

CHEM 3210**QUANTITATIVE ANALYSIS****FALL, 2009****Time:** MWF 9:00-9:50 AM Academic Science Complex 102**Instructor:** Dr. Guangdi Wang
Office: NCF Room 339 Tel: 520-5076**Office hours:** T, Th: 8:30~10:30 or by appointment**Course Description:** The principles, methodologies, and practical aspects of quantitative chemical analysis. This course will cover topics on data treatment, titrimetric methods, electrochemical analysis, spectrometry, and chromatography.

Prerequisite: Chem 1010/1010DR/1011LB, Chem 1020/1020DR/1020LB.

Required Text: *Analytical Chemistry* by Gary D. Christian, Wiley, 6th edition, 2003**Course Objective:** Students will learn the theory and practice of classical as well as modern analytical techniques that are commonly used in quantitative analysis. The course seeks to deepen students' understanding and awareness of chemical analysis by presenting each technique of quantitative analysis as associated with many areas of sciences. In addition, the students shall develop the ability to acquire and interpret reliable experimental data.**Course Requirements:** Students are required to attend all lectures and to be present for all quizzes. Students are required to take three hour-exams and a comprehensive final exam. There will be no makeup exams for any reason.**Course Evaluation:** The final course grade will be based on the total points earned.

Three hour exams (3x 100 pts)	300
Unannounced quizzes (5 to 6 total)	50~60
Comprehensive final exam	100

If an exam is missed for an excused absence, the final exam will count as 200 pts.

90-100 %	A
80-89 %	B
70-79 %	C
60-69 %	D
< 60%	F

Policy for Cheating: If a student's examination paper gives evidence of not being completely his/her own work, he/she may be given an F for the course. A student who communicates with anyone during an examination, unless with the permission of the instructor, may be immediately dismissed from the room and given an F. Attempts to read from other's paper, bringing study materials into the examination room without the instructor's permission will also result in an F.**Tentative Lecture Schedule:**

Monday	Wednesday	Friday
8/24 Introduction, Chapters 1	8/26 Chapter 2 & Chapter 3	8/28 Chapter 3 Data Handling
8/31 Chapter 3 Data Handling	9/2 Chapter 3 Data Handling	9/4 Chapter 4 & Chapter 5
9/14 Chapter 5 Stoichiometric Calculations	9/16 Chapter 5 & Chapter 6	9/18 Chapter 6 Equilibrium
9/21 Exam I	9/23 Chapter 7 Acid-Base Equilibria	9/25 Chapter 7
9/28 Chapter 7	9/30 Chapter 8 Acid-Base Titrations	10/2 Chapter 8 Acid-Base Titrations
10/5 Chapter 8	10/7 Chapter 9 Complexometric Titrations	10/9 Chapter 9 Complexometric Titrations
10/12 Chapter 9&11	10/14 Chapter 11 Precipitation Titrations	10/16 Chapter 11 Precipitation Titrations
10/19 Exam II	10/21 Chapter 12 Electrochemical Cells	10/23 Chapter 12
10/26 Chapter 13 Potentiometry	10/28 Chapter 13	10/30 Chapter 13
11/2 Chapter 14 Redox and Potentiometric Titrations	11/4 Chapter 14	11/6 Chapter 14
11/9 Chapters 16-18 Spectrometry	11/11 Chapters 16-18 Spectrometry	11/13 Chapters 16-18 Spectrometry
11/16 Exam III	11/18 Chapters 16-18	11/20 Chapters 19-21 Chromatographic Methods
11/23 Chapter 19-21	11/25 Thanksgiving Holidays	11/27 Thanksgiving Holidays
11/30 Chapter 19-21	12/2 Chapter 19-21	12/4 Review

Final Exam: TBA