

Syllabus for CHM 3120

Analytical Chemistry

Spring 2012

Instructor: Dr. Benjamin W. Smith, 264 Keene-Flint Annex
bwsmith@ufl.edu Phone: 392-0256
Office Hours: Wednesday periods 1-3, or by appointment

Lectures: Tuesday, 6th period, Thursday, 6-7th periods

Required Textbook: *Quantitative Chemical Analysis*, 8th Edition, Daniel C. Harris, Freeman, 2010

Course Objectives

This course treats chemistry as a quantitative science and seeks to develop a keen observational and analytical insight. The emphasis is upon classical and instrumental methods of chemical analysis, chemical laboratory methodology and the sensible interpretation of quantitative measurements.

Tentative Course Schedule

Subject to minor revisions

Date	Lecture Topic	Book Chapters
Jan 10	Introduction and Overview of the Course	Chapter 0
Jan 12	Chemical Measurements	Chapter 1
Jan 17	Tools	Chapter 2
Jan 19	Errors and Statistics	Chapters 3 and 4
Jan 24	Calibration and Figures of Merit	Chapters 4 and 5
Jan 26	Fundamentals of Electrochemistry	Chapter 13
Jan 31	Electrodes and Potentiometry	Chapter 14
Feb 2	Exam 1	Chapters 0-5
Feb 7	Redox titrations	Chapter 15
Feb 9	Electroanalytical techniques	Chapter 16
Feb 14	The Beholding of the Light	
Feb 16	Fundamentals of Spectrophotometry	Chapter 17
Feb 21	Applications of Spectrophotometry	Chapter 18
Feb 23	Exam 2	Chapters 13-16
Feb 28	Applications of Spectrophotometry continued	Chapter 18
Mar 1	Spectroscopic instrumentation and the manipulation of photons	Chapter 19
Mar 6	Spring Break	
Mar 8	Spring Break	
Mar 13	Atomic Spectrometry	Chapter 20
Mar 15	Atomic Spectrometry	Chapter 20
Mar 20	Atomic Spectrometry	Chapter 20
Mar 22	Mass Spectrometry: The concept of mass	Chapter 21
Mar 27	Mass Spectrometry: Instrumentation	Chapter 21
Mar 29	Exam 3	

Apr 3	Mass Spectrometry: MALDI and Electrospray	Chapters 17-20
Apr 5	Introduction to Analytical Separations	Chapter 22
Apr 10	Analytical Separations continued	Chapter 22
Apr 12	Gas Chromatography	Chapter 23
Apr 17	Liquid Chromatography	Chapter 24
Apr 19	Electrophoresis and Chromatography methods	Chapter 25
Apr 24	Hybrid separation-MS techniques	
April 28 – May 4	Final Exam	

Students may use calculators on exams. Cell phones must be turned off and out of sight during exams. Please do not arrive late, leave early or make any use whatsoever of electronic communications devices during the lectures.

Grading

Grades will be determined from a point distribution as follows:

Progress Exams (best 2 of 3 @ 200 pts each)	400 points
Final Exam:	<u>300 points</u>
Total:	700 points

Grades are not curved. The following scale will be used:

A (620), A- (600), B+ (570), B (550), B- (520), C+ (500), C (470), C- (450), D+ (420), D (400), D- (370), E (<370).

Grading concerns: We do our best to make all grading accurate and fair. If you believe there was an error in the grading of an exam, first see a TA about the issue. If you remain unsatisfied or have a question, then see me. This must be done within one week after the exam is returned to you. See: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> for additional UF grades and grading policies.

Teaching Assistants: Ms. Manasi Mangaonkar

Office: CLB 105

Office hours: Tuesday periods 7-8, Thursday periods 8-9

E-mail: mangaonkar@chem.ufl.edu

Mr. Andy Warren

Office: CLB 201

Office hours: Wednesdays and Fridays, periods 3-5

Email: riwarren@chem.ufl.edu

Attendance Policy

Only if you have an official university-excused absence (athletics, debate, etc.) will special consideration be given for missed classes. **No make-up exams: don't ask.**

Classroom accommodations

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

e-learning: We will use the UF Sakai e-learning system for course management. Here you will find an electronic syllabus, your grades, which only you may see, class announcements, special resources and other pertinent information for the course. Access e-Learning through your myUFL portal.

Academic Honesty

Exams are given under the provisions of the University of Florida Honor System. *Any student caught cheating will receive a failing grade in the course.* I recommend you examine the UF policy on academic honesty at: <http://www.dso.ufl.edu/judicial/academic.php>.

If you are aware of a climate that promotes academic dishonesty, please notify the instructor or contact the Student Honor Court (392-1631) or the Cheating Hotline (392-6999).

Chemistry Learning Center (CLC): Graduate teaching assistants will hold office hours in the CLC located in Keene-Flint 257-258.