CHEMISTRY 313
Analytical Chemistry Laboratory
Syllabus
Spring 2011

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Office hours:
Office:
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Discussion: W 6:00-6:50 in S-2-041 (attendance mandatory!!!)
Lab: W 7 :00-10:00 in Science 2-047

Objective: This course will focus on chemical techniques, both traditional wet chemistry approaches, such as titrations, and instrumental methods, that are applicable for the quantitative and qualitative analysis of a variety of different samples. Topics will include statistics, acid/base and redox, spectroscopy, and potentiometry. I hope you will enjoy the semester.

Text: Quantitative Chemical Analysis, 8th Edition by Harris
Lab Manual: Available on-line

Grading:

Eight lab reports and spreadsheets; 100 pts each
Two Revisions; 100 pts each
Notebooks will be graded twice, 50 pts each

Grading Scale:

Grade	Points required to earn grade	Corresponding Percentage
F	<605	<55 %
D-	605	55%
D	638	58 %
D+	682	62%
C-	715	65 %
C	748	68 %
C+	792	72 %
B-	836	76 %
B	869	79 %
B+	913	83 %
A-	968	88 %
A	1023	93 %

Attendance: You are expected to attend all discussion and labs. If you miss a discussion, you will not be permitted to perform the experiment. **There will be no make up labs!** If you miss a lab **for any reason**, you will be given data necessary to produce a lab report and you will take a 20 point penalty on your report for that experiment.

Lab reports: Much of your data manipulations will be performed on an Excel spreadsheet. If you are not already an expert, you will learn to be efficient at Excel during this course. Your reports are required to contain the following elements.

- A Word file including
  - Abstract
  - Procedure
  - Data and Analysis
  - Discussion (use this section to answer any questions in a well-crafted series of paragraphs)
  - Conclusions

- An Excel template file containing your data and calculations. Each of the experiments will have an Excel spreadsheet template that you can download from the course webpage or Blackboard. ***All of you calculation must be done using Excel.***

Both the Excel file and the Word file should be emailed to chem313@gmail.com

You will lose 2 pts a day for late lab reports.

How to write a lab report: see document posted on course website.

Your report will be graded on the accuracy of the content, as well as the quality of your writing. A grading rubric is provided for each of experiment in the lab write-ups.

Lab schedule:

Feb 8	Lab 1	Introduction to stats and the t-table
Feb 15	Lab 2	Statistical analysis of pennies
Feb 22	Lab 3	Calibration of a Pipet
Feb 29	Lab 4	Flagan's Determination of Chloride
Mar 7	Lab 5	Standardization of NaOH and analysis of vinegar
Mar 21	Lab 6	pKa of Acid/base Indicators
Mar 28	Lab 7	Spectroscopic Iron Analysis
Apr 4	Lab 8	Solubility of $CaSO_4$
Apr 18	Revision 1	
May 2	Revision 2	

Notebooks:
You are required to keep a bound notebook for this course.
The first page should be a table of contents. Entries for each experiment should be dated at the top, have a few sentences that describe the goal of the experiment, contain the tabulated data, and any calculations that were performed *during* the course of the experiment. Label everything neatly. **Use blue of black ink ONLY**! If you make a mistake in your notebook, DO NOT SCRIBBLE the mistake out. Simply put a single line through the entry. **You must get your notebook signed by your instructor before leaving class.** This is your responsibility and you will lose points for forgetting and your instructor will not sign it the next day, so do not even ask. Your notebook will be graded twice; at the halfway point and towards the end of the course.

Revisions:
A purpose of the revisions is to forces you to go back and fix mistakes in your two lowest lab report grades but it is not the primary purpose. The primary purpose is to have you engage in the revision process itself. The expectation about the quality of the lab report revisions will be much higher. In a way you, for these revisions, you will be graded against yourself and just fixing your previous mistakes will not be sufficient to earn an A or B on your revisions. In fact, it is entirely possible you could earn a lower grade on the revision and in fact this was a fairly common occurrence last semester.

Students with Disabilities:

Section 504 of the Americans with Disabilities Act of 1990 offers guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center for Disability Services, M-1-401, (617-287-7430). The student must present these recommendations and discuss them with each professor within a reasonable period, preferably by the end of Drop/Add period.

Academic dishonesty:
Students are required to adhere to the University Policy on Academic Standards and Cheating, to the University Statement on Plagiarism and the Documentation of Written Work, and to the Code of Student Conduct as delineated in the catalog of Undergraduate Programs, pp. 44-45, and 48-52. The Code is available online at: http://www.umb.edu/student_services/student_rights/code_conduct.html.

You are expected to do your own work. It is OK to get help on a question from a classmate, but it is not OK to copy an answer off of a classmates report. If there is any question in your mind about whether or not the action you are about to undertake constitutes cheating, it likely does, and DO NOT PROCEED!! Come and at least check with me. If you do not heed this warning, you will likely be caught and you will FAIL the course and be DISMISSED from the university! It is just not worth it!!!