

GUJARAT TECHNOLOGICAL UNIVERSITY
B.E. SEMESTER : V
CHEMICAL TECHNOLOGY

Subject Name: Polymeric & Rubber Materials - II

Subject Code: 153606

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
3	0	2	5	70	0	30	50

Sr. No	Course contents
Manufacturing of Thermoset polymers such as	
1.	Alkyl resins & modified alkyls, raw materials, oils & film forming materials
2.	Polyesters Resins-unsaturated polyesters resins, composites & fiber reinforced polyesters
3.	Phenolic resins, Alkali catalyzed & acid catalyzed reactions, CNSL based resins
4.	Amino resins, raw materials, UF, PF & MF resins.
5.	Epoxy resins, Polyurethanes for molding & for coating industry.
6.	Silicones & elastomers of silicon, Thermosetting acrylics.
7.	Technology of Cross linking processes Technology of Vulcanization & DE vulcanization of rubbers.

Reference Books:

1. Text book of Polymer Science, Billmeyers, John Wiley & Sons 1984.
2. Encyclopedia of Polymer Science & Technology, John Wiley & Sons, Inc 1965
3. Encyclopedia of Polymer Science & Engineering, John Wiley & Sons, Inc 1988.
4. Polymer Chemistry Malcolm P. Stevens, Oxford University Press, Inc, 1990
5. Introduction to Polymer Science & Technology , H.S.Kaufman & J.J.Falcetta, Wiley – Interscience Publication, 1977
6. Handbook of Polyethylene, A.J.Peacock, Marcel Dekker Inc, 2000
7. PVC Technology, Multi-Tech Publishing Co, A.S.Athalye & Prakash Trivedi, 1994
8. Engineering Thermoplastics Polycarbonates Polyacetals Cellulose Esters, L. Bottenbruch, Hanser Publishers, 1996
9. Composite Polymeric Material, R.P.Sheldon, Applied Science Publishers, 1982
10. Composites: Design Guide, Industrial Press Inc, 1987.
11. Composite Material Handbook, M.M.Schwartz, McGraw-Hill company, 1984
12. Biopolymers, Wiley, VCH Verlag, 2003
13. Handbook of Thermoplastics, O.Olabisi, Marcel Dekker, 1997.
14. Plastics Materials J.A.Brydson, Butterworth Scientific, 1990
15. Polymer chemistry, Seymour & Carraher, Marcel Dekker, 2003
16. Polymer & Resins, Their Chemistry & Chemical Engg. Brage Golding, D.Van Nostrand Company Inc, 1959

17. Structures of Cellulose, American Chemical society, Atlla,2003
18. Styrene Based Plastics & their Modifications, Svec, Ellis Harwood, 1991
19. Polymer Technology ,Miles & Briston, Chemical Publishing Co., Ltd, 1996
20. Handbook of Rubber Technology, S Blow, Galgotia Publications Pvt. Ltd, 1998
21. Rubber Technology, Morell S H, Applied Science Publication, 1981
22. Plastics and Rubber, E W Duck, Butterworth, 1971
23. Tyre and Vehicle Dynamics, Hans B Pacejka, SAE International, 2nd Ed, 2005
24. Introduction to Rubber Technology, Andrew Ciesielski,RAPRA Publications, 2000
25. Rubber Technology, Maurice Morton, Springer, 1st Ed, 1987
26. The Science and Technology of Rubber, Mark and Erman, Academic Press,3rd Ed,2005
27. Rubber Processing, Robert Johnson, Hanser Publications, 2001
28. Rubber Compounding, Barlow, CRC Press, 2nd Ed, 1993
29. Rubber Compounding : Chemistry and Applications , Brendan Rodgers, CRC, 1st Ed, 2004
30. Rubber Compounding 2E: Compounding and Testing for Performance, John Dick, Hanser Publications, 1st Ed.,2009
31. The Mixing of Rubber, R F Grossman, Springer, 1st Ed.,1997