

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

Subject Name: Analytical Methods for Dyestuff & Pigment Industry

Subject Code: 173609

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
4	0	3	7	70	30	30	20

Sr. No	Course contents
1.	Importance of instrumental methods in conjunctions with conventional analytical methods. Spectral methods of analysis – interaction of electromagnetic radiation with colorants & various types of spectral methods & information obtained from them – quantitative. ultraviolet & visible spectrophotometry – solutions coloristics. Usefulness of visible spectral data for obtaining structural information.
2.	Nuclear magnetic resonance spectroscopy – Principles & applications in structure determinations of simple organic intermediates & dyes
3.	Infrared absorption spectroscopy – empirical treatment for identifying functional groups & structure elucidations of organic intermediates & dyes
4.	Mass spectroscopy fragmentation patterns – empirical approach in structure elucidation of organic intermediates & dyes.
5.	Combined applications of UV - visible, NMR, IR & mass spectral data for structure elucidation

Reference Books:

1. Instrumental Methods of Chemical Analysis, E. W. Ewing, McGraw Hill, New York. 4th Ed, 1975
2. Instrumental Methods of Analysis, H.H. Willard, L.L. Merrit, J.A. Dean, & F.A. Settle, Jr., CBS Publishers & Distributors, New Delhi, 6th Ed, 1998.
3. Principles of Instrumental methods of analysis, Skoog, D.A., Holler F.J. & Nieman T.R., Indian reprint, 2006
4. Inorganic quantitative analysis, A.I. Vogel, Longman, ELBS, 7th Ed, 1998
5. Liquid Chromatography for Natural Dyes and Synthetic Pigments, T Cserhati, Elsevier, 2007