Lecture Plan

Name of the college: Govt. college of Arts Sci. and Com. Sanquelim

Name of Faculty: Ms. Varsha K. Sail	**Subject:**Chemistry	
Paper code: CHC-100 Fundamentals of Chemistry	**Program: FY BSc**	**Division: A**
Academic year: 2025- 2026	**Semester: II**	**Total Lectures: 15**

Course Objectives

To acquire knowledge about the fundamental concepts of organic, inorganic andphysical chemistry

2. Explain properties and applications of liquid and gases.

3. Elucidate the atomic structure based on Quantum theory.
4. Understand basic concept of organic chemistry, preparation and reactions of alkanes,alkenes and alkynes

Expected Course Outcome:
Students attain understanding about the progression in theories of atomic structure and basic understanding of quantum theory.

Student Learning Outcome: Students are swept through different theories of Atomic structure, with detail understanding fact in of

quantum theory							
Month	**Lecture From**	**Lecture To**	**No. of lectures allotted**	**Topic, Subtopic to be covered**	**Exercise/ Assignment**	**ICT Tools**	**Reference books**
December 2025	1st	6th	01	**Fundamentals of Inorganic Chemistry** **Atomic Structure:** Introduction to Different theory, significance of Rutherford model	See videos on Rutherfords expt.	Smart board, PPT and chalk and black board	Lee, J.D. *Concise Inorganic Chemistry* ELBS, 1991. 2. Cotton, F.A., Wilkinson, G. & Gaus, P.L. *Basic Inorganic Chemistry*, 3rd ed., Wiley. 3. Douglas, B.E., McDaniel, D.H. & Alexander, J.J. *Concepts and Models in Inorganic Chemistry*, John Wiley & Sons. 4. Huheey, J.E., Keiter, E.A., Keiter, R.L. & Medhi, O.K. *Inorganic Chemistry: Principles of Structure and*
	8th	13th		Review of: Bohr's theory			
	15th	20th		Limitations of Bohrs theory			
Jan 26	5th	10th		dual behaviour of matter and radiation, de Broglie's relation,			
	12th	17th		Heisenberg Uncertainty principle. Hydrogen atom spectra. Need of a new approach to atomic structure.			
	19th	24th		Introduction to Schrodinger equation (**equation not to be derived**) and wave function.			
	27th	31st		Holiday			
Feb 26	2nd	7th		Radial and angular parts of the hydrogenic wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only			

				graphical representation)		*Reactivity*, Pearson Education India, 2006.
	9th	14th		Radial and angular nodes and their significance.		
	16th	21st		Radial distribution functions and the concept of the most Probable distance with special reference to 1s and 2s atomic orbitals.		
	23rd	28th		Quantum numbers and their significance, Discovery of spin, spin quantum number (s)		
March 26	2nd	7th		and magnetic spin quantum number (ms)..	Draw diagram of all orbital – radial and angular	
	9th	14th		Shapes of s, p and d atomic orbitals, nodal planes.		
	16th	21st		Rules for filling electrons in various orbitals, electronic configurations of the atoms.		
	23rd	28th		Stability of half-filled and completely filled orbitals, concept of exchange energy. Relative energies of atomic orbitals, Anomalous electronic configurations	Write electronic configuration	

					of all elements from H to Zn	
	30th	31st		Problems		

*** Assessment Rubrics**

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
ISA 3	7.5
Semester End Exam	60