

Syllabus for CHM 3120

Analytical Chemistry

Spring 2013

Instructor: Dr. Benjamin W. Smith, 264 Keene-Flint Annex
bwsmith@ufl.edu Phone: 392-0256
Office Hours: Wednesday periods 1-3, or by appointment
Students are welcome to stop by my office at any time

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

Required Textbook: *Quantitative Chemical Analysis*, 8th Edition, Daniel C. Harris, Freeman, 2010
And: i>clicker2, ISBN: 1429280476, available at the bookstore

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

Apr 4	Mass Spectrometry: MALDI and Electrospray	Chapter 21
Apr 9	Introduction to Analytical Separations	Chapter 22
Apr 11	Analytical separations: continued	Chapter 22
Apr 16	Gas Chromatography	Chapter 23
Apr 18	Liquid Chromatography	Chapter 24
Apr 23	Electrophoresis and chromatography methods	Chapter 25
April 27, 29, 30	Final Exam Date to be announced	

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:

Clicker Problems in lectures (20 @ 10 pts each)	200 points
Progress Exams (best 2 of 3 @ 200 pts each)	400 points
Final Exam:	<u>400 points</u>
Total:	1000 points

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

A (880), A- (860), B+ (815), B (785), B- (745), C+ (715), C (670), C- (645), D+ (600), D (570), D- (530), E (<530).

Note: 20% of your grade will be determined by the in-class problems. To accommodate for anyone who might forget to bring their clicker to lecture, we will offer more than 20 problems and count your best 20 results towards your grade.

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: Mr. Ismail Öçsoy

Office: Sisler A112

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Office hours: Wednesdays and Fridays, periods to be announced

E-mail: ocsoy@chem.ufl.edu

Mr. Andy Warren

Office: CLB 201

Office hours: Wednesdays and Fridays, periods to be announced

Email: riwarren@chem.ufl.edu

Attendance Policy

If you wish to learn the subject and earn credit for the in-class problems you should plan on attending all lectures. Make up exams will be given according to university regulations to accommodate religious obligations or illness. Please communicate requests in advance when possible or provide medical documentation for unanticipated illness.

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. Lecture powerpoint slides will be posted after each lecture. 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).