Course Code	Course Title	C	H	I	E	T
17U3CAC1	**ANCILLARY CHEMISTRY – I** *(For II Mat, II Phy and II Zoo)*	2	2	25	75	100

UNIT I ATOMIC STRUCTURE – I 6 Hrs

Brief introduction to structure of atom - Rutherford and Niels Bohr's model of an atom and their defects - Sommerfeld's modification of atomic structure and quantum numbers – Hydrogen spectra.

UNIT II ATOMIC STRUCTURE – II 6 Hrs

Electronic configuration and Orbitals-shapes of s, p and d orbitals. - Pauli's exclusion principle - Hund's rule of maximum multiplicity - Aufbau principle - Heisenberg's uncertainty principle.

UNIT III INTRODUCTION TO ORGANIC CHEMISTRY 6 Hrs

Classification of organic compounds. Functional groups – definition – various functional groups - General formula and examples for following: Alcohols, Alkyl Halide, Carbonyl compounds, Carboxylic acids and Amines. Types of organic reactions – Substitution, Addition and Elimination reactions (examples only, not mechanism)

UNIT IV CHEMICAL BONDING 6 Hrs

Types of Bonds – electrovalent, ionic, covalent, co-ordinate covalent, metallic and H-bonding. Characteristics of electrovalent and covalent compounds.Hybridisation- Introduction, sp^3, sp^2, and *sp* hybridisation in methane, ethylene & acetylene only.

UNIT V SURFACE CHEMISTRY 6 Hrs

Definition of adsorption, occlusion, absorption, adsorbent, adsorbate – Types of adsorption: Physisorption and chemisorption – differences between physisorption and chemisorption – applications of adsorptions – factors influencing adsorption process.

Reference books:

1. Puri, B.R., Sharma, L.R. and Pathania, M.S., 2004 (41stEdn.), Principles of Physical Chemistry, S.N. Chand and Co., New Delhi.
2. Bhal, B.S. and ArunBahl, 2004, Advanced Organic Chemistry, S. Chand and Co. Ltd., New Delhi.
3. Madan, R.D., 2005, Modern Inorganic Chemistry, Sultan Chand and Co. Ltd., New Delhi.
4. SathyaPrakash, Tuli, Basu& Madan, 1999, Advanced Inorganic Chemistry. Vol. II , 17th Revised Edition, S. Chand and Co. Ltd., Ram Nagar., New Delhi.
5. Puri. B.R., Sharma. L.R., 1989, Principles of Inorganic Chemistry, ShobhanLal Nagin Chand and Co., Jalandar.