7th Semester	RPL7D004	Thermoplastics Elastomer	L-T-P 3-0-0	3 Credits

Module-I: **(10 hours)**

Synthesis, morphology, Properties, formulating, compounding and application of styrenic block Copolymers. Thermoplastic Elastomer based on polyamides and Thermoplastic Polyether ester elastomers – Synthesis – Morphology – Properties – Compounding - Bonding and welding – Applications -Blends.

Module-II: **(10 hours)**

Thermoplastic Polyurethane – Synthesis – Morphology –thermal transition – PropertiesApplications – Blends of TPU with other polymer – Bonding and welding.

Module-III: **(10 hours)**

Synthesis, Morphology, Property, Blends and application of TPE based on Polyolefin – TPE based on Halogen: PVC/NBR, FKM – Ionic TPE - Other TPEs – Elastomeric stat block copolymers – TPEs based on Interpenetrating Network – Based on Polyacrylates.

Module-IV: **(10 hours)**

Processing Methods –Introduction – Mixing and blending equipment – Extrusion –Injection molding – Compression molding – Transfer molding – Blow molding - Foaming – Thermoforming – secondary manufacturing process.

Books:

[1] Jiri George Drobny, "Handbook of thermoplastic Elastomers", William AndrewPublication, Plastics Design Library, 2007.
[2] Hoffman, Rubber Technology Handbook -, Hanser Pub. Munich – 1996