MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY, BATHINDA			
GIANI ZAIL SINGH CAMPUS COLLEGE OF ENGINEERING AND TECHNOLGY			
DEPARTMENT OF TEXTILE ENGINEERING			
Academic Year	**2022-23**	**Session**	**Jan-June 2023**
Program	**B.TECH (TEXT ENGG)**	**Semester**	**6th Sem**
Course Code	**BTEX1-603**	**Course Title**	**Knitting Technology**
Course Coordinator	**Er.Deepika Grewal**		

Lecture Plan

S No	Unit and Topic	Lacture Plan (Hour)
1	**Unit 1**	8
	Introduction (Unit 1)	01
	Basic warp and weft knitting	02
	Difference between warp and weft knitting	02
	Classification of knitting machine	01
	Application of knitting machine	01
	Comparison of knitted and woven fabric	02
2	**Unit 2**	25
	Types and specification of needles	01
	Function of sinkers	01
	Basic knitting action of beard, latch and compound needles	02
	Study of knit, tuck and float and their effects on fabric properties and structuers.	03
	Knitting cam system for plain,rib,and purl structures.	04
	Machine and mechanism for producing basic structures viz-plain ,rib, interlock, and purl and their derivatives.	03
	Properties and uses of different types of weft knitted fabrics.	02
	Introduction to patterning in circular knitting machine	01
	General concept, four cam track system	01
	Pattern wheel and pattern drum and design area calculations.	02
	Electronic needle selection	01
	Computer controlled knitting machines.	01
	Hand operated flat V-Bed knitting machine and its cam system.	02
3	**Unit 3**	15
	Study of knitting elements in tricot and raschel knitting machine and loop formation process.	03
	Pattern mechanism of warp knitted fabrics	02
	Development of designs of different warp knitted fabrics	03
	Properties of different warp knitted fabrics	02
	Uses of warp knitted fabrics	02
	Study of let off and take up mechanism	03
4	Unit 4	12
	Concept of loop length and their effect on fabric structure & properties	03
	0	02
	Control of loop length and positive feed devices.	03
	Basic study of knitting tensioning devices and stop motions	01
	Production calculations of knitting machines and fabric weight in g/m2	01
	Calculations of wales and courses per inch from K-factors.	01
	Tightness factor and related calculations	01
	Total	45

Subject Incharge

MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY, BATHINDA			
GIANI ZAIL SINGH CAMPUS COLLEGE OF ENGINEERING AND TECHNOLGY			
DEPARTMENT OF TEXTILE ENGINEERING			
Academic Year	**2022-23**	**Session**	**Jan-June 2023**
Program	**B.TECH (TEXT ENGG)**	**Semester**	**6th Sem**
Course Code	**BTEX1-408**	**Course Title**	**TF II**
Course Coordinator	**Deepika**		

Lecture Plan

S No	Unit and Topic	Lacture Plan (Hour)
1	**Unit 1**	05
	Introduction to man-made fibres	01
	Idea about fine structure of man-made fibres	02
	Detailed study of crystallinity,	01
	orientation and its effects on fibreproperties.	01
2	**Unit 2**	15
	Melt Spinning with special reference to Polyester & Nylon	03
	Melting of polymerchips	01
	extrusion, spinning	01
	drawing, heat setting	01
	cuttingof melt spunfilaments/fibre.	01
	Wet and dry spinning with special reference to acrylic	01
	Relative merits& demerits of the wet & dry spinning systems.	02
	Preparation of polymer solution	02
	extrusion,spinning,filamentformation drawing,heat setting,	02
	cuttingofwet &dryspunfilaments/fibre.	01
3	**Unit 3**	10
	Introduction about heat setting	02
	Important parameters of heat setting & their effectonfibreproperties	02
	Introductionaboutdrawing	03
	Drawingcondition,phenomenonofnecking	01
	Machines for stretching continuous, filamentyarns, Drawing, heat setting, crimping ofstaplefibres.	02
4	Unit 4	10
	Detail study of the production, physical,chemical structures & Properties of polyester	03
	nylon 6 & 66 Polypropylene, acrylic	02
	elementaryideaabout high speed spinning.	02
	introduction to high performance fibres	02
	Elementary idea aboutaramid,carbon&glass fibres	01
	Total	45

