CHM 4130, INSTRUMENTAL ANALYSIS
Fall, 2014, M,W,F, 2nd Period

Instructors: Dr. Kathryn R. Williams; krw@chem.ufl.edu; 392-7369
Office Hours: W, 6th; Th, 9th; CLB 220

Objectives: CHM 4130 is a survey of the broad range of instruments available to the chemist, including internal function, applications, and limitations. Students may obtain hands-on experience with many of the instruments in CHM 4130L, which may be taken simultaneously with or after completion of CHM 4130.

Texts: Harris, D.C. *Quantitative Chemical Analysis*, 8th Ed; W.H. Freeman: New York, 2010.

Grading: There will be 7 in-class tests on the days designated on the schedule. The lowest grade of tests 1-6 will be dropped. The grade for test 7 cannot be dropped. A missed test will be considered as the lowest. There will be three problem sets containing a selection of practice problems (not turned in) plus a few problems to be submitted on the designated dates. The points will be distributed as follows:

Tests (Best 6 of 7 @ 75 pts)	450
Written Assignments (3 @ 25 pts)	75
Total	**525**

Grading Scale: Grades will be assigned according to the following point totals:

>475, A	445-474, A–	420-444, B+	390-419, B	370-389, B–
340-369, C+	315-339, C	290-314, C–	260-289, D+	240-259, D

Note: Chemistry majors earning grades below C (i.e., C–, D+, D, or E) must repeat the course to earn credit toward the degree.

Attendance: Attendance is required. Students are allowed one unexcused absence. Each additional unexcused absence will result in a 5 point deduction.

Assignments: Solutions to homework assignments are expected to be individual efforts. Students may obtain help from Dr. Williams, the TA, or any library/web reference materials. Please write on one side only (pencil is OK).

Students with Disabilities: Appropriate accommodations will be provided, according to the policy at www.chem.ufl.edu/~itl/disabilities.html.

Academic Honesty: Students are expected to obey the University of Florida Honor Code, detailed at www.chem.ufl.edu/~itl/honor.html. Violations will be reported to the Office of Student Judicial Affairs.

Lecture Schedule

Week	Topic(s)	Chapter(s)	Special Dates
8/25,27,29	Fundamental Concepts; Quantitation	Harris 5	
9/~~1~~,3,5	Basic Electronics	Notes provided	Fri, 9/5, Test 1
9/8,10,12	Signal/Noise; Intro Chromatographic Methods	Harris 19.6; Harris 22	
9/15,17,19	Chromatography; GC	Harris 22,23	Fri, 9/19, Test 2
9/22,24,26	GC; HPLC	Harris 23,24	Fri, 9/26 Problem Set 1 due
9/29;10/1,3	HPLC	Harris 24	Fri, 10/3, Test 3
10/6,8,10	CE; Intro Optical Spectroscopy	Harris 25,17	
10/13,15,~~17~~	Optical Spectroscopy	Harris 19	
10/20,22,24	Atomic Spectroscopy	Harris 20	Fri, 10/24, Test 4
10/27,29,31	Fluorescence	Harris 17	Fri, 10/31 Problem Set 2 due
11/3,5,7	IR; Raman; SPR	Harris 19	Fri, 11/7, Test 5
11/10,12,14	Electrochemistry; Potentiometry	Harris 13,14	
11/17,19,21	Coulometry; Voltammetry	Harris 16	
11/24,~~26,28~~	Voltammetry; Mass Spectrometry	Harris 16,21	Mon, 11/24, Test 6
12/1,3,5	Mass Spectrometry	Harris 21	Fri, 12/5 Problem Set 3 due
12/8,10,~~12~~	Atomic Mass Spectrometry	Harris 20	Wed, 12/10, Test 7