

Syllabus for Chem 212, Quantitative Analysis Summer Semester 2010

Quantitative Analysis, 3 credit hours;

Prerequisite: Chem 106 or 102 and 112 and Chem 222 or Chem 224 and Chem 226 or permission of the instructor.

Instructor: Dr. Conrad Naleway,
Flanner Hall 103, Phone 508-3115
E-mail: cnalewa@luc.edu.
Office hours: TWTh 1-2:30 PM, or by appointment.

Textbook: "Exploring Chemical Analysis" (4th edition), by Daniel C. Harris,
ISBN 1-4292-1004-4

Other Materials: You will need an inexpensive calculator having logarithmic (base 10 and base e), exponential, and trigonometric functions. Be sure you are familiar with your calculator and that it is in user-ready condition for quizzes and exams. Calculators cannot be shared during exams

Objectives

- 1) To teach fundamental aspects of acid/base chemistry, redox, chemistry, electrochemistry, and ionic equilibria.
- 2) To acquaint the student with some of the fundamental techniques and state-of-the-art applications of chemical quantitative analysis used in biomedical, forensic, and environmental chemistry.

Grading:

There will be **3 Hourly exams** at the beginning of alternate Friday class period (3 x 25%) = **75%**

There will be **3 Quizzes** at the end of the other Friday class periods (3x 5%) = **15%**

Class Participation during Lecture (2%) and Discussion (3%+ 5%) {at end of each class} (**Total=10%**)

Final Grading Scale:

A 100-93;

A- 92-89;

B+ 88-85;

B 84-81;

B- 80-77;

C+ 76-73;

C 72-69;

C- 68-65;

D 64-55;

F <55.

Homework: Supplemental homework problems will be identified throughout term, which will assist student in mastering class materials.

	Class Schedule		General ORDER OF TOPICS	Chapter
1	Monday, May 24, 2010		Stoichiometry Review,	1
2	Wednesday, May 26, 2010		Math Tools & Sampling Error	2,3
3	Friday, May 28, 2010	Quiz 1	Statistics & Quality Assurance	4 & 5
	Monday, May 31, 2010		Titrations	6
4	Wednesday, June 02, 2010		Acid/Base	8
5	Friday, June 04, 2010	Exam 1	Buffers	9
6	Monday, June 07, 2010		Acid Base Titrations	10
7	Wednesday, June 09, 2010		PolyProtonic Acid/Bases	11
8	Friday, June 11, 2010	Quiz 2	Gravimetric	7
9	Monday, June 14, 2010		Complexation (EDTA)	13
10	Wednesday, June 16, 2010		Redox Titrations	16
11	Friday, June 18, 2010	Exam 2	Ionic Strength & Activity	12
12	Monday, June 21, 2010		Electrode Potential	14
13	Wednesday, June 23, 2010		Spectroscopy	18,19
14	Friday, June 25, 2010	Quiz 3	Atomic Absorption	20
15	Monday, June 28, 2010		Chromatography	21,22
16	Wednesday, June 30, 2010		GC/MS	
17	Friday, July 02, 2010	Exam 3		

14 discussions: divided into 6 Groups of 5-6 students each. (Each Student MUST present at least twice) (5 pts)

Assign 6 Problems Per Discussion Period; One Per Group, Quiz and Exam PROBLEM Questions to come from variants of these! **There also will be a few conceptual questions on Exams/Quizzes**