Subject Incharge

GianiZail Singh Campus College of Engineering &Technology, MRSPTU, Bathinda

Department of Textile Engineering

Lecture Plan and Lecture delivery (Tentative)

Sub: Textile Testing –II (TH) **Code: BTEXS1-604**

B.Tech 6th Semester **Batch 2020**

Total number of weeks: 15

Subject incharge: Dr. Anupam Kumar

Sr. No	Week	Topic	No of Lectures to be delivered	Cumulative Lectures
1	1st	Introduction about POs, COs, Objective of Testing, Sample, Population	3	3
2	2	Innovations in yarn testing instruments (dynamic, continuous, and on-line testing of yarn quality) cont...	3	6
3	3	Innovations in yarn testing instruments (dynamic, continuous, and on-line testing of yarn quality)	3	9
4	4	Measurement of fabric dimensions and other physical properties such as thickness, weight, crimp, shrinkage, air-permeability,	3	12
5	5	thermal properties, wetability, water proofness, and flame resistance, Fabric low stress mechanical properties such as smoothness, stiffness, softness and shear,	3	15
6	6	Drape behaviour, Test related to fabric appearance such as pilling, crease recovery.	3	18
7	7	Fabrics handle and factors influencing it, fabric comfort.	3	21
8	8	Serviceability testing	3	24

		parameters such as abrasion resistance, fabric strength.		
9	9	Tear strength, bursting strength test, honey dew, stickiness measurement, assessment of barre and other form of fabric defects.	3	27
10	10	Tests related to garment appearance and performance such as measurement of seam pucker, seams slippage and seam strength etc. Cont..	3	30
11	11	Tests related to garment appearance and performance such as measurement of seam pucker, seams slippage and seam strength etc.	3	33
12	12	Concept of reproducibility and repeatability, methods pertaining to fibre, yarn and fabric testing	3	36
13	13	concept of quality, quality assurance, textile product levelling	3	39
14	14	international quality parameters and standards like Uster standards and ASTM	3	42
15	15	Revision	3	45

Course Coordinator

MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY, BATHINDA			
GIANI ZAIL SINGH CAMPUS COLLEGE OF ENGINEERING AND TECHNOLGY			
DEPARTMENT OF TEXTILE ENGINEERING			
Academic Year	**2022-23**	**Session**	**Jan-June 2023**
Program	**B.TECH (TEXT ENGG)**	**Semester**	**6th Sem**
Course Code	**BTEX1-602**	**Course Title**	**PCT**
Course Coordinator	**Gurvir singh**		

Lecture Plan

S No	Unit and Topic	Lacture Plan (Hour)
1	**Unit 1**	04
	Control of Mixing quality and cost	01
	Control of Mixing quality and cost;;	02
	Formulation of LPP	02
	Concept and method of bale management	01
2	**Unit 2**	26
	System of process control in spinning: Role and scope, keye	02
	establishing norms and standards	02
	collection and interpretation of data and corrective action	01
	variables Records and estimation of yarn realisation and waste in spinning mill	02
	norms for yarn realisation	02
	Waste and cleaning in blow room and carding:	02
	Calculation of trash content and cleaning efficiency.	02
	Norms for waste and cleaning efficiency	02
	Assessing the performance of blow rom and card. Comber waste control	03
	Technological conditions, Optimization of comber waste extraction, norms and procedures for control of comber waste	03
	Control of yarn quality: Measurement, assessment and control of count, strength, unevenness and imperfections of yarn	05
3	**Unit 3**	20
	Factors affecting quality and productivity in winding; Approach to process control in Winding	02
	. Classification of yarn faults by UsterCassimat System. Removal of yarn faults by clearing devices	02
	– mechanical slub catchers and electronic clearers..	02
	Control of quality in Winding – brief idea about quality of knots.	02
	Different package defects – their nature, causes and remedies	02

