

# PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

## Department of Textile Engineering

Faculty Name:-Ms. Neeraj Bala

Subject Name: - Textile Testing –I

Year/Semester:-3rd/5<sup>th</sup>

Subject Code: - PCC-TEX -301A

### LESSON PLAN

UNITS	Topic to be covered	Hours	Total Hours
Unit I	Sampling Methods and Moisture Calculation Introduction of textile testing, Reason for Testing, standardization of testing, sampling, sampling techniques, square, cut square, zoning technique, Routine sampling techniques used in the textile industry.	5	11
	Moisture: - effect of moisture on physical properties regain and content, correct invoice weight, Atmospheric conditions for testing,	2	
	Control of testing room atmosphere, moisture regain & moisture content, importance of moisture in textiles, measurement of moisture regain & content	2	
	Effect of moisture on properties (physical & mechanical) of textile material, factors affecting the regain, Shirley moisture meter	2	
Unit II	Cotton Fibre Testing Fibre Dimension: fibre fineness, fineness measurement, fibre length, method of measurement: direct method high volume instrument, advance fibre information system	4	12
	Grading of cotton fibre with respect to staple length, laboratory measurement of fibre length, span length, Baer sorter, servo fibro graph, maturity coefficient measurement by NaOH method, fibre fineness by airflow meter.	3	
	Fibre bundle strength by Pressley, stelometer, determination of trash content: Shirley trash analyzer.	3	
	Fibre quality index, salient features of HVI, AFIS, Nep count. Wrapping test for lap, sliver and roving.	3	
Unit III	Yarn testing, Linear density, Yarn numbering systems, conversion methods, and measurement of yarn number.	2	12
	Twist, classification of twist, twist measurement, Twist, Measurement of twist in continuous filament spun and plied yarns	3	
	Evenness testing of yarns. Nature and causes of irregularities. Principles and methods of evenness testing. Evaluation and interpretation of evenness measurements. Measurement of sliver and yarn unevenness	4	
	Capacitive and optical principle of measuring unevenness. salient features of Uster evenness tester yarn imperfections and classimat yarn faults.	3	

<b>Unit IV</b>	Strength and elongation test, Definition, force- elongation curve, Factor affecting tensile testing, Fibre strength and Yarn strength.-	2	15
	Various terms related to tensile testing, stress-strain curve, various methods for finding the yield point, Application of tensile force by CRL, CRE and CRT method.	3	
	Various principles to apply tensile load on textile specimen. Various terms related to tensile testing, stress-strain curve, various methods for finding the yield point, Application of tensile force by CRL, CRE and CRT method.	5	
	Hairiness, Determination of yarn hairiness.Yarn testing machines. Single yarn strength tester, Uster, Instron testing machine, lea strength testing	5	