

**Chemistry 1A**  
**Proficiency Quiz: Guidelines**  
**Units, Significant Figures, Math and Nomenclature**

You are required to pass a proficiency quiz covering the topics: units, significant figures, basic math skills used in the course and nomenclature (primary emphasis). The standard for passing is 70% of the maximum points. The first version of the proficiency quiz must be taken and its score is recorded. If you fail the first version you are permitted to attempt two more times. *If you fail after the third attempt, the best grade you will earn in the course is C-, no matter how well you perform on other measuring devices.*

**1. Units:**

- a. You are expected to know the units of mass, length, time, and density for the SI system of units.
- b. You are expected to know and be able to use the following prefixes used in the SI system of units: mega-, kilo-, deci-, centi-, milli-, micro-, nano- and pico-.
- c. You are expected to be able to convert between units in the metric and English system of units, and prefixes.
- d. You are expected to provide units with measured numbers in problems and in recording laboratory data.

**2. Significant Figures:**

- a. You are expected to be able to determine the number of significant figures in a measured number and a counting number.
- b. You are to be able to determine the correct number of significant figures in a calculated answer involving addition, subtraction, division and multiplication. Answers should be expressed in exponential notation when they are large or small in magnitude.

**3. Math Skills**

The primary math skills used in the course are:

- a. Using linear equations and solving for variables and constants both in word problems and in laboratory experiments.
- b. Using ratios to solve for an unknown.
- c. Using the quadratic equation.
- d. Using percentages in problems.
- e. Graphing data and interpreting a graph.
- f. Geometrical shapes and angles.
- g. Logarithms

The first proficiency quiz will have one or two problems involving one or more of the above topics.

**3. Nomenclature:**

- a. This is a major theme of the proficiency quiz. It will account for 60 - 70% of the total points on the quiz.
- b. The following give some brief guidelines. These are very general and you need to explore the rules in your text and laboratory manual in more detail. To be successful in writing chemical formulas or naming compounds you must do extensive practice.