SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Materials Science)
Semester: III
Syllabus with Effect from: June - 2013

Paper Code: PS03CMTS07	**Total Credit: 4**
Title Of Paper: Fibers, Plastics And Elastomers	

Unit	Description in detail	Weightage (%)
I	Synthesis, properties and application of selected thermoplastic and thermosetting resins such as polyolefins, vinyl resins, polystyrene, polyesters, epoxy, phenolic, amino and silicon resins. Additives for plastics. Processing technologies like, extrusion, injection molding, thermoforming, blow molding, calendering, rotational molding, machining of plastic, selected plastic mechinary designs theory and quality control.	25%
II	Elastomeric materials, natural rubber, selected synthetic rubbers, thermoplastic elastomer and reclaimed rubber. Processing technologies of rubbers, additives for elastomers, rubber compounding and processing technology, sulfur vulcanisation, theory of sulfur vulcanization & accelerator action, non-sulphur vulcanization, accessment of processability & state of cure, hard rubber, latex technology, some major rubber products	25%
III	Commercial fiber forming polymers like poly (ethylene terephthalate), Nylon 6, 66, acrylics, polypropylene, elastomeric fibers, polyvinyl chloride, and aramid fiber.	25%
IV	Fiber spinning techniques, melt spinning, wet and dry spinning, spin finishes, and basic post spinning operations, identification, testing and evaluation of polymers and fibers.	25%

Basic Text & Reference Books:-

- Polymers Science & Tech of plastics & Rubber by P. Ghosh
- Production of Synthetic Fibers byA. A. Vaidya
- Elastomers and Rubber Compounding Material by I. Franta
- Plastic Materials and Processing – A Brent Strong.
- Plastic Materials by J.A. Brydson.