

## **Instrumental Analysis (Laboratory)**

### **Spring 2008**

You may choose your lab partner and inform me of the choice Wednesday (1/16). There may be at most two (2) people to a group. I will assign partners to those people who do not inform me of their choice of partner. Partners may work together on calibrations and standardizations, but will have their own unknowns.

Lab work is to be accomplished during the assigned laboratory period. You will not start early, stay late, or work at times other than those specified without **prior** approval of the instructor.

All laboratory data will be recorded in a bound, 2-part laboratory notebook with sequentially numbered pages. Beneath the page number you will leave space for the date, and at the bottom you will leave space for your signature and date and my initials and date. The 'carbon' of your laboratory data will be submitted with your laboratory report. It is your responsibility to get my initials within 1 working day of the date at the top of the page. If I am not present, you may get the initials/date from any of the Physical Science faculty or staff members. Although it is not required, I encourage you to perform all of the work associated with your experiment in your lab notebook.

Laboratory reports will be typed, and will consist of the following parts:

#### **Brief Introduction**

**Procedures and Data** - A brief description of the procedures, followed by data for the procedure re-tabulated from your laboratory notebook.

**Calculations** - including graphs. For repetitive calculations a single sample calculation is all that needs to be shown.

**Results** - values for unknowns, etc.

**Discussion** - discuss any deviations from the written procedure and any difficulties with the instrumentation that may have affected your results.

Each student shall submit their own laboratory report! Laboratory work will begin 1/22; however, we will meet this week on Thursday for pre-laboratory setup. Each experiment will have a separate drawer with the equipment for that experiment. You are responsible for checking in all equipment at the beginning of the week, and making sure that all equipment is present at the close of the lab.

Block I Lab Reports will be due 3/24 by noon.

**Grading:** A letter grade will be assigned for each lab report. The corresponding point totals for the letter grade are as follows:

A+ = 100	A = 93	A- = 87
B+ = 83	B = 77	B- = 72
C+ = 68	C = 65	C- = 62
D+ = 58	D = 55	D- = 52
	F = 40	

Your laboratory grade will be 50% of your grade in CHEM 4024.

## Lab Schedule - Instrumental Analysis Spring 2008 - Block I

GROUP	1/22	1/29	2/05	2/12	2/19	2/26	3/04
A	1	2	3	4	5	6	7
B	1	3	4	5	6	7	2
C	1	4	5	6	7	2	3
D	1	5	6	7	2	3	4
E	1	6	7	2	3	4	5
F	1	7	2	3	4	5	6

The week of 3/11 will be used as a make-up in case of problems with an instrument.

- 1) Spectrophotometry in the Visible Region
- 2) Atomic Absorption Determinations (2E)
- 3) Spectrophotometric Titration in the Near-IR (5E)
- 4) Determination of the  $pK_a$  for an Indicator (14E)
- 5) Formula of a Complex (11E)
- 6) Determination of Quinine using Fluorescence Spectroscopy (8E)
- 7) Determination of Optimum Flow Rate in Gas Chromatography (17E)

Note that the experiment number corresponds with the assignment number on BlackBoard