

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 3

Textile Production

Subject Code 132804
Subject Name Polymer Chemistry

Sr.No	Course contents
1.	Basic Concepts : Defination, Classification of Polymeric Material, General methods of preparation of polymers, Classifications of Polymerisation reaction, Polymerisation technique, Polymer structure - Polymer geometry, structural unit variety, Polymer tactility, Polymer utilisation. Scope, raw material preparation, structure, properties & important copolymers for the following chemical classes: Polyolefin - Polyethylene, Polypropylene, Butyl rubber, Polystyrene, Polyvinyl chloride, Polyvinyl acetate, Acrylic polymers, Polyamides & related polymers, Polyesters, Cellulose, related polymers, Silicones, Phenol - Formaldehyde polymers, Ammopolymers, Polydiene - Natural rubber, Vulcanization, Epoxies
2.	Measurement of molecular weight & size - end group analysis46 Light Scattering etc
3.	Analysis & testing of polymers - Chemical, Thermal Analysis, Spectroscopic method, X-ray diffraction, Microscopy.
4.	Polymer Reaction - Hydrolysis, Acidolysis, Hydrogenation, Addition & Substitution Reaction, cyclization, crosslinking etc. Polymer Processing - Plastic Technology, Elastomer Technology
5.	Polymers & Environment : Pollution by polymers, Polymers & energy, Need of awareness for the future.

Reference Books:

1. Organic Polymer Chemistry - J. Saunder, Chapman & Hall
2. Text Book Of Polymer Science - Fred W. Billmeyer Jr. John Wiley & Sons
3. Polymer Science - R. Govariker, N. V. Vishvanathan, Jaydev Shreedhar
4. The Chemistry Of Polymers - W. Nicholson, Royal Society Of Chemistry