

Syllabus – HAAS CAA Placement Test
Chemistry
Topics:

1	Content Area 1: Matter and its properties (55% - 65%)
	Meaning of what chemistry is and its scope
	Units of measurement and conversion between them
	Sources errors and uncertainty in measurements
	Classification of matter, Changes of matter
	Atomic theories, Atomic structure, Atomic spectra and their applications, Atomic composition
	Periodic table and how elements properties determined based on their location, Periodicity
	Volume, temperature, pressure, and amount of a gas, Relationships among the four quantities of a gas and their calculations
	Characteristics of solutions and factors affecting solubility
	Properties of solutions (qualitatively and quantitatively)
	Electronic composition of the carbon atom
2	Content Area 2: Energy, force and conservation (35% – 45%)
	Ionic, polar, and nonpolar covalent bonds, Shapes of molecules
	The concept of the mole and its applications (stoichiometry)
	Percent composition of a compound, Empirical and molecular formulas of a compound, Percent yield
	Acids and bases (strong and weak), The concept and use of pH scale
	The concept of neutralization, Common ion effect, buffer solutions, and solubility
	Meaning of oxidation and reduction, redox reactions, and activity series
	Redox reactions to produce electricity and manufacture electrolytic and galvanic cells
	Factors affecting the reaction rate
	Chemical equilibrium
	Energy changes during chemical reactions and/or physical changes, Hess's law and how it can be used to predict the occurrence of the chemical reaction