

## **POLYMERIC MATERIALS (3-1-0) 4 Cr.**

1. Introduction to Polymeric Materials, Techniques of Polymerization, Molecular weight and its distribution, Molecular Architecture (Linear, Branched, Cross-linked ) / Tacticity, Amorphous and Crystalline Polymers, Glass and Melting Transitions., Liquid Crystalline Polymers, Conducting polymers.
2. Sources and manufacturer of raw materials for polymers [C<sub>1</sub> – C<sub>6</sub>].
3. Comparative properties and applications :  
Thermoplastics : Polyolefin's (polyethylene's, polypropylene, vinyl polymers and copolymers, styrene-homo and copolymers, Acrylic homo and co-polymers, cellulosics, nylons, aromatic polyamides and polyimides, PET, PBT and aromatic polyesters, fluoro polymers, polycarbonates, polyacetals, aromatic polyether/ polysulfones / polyphynelens / polyetheretherketone / polyurethanes / Thermoplastics / Thermosets).
4. Comparative properties and applications  
Thermosetting plastics : Formaldehyde resins (PF/UF/MF), Epoxy resins, unsaturated polyesters, silicones.

### **TEXT BOOKS :**

1. J.A.Brdyson, "Plastics Materials", Butterworth Heinemann, Oxford, 7<sup>th</sup> edition (1999).
2. Fred W.Billmeyer, Jr., "Text Book of Polymer Science", John Wiley and Sons, Singapore
3. P.Ghosh, "Polymer Science and Technology of Plastics and Rubbers – New Edition.