Syllabus

CHM 3120L ANALYTICAL CHEMISTRY LABORATORY

Summer, 2017

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Course Website: Canvas; Please visit the website regularly for announcements and resources. Everything is posted under "Files"
Videos available at: https://www.chem.ufl.edu/undergraduate/courses-and-curriculum/chemistry-laboratories/analytical/

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	6 @ 70 points	420
Reports and Notes	7 @ 70 points	490
Practical Exams	3 @ 40 points	120
Written Quizzes	4 @ 45 points	180
		1210 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 70 accuracy points will be given if the experiment is performed, the results are calculated correctly and deadlines are met.

3) For each of the seven experiments 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. A report template is provided for the Soda Ash lab.

4) A 10 point penalty will be assessed each time a result or report is submitted late. The maximum permissible late time is one week. See Dr. Smith for exceptions.

5) 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.

6) Four written quizzes will be given on the dates specified on the schedule. You will be allowed to see your graded written quiz, but it must be returned to the TA before leaving lab.

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

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

9) Students are expected to obey the University of Florida Honor Code, detailed at https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/.

10) 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.

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

12) 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.

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

Laboratory Schedule
Monday Periods 2-4
9:30 – 1:45

Dates	Preparation	Lab Work	Quizzes	Results Due
Begin May 8	Read Handouts 1-6 Read Experiment 1 Watch video: Lab Techniques	Check in Experiment 1 Balance use Pipet use/calibration		
May 15 and 22	Read Handout 7 Read Experiment 2	Begin Soda Ash Titrations HCl/NaOH titrations KHP/NaOH titrations Finish Soda Ash Lab		Experiment 1 report and lab notes due May 15
May 29: Memorial day		None		
June 5	Watch ascorbic acid video Read Experiment 3 Review handouts to prepare for Quiz 1	Prep KIO_3 and $Na_2S_2O_3$ Standardize $Na_2S_2O_3$	Quiz 1 and Deadline for Weighing Practical	Soda Ash report and notes due
June 12		Ascorbic acid titrations Finish ascorbic acid lab		
June 19 Summer Break		None		
June 26	Read Experiment 4 Watch Spec Fe video	Spectrophotometric Fe	Quiz 2 Deadline for Pipetting Practical	Ascorbic Acid: Report and lab notes
July 3 No Class		None		
July 10	Read Experiment 5 Watch ISE video	Chloride Ion Selective Electrode	Quiz 3 and deadline for volumetric flask practical	Spec Fe report and notes
July 17	Read Experiment 6	Fluorescence of Quinine Standard Additions		ISE: report and lab notes
July 24	Read Experiment 7	Error Propagation with Beer's Law		Quinine Lab report and notes
July 31		Check out	Quiz 4	Lab 7 report and notes