CURRICULUM PLAN

Odd Semester (2026-2027)

Name of the Teacher: Dr. Sajid Iqbal
Course: B.Sc. (H) Generic, Year- I, Semester- I
Name of Paper and Class Assigned: Atomic Structure and Chemical Bonding (GE 1),
1 Period per Week

Contents	Allocation of Lectures	Month wise schedule to be followed	Tutorial/Assignment/ Presentation etc.
Unit-1: Atomic Structure Review of: Bohr's theory and its limitations, Heisenberg uncertainty principle, Dual behaviour of matter and radiation, De-Broglie's relation, Hydrogen atom spectra, need of a new approach to atomic structure. Time independent Schrodinger equation and meaning of various terms in it. Significance of ψ and ψ2, Schrödinger equation for hydrogen atom, radial and angular parts of the hydrogen wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation), radial and angular nodes and their significance, radial distribution functions and the concept of the most probable distance with special reference to 1s and 2s atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers ml and ms. Shapes of s, p and d atomic orbitals, nodal planes, discovery of spin, spin quantum number (s) and magnetic spin quantum number (ms). Rules for filling electrons in various orbitals, electronic configurations of the atoms, stability of half-filled and completely filled orbitals, concept of exchange energy, relative energies of atomic orbitals, anomalous electronic configurations.	14	28th July – 4th week of November	• Syllabus Overview • Reference Books • Understanding the concept • Assignment • Class Test • Solving Previous Years Paper