Syllabus

CHM 3120L ANALYTICAL CHEMISTRY LABORATORY

Spring, 2015

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Course Website: Canvas; Please visit the website regularly for announcements and resources.
Videos available at: http://www.chem.ufl.edu/ugrad/labanalytical.shtml

Required Materials

Laboratory Manual: No lab manual is required. All materials will be posted on the e-learning site, under Resources.

Laboratory Notebook: Any sensible laboratory notebook, to be used only for this lab, is suitable. You will turn in either carbon copies, or scans or Xerox copies of your notes, retaining the original notebook for your own use. Please be sure that what you submit is legible and clear.

Laboratory Attire: The Essentials: Long, loose-fitting pants, full shirt, shoes which cover the feet, departmentally-approved safety glasses, tie-back for long hair.

Course Objectives

CHM 3120L is an introductory laboratory course in Analytical Chemistry. By the end of the semester, students are expected to demonstrate:

- proper laboratory techniques for quantitative chemical measurements including accuracy on unknowns
- knowledge of a select group of analytical methods
- competence in data analysis and preparation of basic laboratory reports

Grading

Your grade will be determined by the accuracy of your results, the quality of your reports, the quality of your laboratory notes, your competence in essential laboratory manipulations, and your performance on written quizzes.

Accuracy	2 @ 90 points (Exp 2, Soda Ash; Exp 3, Ascorbic Acid)	180
	1 @ 50 points (Exp 5, ISE)	50
	2 @ 60 points (Exp 4, Spec Fe; Exp 6, GC)	120
Exp #1 Notes	1 @ 20	20
Reports and Notes	5 @ 70 points	350
Practical Exams	3 @ 40 points	120
Written Quizzes	4 @ 40 points	160
		1000 total

The following grading scale will be used:
A (88.0–100%), A- (86.0-87.9%), B+ (81.5-85.9%), B (78.5-81.4%), B- (74.5-78.4%), C+ (71.5-74.4%), C (67.0-71.4%), C- (64.5-66.9%), D+ (60.0-64.4%), D (57.0-59.9%), D- (53.0-56.9%), E (<53.0%).

Notes:

1) Prior to the first lab, visit the e-learning site and review Preliminary Handouts 1-5: laboratory safety, basic lab rules, laboratory notebook, laboratory reports and fundamental techniques. Also read the handout for Experiment #1.

2) A minimum of 40 out of 90 accuracy pts (30 out of 60, 20 out of 50) will be given, if the experiment is performed, the results are calculated correctly and deadlines are met.

3) For Experiment #1 you will only submit your laboratory notes.

4) For each of the five experiments (Soda Ash, Ascorbic Acid, Spec Iron, Ion Selective Electrodes, and Gas Chromatography) you will write concise formal laboratory reports. Reports are due at the beginning of your laboratory period during the week specified. The laboratory experimental guidelines will contain questions for each experiment. These are designed to help you prepare for the written quizzes. Written answers are not required as part of the reports.

5) A 10 point penalty will be assessed each time a result or report is submitted late. The maximum permissible late time is one week.

6) Each student is expected to pass laboratory practical exams on three essential analytical skills (use of the analytical balance/weighing by difference, quantitative transfer/use of a volumetric flask and use of a pipets). The tests will be given by the TA during the regular laboratory period at times mutually acceptable to both the student and the TA. The tests may be arranged starting week 2 of the semester and must be successfully completed in order to receive a passing grade in CHM 3120L.

7) Four written quizzes will be given on the dates specified on the schedule. Study material will be posted one week in advance. You will be allowed to see your graded written quiz, but it must be returned to the TA before leaving lab.

8) Attendance is required at all scheduled laboratory periods, unless you are informed otherwise by your TA.

9) CHM 3120 is a co- or pre-requisite for CHM 3120L. If you drop CHM 3120 you must obtain permission from Dr. Smith to continue in the lab.

10) Once an unknown result has been submitted, no repeat work on that unknown is allowed.

11) Students are expected to obey the University of Florida Honor Code, detailed at https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/. Violations will be reported to the Office of Student Judicial Affairs.

12) Make-ups will be granted only when justified. If you know ahead that you will have to miss lab, notify your TA and Dr. Smith in advance. If you are sick and cannot reach anyone before lab, you will have to present written evidence of the illness.

13) If you are involved in a laboratory accident, you must go to the infirmary for treatment.

14) 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.

15) Lab preparatory videos are available at: http://www.chem.ufl.edu/ugrad/labanalytical.shtml

Laboratory Schedule

Note: Because of holidays, different sections may be working on different experiments during any given week. Regardless, each section will follow the sequence of activities given below.

Dates	Preparation	Lab Work	Quizzes	Results Due
Begin January 12 Week 1	Read Handouts 1-6 Read Experiment 1 Watch video: Lab Techniques	Check in Experiment 1 Balance use Pipet use/calibration		
Week 2	Read Handout 7 Read Experiment 2	Begin Soda Ash Titrations HCl/NaOH titrations KHP/NaOH titrations		Experiment 1 lab notes
Week 3	Watch ascorbic acid video Read Experiment 3 Look over handout for Quiz 1	Soda Ash Titrations Prep KIO_3 and $Na_2S_2O_3$ Standardize $Na_2S_2O_3$	Quiz 1 and Deadline for Weighing Practical	
Week 4		Standardize $Na_2S_2O_3$ Ascorbic acid titrations		Soda Ash (report and lab notes)
Week 5	Read Experiment 4 Watch Spec Fe video	Finish Ascorbic acid	Quiz 2 Deadline for Pipetting Practical	
Week 6	Watch ISE video Read Experiment 5	Spectrophotometric Fe		Ascorbic Acid: Report and lab notes
Week 7		Ion Selective Electrode		Spec Fe: report and lab notes
Week 8	Watch Gas Chromatography video Read Experiment 6	Finish ISE	Quiz 3 and deadline for volumetric flask practical	
Week 9		Gas Chromatography	Quiz 4	ISE: report and lab notes
Week 10		Gas Chromatography	Quiz 4	
Week 11		Check Out		GC: report and lab notes