

## CHEM 1110

### EXPERIMENT 1: INTRODUCTION TO THE CHEMISTRY LAB AND USE OF THE ANALYTICAL BALANCE

Name:

**Objective:** To learn the proper use of the analytical balance and the method of weighing by difference, and the calibration of 15.00 mL pipet by pipetting techniques.

Procedure:

#### WEIGHING EXERCISE:

Weigh approximately 0.5 g of sodium bicarbonate in a small weigh boat on a triple beam balance. Then weigh it accurately on an **analytical balance** and record its mass. Transfer the sample into a 100.0-mL volumetric flask using a plastic powder funnel. Weigh the boat plus residue on the **same analytical balance**. Rinse the sides of the funnel with distilled water and then dilute to the 100.0-mL mark with distilled water. Cover the flask with a lid and mix thoroughly. Show your solution to the lab instructor.

#### Data:

Mass of boat + NaHCO <sub>3</sub> (g)	
Mass of boat + residue (g)	
Mass of NaHCO <sub>3</sub> (g)	

PIPETTING EXERCISE

Weigh an empty 100-mL beaker on an **analytical balance** and record its mass. Pipette 15.00-mL of distilled water into the beaker. Weigh the beaker plus water on the **same balance**. Pipette another 15.00-mL of water into the same beaker and weigh it again. Repeat this process three more times.

**Data and calculations:**

Mass of empty 100-mL beaker = \_\_\_\_\_ g

Pipetted Volume (mL)	Mass (g) of beaker + pipetted water	Mass (g) of <b>15.00 mL</b> pipetted water	Deviation from the average mass (g)
15.00			
30.00			
45.00			
60.00			
		Average Mass =	Average Deviation =

**Calculation of Average Volume delivered by 15.00 mL pipette**

(Use density of water at a given temperature in the lab manual to calculate the average volume and average deviation in terms of volume)

Volume delivered by 15.00 mL pipette

*That is :*

Average volume (mL)  $\pm$  Average deviation(mL)