Syllabus for Chem 212, Quantitative Analysis
Summer Semester 2013

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: Immediately after Lecture and TWTh 1-2:30 PM, or by appointment.

Textbook: "Exploring Chemical Analysis" (4^{th} or 5^{th} 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 Quizes** 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;	**B-** 80-77;	**D** 64-55;
A- 92-89;	**C+** 76-73;	**F** <55.
B+ 88-85;	**C** 72-69;	
B 84-81;	**C-** 68-65;	

Homework: Supplemental homework problems will be identified throughout term, which will assist student in mastering class materials. There will be no specific credit but STRONGLY encouraged to help prepare for quizzes and exams. *That is, often homework problems will show on exams and quizzes!*

12 discussions: class will be divided into 6 Groups of 5-6 students each. (***Each Student MUST present at least twice***) *(5 pts)* I will assign 6 Problems per Discussion Period; One Per Group.

NOTE: Quiz and Exam Problems will be largely variants of problems done in class or problems done in discussion period! Plus there also may be a few conceptual questions on each Exam/Quiz

All exams must be signed in the front, upper right hand corner. This signature will be taken as a statement of honest and completely independent work. Instances of academic dishonesty will warrant immediate failure of the course plus referral to the Dean's office. For more information on university policy, please read:

http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml

	Class Schedule		General Order of Topics	Chapter(s)
1	Monday, May 20 2013		Stoichiometry Review, Math Tools	1,2
2	Wednesday, May 22, 2013		Sampling Error & Statistics(A)	3,4
3	**Friday, May 24, 2013**	**Quiz 1**	Statistics(B) & Quality Assurance	4 & 5
	Monday, May 27, 2013	**Memorial Holiday**		
4	Wednesday, May 29, 2013		Titrations & Acid/Base	6,8
5	**Friday, May 31, 2013**	**Exam 1**	Buffers	9
6	Monday, June 03, 2013		Acid Base Titrations	10
7	Wednesday, June 05, 2013		PolyProtonic Acid/Bases	11
8	**Friday, June 7, 2013**	**Quiz 2**	Gravimetric	7
9	Monday, June 10, 2013		Complexation (EDTA)	13
10	Wednesday, June 12, 2013		Redox Titrations	16
11	**Friday, June 14, 2013**	**Exam 2**	Ionic Strength & Activity	12
12	Monday, June 17, 2013		Electrode Potential	14
13	Wednesday, June 19, 2013		Spectroscopy	18,19
14	**Friday, June 21, 2013**	**Quiz 3**	Atomic Absorption	20
15	Monday, June 24, 2013		Chromatography	21,22
16	Wednesday, June 26, 2013		GC/MS	Notes
17	**Friday, June 28, 2013**	**Exam 3**		