**Paper II: Synthetic Organic Chemistry (CHE-552)**

**BLOCK I: ORGANIC SYNTHESIS-I**

Unit –1: A brief review of functionalisation and functional group transformation reactions And oxidation of alkanes and alkenes

Unit – 2: Oxidation of alcohols

Unit – 3: Reduction by catalytic hydrogenations

Unit – 4: Reduction by hydride transfer agents

Unit – 5 : Reductions by dissolving metals.

**BLOCK II :ORGANIC SYNTHESIS – II**

Unit – 6: Formation of carbon-carbon single bond

Unit – 7: Formation of carbon-carbon double bond

Unit – 8: Synthetic applications of organoboranes

Unit – 9: Synthetic applications of organosilanes

Unit – 10: Protecting groups in organic synthesis

**BLOCK III : SYNTHETIC STRATEGIES**

Unit – 11 : Introduction, target selection and terminology

Unit – 12 : Disconnection approach with examples

Unit – 13 : Strategic bond in carbocyclic and heterocyclicsystems

Unit – 14 : Applications of some important strategies in organic synthesis

Unit – 15 : Some selected synthesis

**BLOCK IV : ASYMETRIC SYNTHESIS**

Unit – 16 : Topicity, configurational descritors and stereoselectivity

Unit – 17 : Principles of asymmetric synthesis and analysis of stereoisomer mixture

Unit – 18 : Substrate controlled methods

Unit – 19 : Auxilliary controlled methods

Unit – 20 : Reagent controlled and catalyst controlled synthesis