

Florida International University

Fall 2010

INSTRUCTOR: DR. PIERO R. GARDINALI
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Tuesday & Thursday 12:30 -1:45PM AHC3-214

Course Description: In-depth review of general instrumental methods of chemical analysis including atomic and molecular spectroscopy, electro analytical methods, gas and liquid chromatography, capillary electrophoresis and several hyphenated techniques. The class also covers all aspects of quantitative chemical analysis including figures of merit, method development, and QA/QC protocols.

Pre-Requisites: CHM3210/3210L; CHM2211/2211L; [CHM3410](#); PHY2048/2048L and PHY2049/2049L.
Students registered in the class without the appropriate pre-requisites will be dropped administratively.

IMPORTANT POINTS TO REMEMBER:

Attendance is important but is your call.

There will be two (2) in-class exams worth 30 % of the grade each, and a

Cumulative Final examination worth 30% of the grade.

In addition, 10% of the grade will be assigned to two sets of homework problems to assure that students get adequate exposure to computer hardware/software. Check the class schedule for tentative dates.

No grades will be dropped, there will be no make-up exams and there will be no curve for grading the exams.

The grading scale is as follows: 90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D, <60 = F.

Office hours will be Thursdays from 2:00 to 4:00 p.m., you can also make an appointment or e-mail any questions you may have.

The **required** textbook for the class is: **Principles of Instrumental Analysis, 6th Edition by D.A. Skoog, F.J. Holler, and S.R. Crouch.**

Plenty of copies should be available at the FIU Bookstore but you can always order it online!

Additional suggested readings might be assigned along during the semester. Additional class information will be available at <http://www.fiu.edu/~gardinal/teaching.html>

Tentative Class Schedule

August 24	Introduction - No Class
August 26	Chapter 1 : Introduction/ Appendix I : Evaluation of Analytical Data
August 31	Appendix I : Evaluation of Analytical Data Chapter 5: Signal to noise
September 2	Chapter 6 : Introduction to Spectroscopic Methods (1 st Assignment 5%)
September 7	Chapter 7: Optical Instruments
September 9	Chapter 8: Optical Atomic Spectroscopy
September 14	Chapter 9: Atomic Absorption and Fluorescence Spectroscopy
September 16	Chapter 9: Atomic Absorption and Fluorescence Spectroscopy
September 21	Chapter 10: Atomic Emission Spectroscopy
September 23	Chapter 11: Atomic Mass Spectrometry
September 28	Chapter 12: Atomic X-Ray Spectrometry
September 30	EXAM 1 (30%)
October 5	Chapter 13: UV/Visible Molecular Absorption Spectroscopy
October 7	Chapter 13/14: UV/Visible Molecular Absorption Spectroscopy and Applications
October 12	Chapter 15: Molecular Luminescence Spectrometry
October 14	Chapter 16/17: Infrared Spectroscopy
October 15	Las day to drop
October 19	Chapter 19: NMR Spectroscopy
October 21	Chapter 20: Molecular Mass Spectrometry
October 26	Chapter 20: Molecular Mass Spectrometry
October 28	EXAM 2 (30%)
November 2	Chapter 26: Chromatographic Separations(2 nd Assignment 5%)
November 4	Chapter 27: Gas Chromatography

November 9	Chapter 27: Gas Chromatography
November 11	VETERANS DAY UNIVERSITY CLOSED
November 13	Chapter 28: High Performance Liquid Chromatography
November 16	Chapter 28: High Performance Liquid Chromatography
November 18	Chapter 29: Supercritical Fluid Chromatography
November 23	Chapter 30: Capillary Electrophoresis
November 25	THANKSGIVING HOLYDAY UNIVERSITY CLOSED
November 30	Cutting edge and emerging technologies.
December 2	General Review
December 6-11	Final Examination

MOST LIKELY 12:00- 2:00PM Tuesday December 7th.

WILL KEEP YOU POSTED ON THE WEBPAGE

Class notes will be available on-line as the course proceeds. They will NOT be provided in CDs or other media. Is your responsibility to download and/or print them.

If you have difficulties attending class, exams, or turning in assignments please contact the instructor AHEAD of time or as soon as the problem arises. If you miss a test or assignment makeups or late turn-ins will only be considered for university recognized excuses after submitting the proper documentation.

Class notes, books and other materials will NOT be allowed into the classroom during examinations. Just bring a calculator. Appropriate tables, formulas and or constants will be provided with the test.

All incidents of academic misconduct will be processed according to FIU policies and they will likely result in sanctions that you do not want to know!

Best way to contact your instructor is : e-mail to gardinal@fiu.edu

Office hours are: THURSDAYS 2:00 to 4:00PM if you can't make it try to make an appointment.
SORRY, NO WALK-INS