

Curriculum Plan of Dr. Kapil Mohan Saini

(Even Semester 2025-2026)

Semester-II

Name of Paper & Code: CHEMISTRY –DSC: Chemical Bonding and Elements in Biological System (1 Periods Per Week)

Contents	Allocations of Lectures	Month wise Schedule to be followed	Tutorials/Assignment/Presentation
<p>Unit II: Elements in Biological System</p> <p>Classification of elements in biological system, Geochemical effect on the distribution of metals, Metal ions present in biological systems with special reference to Na^+, K^+, Ca^{2+}, Mg^{2+}, Fe^{2+}, Cu^{2+} and Zn^{2+}, Sodium / K-pump, Role of Ca^{2+} (blood clotting and structural), Role of Mg^{2+} in chlorophyll and energy production, Excess and deficiency of some trace metals, Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Dose response relationship curves of metal ions, Iron and its application in bio-systems, Storage and transport of iron.</p> <p>Brief introduction to Metallic Bonding, Hydrogen Bonding, van der Waals forces</p>	15	1 st Week of January – 2nd week of April	<ul style="list-style-type: none">- Syllabus Overview- Reference Books- Problem Solving- Class Test,