating). Being honest about your academic work is the foundation of your education. The UT Honor Code states that:

> *"The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community."*

Scholastic dishonesty clearly violates these basic principles. The combination of web-based lab databases, vigilant TAs and a growing number of students willing to come forward with information on scholastic dishonesty has led to a significant increase in the likelihood that violations of the student honor code will be uncovered. Any cases of scholastic dishonesty will be subject to all appropriate remedies up to and including failure in the course. Keep in mind that copying someone else's language or reasoning in a lab writeup is plagiarism — if caught plagiarizing, you may fail the lab portion, and hence the entire course. If you are still uncertain as to what constitutes plagiarism, ask your TA, the lab director, or the course instructor for clarification. There is a *zero tolerance* policy in CH456.