

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

Faculty Name: - Neeraj Bala

Subject Name:-Textile Chemical Processing-I

Year/Semester:-2nd/3rd

Subject Code: - PCC-TEX-207A

LESSON PLAN

S. No.	Topics to be covered	Hour	Total Hours
Unit 1	Introduction, Sequence of chemical processing of textiles, Natural and added impurities of textiles	2	17
	Singeing: Objective, hot plate singeing m/c, roller singeing machine and gas singeing machine, their advantages & drawbacks of each technology, Yarn Singeing	3	
	Desizing- Introduction, object of desizing, rot steep, acid desizing and enzymatic desizing and their advantages & drawbacks of each technology	4	
	Classification of desizing enzymes, Continuous Desizing(using winch), Continuous Desizing(using J-Box), Oxidative Desizing-Chlorine, bromite and chlorite desizing methods, Novel Desizing Methods - Solvent, plasma and enzyme 2000, Desizing Efficiency calculation Methods	4	
	Scouring-Objective, changes taking place during scouring, Saponification, Emulsification, chemicals used for scouring, Scouring of natural, man-made and blended fabrics Working of Kiers, Description and working of J-Box, Evaluation of scouring efficiency	4	
Unit 2	Bleaching: Objectives of bleaching, Methods: Hypochlorite, Peroxide, Chlorine and Per Acetic Acid bleaching methods, Mechanism of action of bleaching methods, Controlling parameter, Efficiency of bleaching	4	12
	Mercerization: Objectives, mechanism related to various physical and chemical changes in cotton during mercerization, process parameters, and efficiency of mercerization, Barium activity number, its determination and interpretation, Different types of Mercerizing machines.	4	
	Heat setting: Objectives and mechanism of heat setting, different methods of heat setting and their effectiveness, Heat setting conditions and controls. Heat setting of polyester and nylon, Heat setting of acetate and their blends. Evaluation of degree of heat setting, evaluation of degree of heat setting	4	
Unit 3	Dyeing of textiles: Dyeing technology of natural textiles with direct dyes, reactive dyes, vat dyes, solubilized vat dyes, sulphur dyes, metal-complex dyes, acid dye basic dyes and azoic dyes	5	12
	Dyeing technology of manmade textiles with acid dye basic dyes, disperse dye	2	
	Dyeing machineries: Loose fibre, yarn dyeing machines, package dyeing machines, description and working of Jigger, winch dyeing m/c, HTHP beam dyeing m/c, and Padding mangles.	5	
Unit 4	Processing of Wool: Wool setting, Wool milling, Rot proofing of wool, mildew proofing of wool.	5	10
	Processing of Silk Processing: Degumming, Silk Finishing, Weighting of silk and Scroop finish.	5	