PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

Faculty Name: - Dr. R K Baldua/ Mr. Ghnashyam Pande Subject Name: - Theory of Textile Structure

Year/Semester: - 3rd/6th   **Subject Code: - PCC-TEX-308A**

Unit No.	Topic of the Lecture	Hours	Total Hours
Unit I	Idealized yarn geometry	1	12
	Relationship of yarn number and twist factor	1	
	Twist contraction and retraction	1	
	Limits of twist.	1	
	Ideal and real yarns	1	
	Packing of fibre in yarn.	1	
	Ideal packing	1	
	Hexagonal close packing and other forms.	1	
	Packing factor and its measurement	1	
	measurement of packing density and radial packing density	1	
	specific volume of yarns	1	
	Relation between twist, diameter and twist angle.	1	
Unit II	Introduction to fibre migration	1	10
	Ideal migration	1	
	tracer fiber technique	2	
	characterization of migration behavior	2	
	migration in spun yarns	1	
	mechanisms of migration	1	
	effect of various parameters on migration behavior	2	
Unit III	Elements of fabric geometry	1	14
	Cloth setting theories	2	
	Fabric cover	1	
	Fractional and total cover	1	
	Fabric cover and fabric weight relationship	2	
	Pierce's fabric geometry	1	
	Flexible and elastic thread model	2	
	Jammed structure	1	
	Square fabric, crimp interchange	1	
	Relationship between h, p, c,	1	
	Kemp's Race Track Model.	1	
Unit IV	Geometry of weft and warp knitted structures	2	11
	Influence of friction on knit geometry	1	
	Fabric, deformation under tensile stress	1	
	Prediction of modulus	1	
	Tensile properties in bias direction	1	
	Other fabric deformation – compression, shear, bending and buckling	3	
	Fabric handle	1	
	Spirality and skewness formation and its control	1	