

General Chemistry 131 Laboratory Practicum Study Guide

There are six different stations, plus a separate Calculation Section. There is a data sheet for each station. You will have 20 minutes to do the work for each station. You must work on the Calculation Section whenever you have free time. The Calculation section DOES NOT have a designated 20 minute period.

A CALCULATOR AND PEN/PENCIL WILL BE REQUIRED! PROGRAMMABLE CALCULATORS WILL NOT BE ALLOWED. SHARING OF CALCULATORS WILL NOT BE ALLOWED.

There is to be NO TALKING among students.

You will use glassware at the individual stations as well as supplies provided in a plastic shoe box container. You must carry the supply box with you as you move from station to station. At the conclusion of the Practicum you will be required to clean the equipment in the box prior to an inspection by your Instructor. You will be charged for damaged and/or missing items.

Students will be responsible for the following techniques and information.

1. Properly identify equipment/glassware commonly used in the lab.
2. Read and record data from several pieces of glassware and/or equipment used in the lab, such as, a balance, graduated cylinders, a buret, a pipet, a thermometer, volumetric flask.
3. Determination of a liquid density. Students will be responsible for the correct usage and reading of a 10 ml pipet.
4. Preparation of a solution in a volumetric flask.
5. Determination of solubility values for a liquid.
6. Determination of the boiling point for a liquid unknown. This includes the proper assembling and usage of a hot water bath and boiling point apparatus and lighting a Bunsen burner.
7. Evaporation of a salt solution to obtain a dry solid.
8. Performance and observation of a series of reactions. Students will be responsible for correct recording of observations and writing molecular, complete ionic and net ionic equations.
9. Students will also be responsible for proper use of the solubility rules table and operation of a centrifuge.
10. Standardization of an unknown NaOH solution by titration. Students will be responsible for the proper usage and reading of a 25 ml buret.

11. Basic laboratory calculations used throughout the semester, such as,

- Determination of molarity from titration data
- Conversion of grams to moles and vice versa
- Calculation of % mass/mass and % mass/volume
- Use of $M_1V_1 = M_2V_2$ for sample preparation
- % composition in a mixture
- Determination of % yield
- Determination of a limiting reactant
- Using a computer generated graph to determine temperatures needed for enthalpy calculations.