

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

Paper Code: PS03CMTS01	Total Credit: 4
Title Of Paper: Glass, Ceramic and Carbon Materials	

Unit	Description in detail	Weightage (%)
I	Various types of ceramics, phase diagrams, principles of main fabrication techniques. Properties of fabricated bodies, density, porosity, permeability, mechanical properties, thermal properties, optical properties.	25%
II	Nature of glass, structure, glass forming systems, silicate systems, non-silicate systems, Types of Glasses, manufacture of glass.	25%
III	Phase diagram, types of refractories, fireclay, mullite, silica refractories, magnesite refractories, carbide & nitride refractories, pure oxide refractories, chrome & magnesite refractories, cement types processing & properties.	25%
IV	Introduction to carbon, mechanical & thermal properties, hybridization and different crystalline and amorphous carbon, General law material for processing of carbon and graphite materials, properties of carbon and graphite. Activated carbon, raw materials, processing of raw materials, pyrolysis, physical activation, chemical activation, adsorption properties and application of porous carbon.	25%

Basic Text & Reference Books:-

- Science of Engineering Materials – Manas Chanda
- Ceramic Science for Materials Technologists – I. J. McColm.
- An Introduction to carbon science – Herry Marsh
- Industrial Ceramic – F. Singer, S. Singer.
- Carbon Science- C.L. Mantel

