VEER NARMAD SOUTH GUJARAT UNIVERSITY

SCHEME OF TEACHING

Semester - VIII

B. E. IV (TEXTILE PROCESSING)

TP - 804, TECHNOLOGY OF DYEING - III

Teaching Scheme (No. Of Contact hr.)			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
4	-	3	3	100	45	30	175

Theory

1. **Nature of Dye Fibre Bonds:**
   Vanderwaals Forces, H-bonding, Ionic and Co-valent Bonds
2. Kinetics of Dyeing, Affinity of dyes towards fibres, Thermodynamics of Dyeing process.
3. Adsorption isotherm, equilibrium adsorption & factors influencing the same. Saturation value, diffusion co-efficients, glass transition temperature (Tg) & its effect on dyeability, dye diffusion temperature (Td).
4. Study of Heat of Dyeing using various Dye - Fibre systems such as Direct, Vat, Reactive dyes on cellulose, Acid dyes on Nylon, Wool & Silk, cationic dyes on CDPET and Acrylic. Study the affinity of dyes for water and fibres such as cellulosic, proteins/polyamides, polyester. Partition ratio for Disperse dye on polyester. Rate of Dyeing of ionic and non-ionic dyes on cellulose, protein & synthetic fibres.
5. Effect of fibre structure, chemical & physical such as drawing, heat setting, denier, twist. Effect of -OH, -COOH, $-NH_2$ etc. groups on dyeing diffusion of dyes, determination of diffusion co-efficient of disperse dyes on polyester.
6. Competibility of dyes on different groups on fibres e.g. Acid dyes on Nylon, Direct dyes on cotton, Disperse dyes on Polyester & Cationic dyes on Acrylic & CDPET fibres.
7. Development in dyeing such as,
   (A) Solvent Dyeing (B) Space Dyeing (C) Foam Dyeing etc.

References :-

01.	Dyeing & Chemical Technology Of Textile Fibres	E.R.Trotman
02.	Chemistry Of Dyes And Principle Of Dyeing	V. A. Shenai
03.	Chemistry Of The Textile Industry	C. M. Carr - Blakie Academic & Proffessionals, 1995.