Gurvir Singh

MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY, BATHINDA			
GIANI ZAIL SINGH CAMPUS COLLEGE OF ENGINEERING AND TECHNOLGY			
DEPARTMENT OF TEXTILE ENGINEERING			
Academic Year	**2022-23**	**Session**	**Jan-June 2023**
Program	**B.TECH (TEXT ENGG)**	**Semester**	**6th Sem**
Course Code	**BTEXS1-605**	**Course Title**	**Quality Management in Textile Industry**
Course Coordinator	**Dr. Rajeev Kumar Varshney**		

Lecture Plan

S No	Unit and Topic	Lacture Plan (Hour)
1	**Unit 1**	15
	Introduction (Unit 1)	03
	Deming's fourteen points	02
	Ishikawa"s seven tools of quality	02
	concept of Total Quality Management	01
	ISO 9000 Standards	03
	Quality Function Deployment (QFD)	02
	Quality Costs	02
2	**Unit 2**	15
	SQC- Basic Definitions frequency distributions	01
	measures of central tendency	01
	measures of dispersion	01
	Normal distribution	02
	sampling distribution of mean	01
	statistical estimation theory	01
	t distribution, confidence limit	02
	tests of hypotheses and significances	02
	Chisquare test	02
	F distribution	01
	choice of sample size.	01
3	**Unit 3**	15
	Application of binomial	04
	Poisson"s distribution	04
	application of χ 2 distribution & Contingency Tables	03
	test for a single proportion	02
	Subjective Tests:	02
4	Unit 4	15
	Acceptance Sampling	04
	Control Charts	05
	ANOVA and Regression	05
	Karl Pearson correlation	01
	Total	60

Rajeev Rajeev

Subject Incharge

MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY, BATHINDA			
GIANI ZAIL SINGH CAMPUS COLLEGE OF ENGINEERING AND TECHNOLGY			
DEPARTMENT OF TEXTILE ENGINEERING			
Academic Year	**2022-23**	**Session**	**Jan-June 2023**
Program	**B. Tech (Textile Engg)**	**Semester**	**6th**
Course Code	**BTEXS1-601**	**Course Title**	**Theory of Textile Structure**
Course Coordinator	**Reeti Pal Singh**		

Lecture Plan

S No	Unit and Topic	Lecture Plan (Hour)
1	**Unit I**	**10**
	Basic geometry of twisted yarns	01
	The idealized helical yarn structure	01
	Deviation from Real Yarn	01
	Limit of Twist	01
	Twist contraction and retraction	02
	Packing of fibres in yarn	02
	Different Forms of Yarn Twisting	02
2	**Unit II**	**15**
	Ideal migration	01
	Parameters affecting migration	02
	Characterization of migration behavior	03
	Mechanism of migration in single and plied structure	02
	Criteria for interchange of fibre position	02
	Conditions for migration to occur	02
	Geometrical explanation of fibre migration	01
	Combination of the mechanics of migration	02
3	**Unit III**	**15**
	Extension of yarn under small load	01
	Analysis of tensile forces of yarn under stress	02
	Prediction of breakage, Nature of rupture for continuous filament yarn	03
	Mode of propagation of break	01
	Extension and breakage of spun yarn: Traditional view and approach by Hearle and E1-Sheikh	03
	Blended yarn structure	01
	Humburgers Theory	02
	Structure property relationship of ring, rotor, air-jet, friction spun yarn	03
4	**Unit IV**	**20**
	Engineering approach to the analysis of fabric	01
	Pierce geometrical model relationship between h, p, c	02
	Crimp interchange	01
	Jammed Structure	02
	Concept of similar cloth and fabric	02
	Minimum possible cover factor and Race track geometry	02
	Geometry of plain knitted fabric	02
	Elementary idea about tensile, bending, shear & drape behavior of fabric	06
	An elementary idea about fabric objective measurement	02
	Total	**60**

Subject Incharge