

**Syllabus – EAID CAA Placement Test**
**Chemistry**
**Topics:**

<b>1</b>	<b>Matter and its properties</b>
	<ul style="list-style-type: none"> <li>• Chemistry and its scope</li> <li>• Units of measurement and conversion between them</li> <li>• Sources errors and uncertainty in measurements</li> <li>• Classification of matter, Changes of matter</li> <li>• Atomic theories, Atomic structure, Atomic spectra and their applications, Atomic composition</li> <li>• Periodic table and how elements properties determined based on their location, Periodicity</li> <li>• Volume, temperature, pressure, and amount of a gas, Relationships among the four quantities of a gas and their calculations</li> <li>• Characteristics of solutions and factors affecting solubility</li> <li>• Properties of solutions (qualitatively and quantitatively)</li> <li>• Electronic composition of the carbon atom</li> <li>• Diversity of organic compounds in terms of shape, size, and chemical and physical properties</li> <li>• Classifications of organic compounds in terms of functional groups</li> <li>• Types of organic reactions and their applications</li> </ul>
<b>2</b>	<b>Energy, force and conservation</b>
	<ul style="list-style-type: none"> <li>• Ionic, polar, and nonpolar covalent bonds, Shapes of molecules</li> <li>• The concept of the mole and its applications (stoichiometry)</li> <li>• Percent composition of a compound, Empirical and molecular formulas of a compound, Percent yield</li> <li>• Acids and bases (strong and weak), The concept and use of pH scale</li> <li>• The concept of neutralization, Common ion effect, buffer solutions, and solubility</li> <li>• Meaning of oxidation and reduction, redox reactions, and activity series</li> <li>• Redox reactions to produce electricity and manufacture electrolytic and galvanic cells</li> <li>• Factors affecting the reaction rate</li> <li>• Chemical equilibrium</li> <li>• 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</li> </ul>