

UG

Course Code: **CH405**

Credit: **3**

Version: **1**

Prerequisite Course: **Nil**

Department: **Chemical Engineering**

Course Name: **Introduction to Plastic Materials**

L-T-P: **3-0-0**

Approved on:

Additives for plastics: Stabilizers, fillers, plasticizers, lubricants, flame retarders, foaming agents, cross-linking agents, etc.

Manufacture, properties and applications of major thermoplastic: polyethylene, polypropylene, polyvinyl chloride, polystyrene and other styrenics, polyamides, polyesters.

Thermosetting polymers: phenolformaldehyde, urea and melamine - formaldehyde, unsaturated polyester, epoxy resins.

Definition. Characteristics of engineering plastics. Important engineering thermoplastics such as acrylics, ABS, Polyesters, Polycarbonate, polyamides, polyphenylene oxide, polystyrene, polyphenylene sulfide, PEK .Processing and application of engineering plastics

Definition and characteristics of speciality polymers Important speciality polymers such as fluropolymer, silicone, liquid crystalline polymers, conducting polymers, polymeric hydrogels Processing and application of speciality polymers.

Books

1. J.A.Brydson, Plastics materials, Butterworth- Heinemann – Oxford, 6th Ed., 1995.
2. Irvin .I. Rubin, Hand Book of Plastic Materials and Technology, Wiley Interscience, NY, 1990.