

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Semester : IV Chemical Technology

Subject Code: 143604

Subject Name: Chemistry of Intermediates & Colorants – II (Department Elective – II)

(Institute Subject Code: DP - 02 : Dyes & Pigment Technology)

Sr. No.	Course contents
01.	Color of organic compounds. Spectral properties of colorants, fluorescent brighteners & fluorescent colorants. Jablonski diagram. Color & chemical constitutional relations-empirical treatment. Classification of chromospheres based on application to textiles-Acid dyes, direct dyes, basic dyes, vat dyes, sulphur dyes, solublized sulphur & vat dyes, azoic dyes, oxidation colors, reactive dyes, mineral colors.
02.	Chemistry of azo dyes-Mechanism of diazotization & coupling reactions. Azoic dyes, Azoic printing compositions. Monoazo & Disazo acid dyes. Substituent for benzidine.
03.	Basic dyes-conventional & pendant basic dyes. Chemistry of diphenyl & triphenylmethine dyes & their heterocyclic analogues like oxazines, diazines & thiazenes. Cyanines, hemicyanine & diazahemicyanines. dioxazines as direct dyes.
04.	Anthraquinone acid dyes, nitrodiphenylamine acid dyes. Acid dyes obtained from basic dyes.
05.	Disperse dyes-azo, anthraquinone, nitrodiphenylamine classes. Pendant basic dyes. Properties of disperse dyes like dispersibility, dye uptake, sublimation in relation to their chemical constitution.
06.	Reactive dyes based on halogenated heterocycles & activated double bonds. Bifunctional reactive dyes. Copper phthalocyanine-synthesis & conversion into other class of colorants.
07.	Chemistry of anthraquinonoid, indigoid & polycyclic quinonoid vat dyes.

Reference Books:

1. Chemistry of Synthetic Dyes, Lubs H.A., Robert E Krieger Publishing Company New York, 1st Ed.,1995
2. Chemistry of Synthetic Dyes – Vol I, Venkatraman K., Academic Press, New York, 2009
3. Chemistry of Synthetic Dyes – Vol II, Venkatraman K., Academic Press, New York, 2009
4. Chemistry of Synthetic Dyes – Vol III, Venkatraman K., Academic Press, New York, 2009
5. Chemistry of Synthetic Dyes – Vol IV, Venkatraman K., Academic Press, New York, 2009
6. Chemistry of Synthetic Dyes – Vol V, Venkatraman K., Academic Press, New York, 2009
7. Chemistry of Synthetic Dyes – Vol VI, Venkatraman K., Academic Press, New York, 2009
8. Color Chemistry: Syntheses, Properties and Applications of Organic Dyes and Pigments ,Heinrich Zollinger, Wiley-VCH,2nd Ed, 1991
9. Industrial Organic Chemistry, Arpe H.J.VCH, Weinheim, Weissermal K.1993
10. Organic Synthesis, Smith M.B., Tata McGraw Hill, New York, 2nd Ed., 2004