

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

Subject Name: Science & Technology of Additives

Subject Code: 153609

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
4	0	2	6	70	0	30	50

Sr. No.	Course contents
01.	Additives industry size and nature. Additives and role thereof, Classification of additives based on their function. (Antioxidants, uv Stabilizers, dispersants, emulsifiers, colorants, fire retardants, anti-static agents, fillers, plasticizers, nucleating agents, anti-scorch, foaming agents, lubricants, flavors, biocides, antifreeze etc. relevant for different industrial products based upon plastics, rubber, dyes & pigments, textiles, pharmaceuticals, food, glass and ceramics etc.
02.	Chemistry and mechanism of functioning of additives, synthesis, chemical and physical characterization of additives. Storage and transportation of additives. Functional evaluation of additives.
03.	Application and incorporation of additives. Effect of one additive on the performance of other additives, Master batch or additive concentrate concept, Regulatory agencies and practices for additives.

Reference Books:

1. Plastic additives Handbook, Zweifel H., Maier R D , Schiller M, Hanser Publishers 2009,
2. Food additives, Branen A L , Davidson P M , Salminen S; Marcel Dekkar, Inc, 1990, 2005
3. Food additives – Characterization, detection and estimation; Mahendru S N , Tata McGraw Hill Book Co, 2000.
4. Pharmaceutical Product Developments, Jain N K , CBS Publications, New Delhi, 2006,
5. Profiles of Drug Substances, Brittain H G , Academic Press 2007,
6. Paints Coatings & Solvents, Stoyes & Freitag, VCH Publishers, 1998
7. Encyclopedia of Industrial Chemistry, Ullman, Wiley VCH, 2003
8. Handbook of Pharmaceutical Excipients, Edited by R C Rowe, P J Sheskey and P J Weller, 4th Ed., 2003, Pharmaceutical Press, London UK, & American Pharmaceutical Association, Washington D C, USA
9. Additives for water based coatings, Karsa D R, 1990, Cambridge Royal Society of Chemistry,
10. Pharmaceutical Dosage Forms and dispersing agents, Liberman H A, Riger M M, and Banker G S, Marcel Dekker, 1998, 2nd Ed., ISBN 0 8247 – 9842 – 2