Ch251 INSTRUMENTAL ANALYSIS LABORATORY

NOTE: NEW YORK STATE LAW REQUIRES THAT EYE PROTECTION (SAFETY GLASSES OR GOGGLES) BE WORN IN THE LABORATORY, WHETHER YOU ARE WORKING OR NOT. THIS LAW WILL BE STRICTLY ENFORCED. NEVER WEAR OPEN-TOED SHOES AND PULL BACK LONG HAIR SO THAT IT DOES NOT GET IN THE WAY.

GRADES

Your grade will be based on the following:

Prelaboratory preparation	25%
Laboratory reports	50%
Final project	25%

LABORATORY NOTEBOOK

You are required to use a bound notebook similar to the one used in Freshman Laboratory. One notebook per individual. In class every measurement and observation you make should be recorded. Any loose pieces of paper found will be thrown out so do not write anything important anywhere but in your laboratory notebook.

PRELABORATORY PREPARATION

Good preparation is imperative. Preliminary work needs to be done prior to the laboratory period. Make sure that you have a good understanding of the theory you will be using. Read the corresponding chapter in the textbook. Study the procedure and make sure you understand what is expected of you. The better prepared you are, the smoother and faster the experiment will run. In your notebook include the following:

- Each student must hand in a brief discussion of the theory on which the technique is based. This can be the theoretical section of your lab report.
- Every reagent to be used and the safety procedures for handling these chemicals, in case of spills or bodily contact. You can use any reference book. There should be MSDS sheets for every chemical outside of the labs. Check out the website.
- Any equations you will be using for the analysis of your data or that your experiment is based on, i.e. Beer's law.
- Literature values of data or spectra of compounds that you are analyzing. Include any literature values (molecular weights or values to be determined, spectra, etc.) that may help you in carrying out the experiment.
- Prepare tables where you can enter your data from the experiment.
- Include calculations to prepare the correct molarity of the reagents required for the experiment.

FINAL EXPERIMENT

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The last four weeks of the laboratory period you will be required to perform an experiment of your own device. You should go to the library for possible experiments or go to your medicine cabinet and try to analyze what is in your deodorant, for instance. You will have all of the instruments at your disposal. However, we have to make sure that everyone does not want to use the same instrument. Therefore, you must hand in to your professor a first draft of the experiment by the middle of October. This is also to your benefit since you may have to order chemicals or equipment for your experiment. You will be required to make a 10 minute oral presentation of your results and hand in a brief written report. Your grade for this project will be based on the following:

- Background research (including drafts of your experimental procedure)
- Laboratory work
- Final presentation

WEEKLY PROCEDURE

- Meet in your assigned classroom, where your professor will review the experiments with you.
- You will generally be asked to prepare some initial solutions or obtain solutions from the stockroom.
- Your professor will have to instruct you on the use of the instruments. So be patient if you have to wait.