



MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY BATHINDA-151001 (PUNJAB), INDIA

(A State University Estb. by Govt. of Punjab vide Punjab Act No. 5 of 2015 and Approved u/s 2(f) & 12 (B) of UGC; Member AIU)

Department: TEXTILE ENGINEERING
Giani Zail Singh Campus College of Engineering & Technology, MRSPTU

Program: B. Tech Textile Engineering

COs, POs, PSOs Mapping

Subject: Fundamentals of Textile Machines and Processes	Subject Code: BTEXS1-301	Semester: 3rd
Credit: 3	L T P 3 0 0	Duration: 45

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Identify the various application areas of textile materials	3	2			2							1			
CO2	Demonstrate the process flow of fibres up to the finished product.	2	3	1									1			
CO3	Elaborate the functioning of various textile machineries and their working process.		2												1	
CO4	Apply knowledge of processes such as desizing, scouring, bleaching, dyeing, printing & finishing.	3	1		1		1	2	2				1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto 70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Fiber – I	Subject Code: BTEXS1-302	Semester: 3rd
Credit: 3	L T P 3 0 0	Duration: 45 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand the basics of textile fibres and their classifications.	3	2								1		2	1		
CO2	Demonstrate Properties of Fibres and Polymers and correlate the structure and properties of fibers and polymers.	3	2		2						2		2	1	2	
CO3	Explain the production properties and uses of major natural fibers.	3	2								2		2	1		
CO4	Demonstrate basics of manmade fibres and production systems for manmade regenerated fibres fibers.	3	2								2		2	1		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Fabric Manufacturing- I	Subject Code: BTEXS1-303	Semester: 3rd
Credit: 4	L T P 3 1 0	Duration: 60 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	specify the objectives of winding process and functions of various components of winding machine. Also do the necessary calculations on the machine.	3	2								2		1	3		
CO2	Explain working of Warping and sizing processes and find out the production and Efficiency of these machines.	3	2								2		1	3		
CO3	Describe working of different parts of Pirn winding and make all necessary calculations..	3	2								2		1	3		
CO4	Discuss all looming operations especially Primary, Secondary and Auxiliary motions..	3	2								2		1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Yarn manufacturing -I	Subject Code: BTEXS1-304	Semester: 3rd
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand the short and long staple spinning, objectives, construction and working of ginning, blowroom, carding and draw frame machines.	3	2	1					1	2	1		2	2		
CO2	Study the technical features, various processes and parts of the machines.	3		1				1		2	1		2	2		
CO3	Calculate speeds of the various machine moving parts, cleaning efficiency draft and production of the machines.	3	3		1		1	1	2	2	1		2	2	2	
CO4	Demonstrate the modern developments in various spinning preparatory machines.	3					2		2	2	2		2	1		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Kinematics of Machines	Subject Code: BTEXS1-305	Semester: 3rd
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Application of various motions and linkage mechanism in textile machines.	2	1										1	2		
CO2	Elaborate the significance of gears in textile operation.		2		2								1		1	
CO3	Determine the function of brakes in machine process.					2	1									
CO4	Identify the significance of different belts, ropes and chains specific to textile operation.						1	1					1		1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Fibers Lab. –I	Subject Code: BTEXS1-306	Semester: 3rd
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Identify various textile fibres by physical and chemical identification methods.	3	3		2		1			1	2		2	2	2	
CO2	Analyse percentage fibre content in different blended fabrics.	3	3		2		1			1	2		2	2	2	
CO3	Estimate the fibre/ filament fineness with the help of projection microscope.	3	3		2					1	2		2	2	2	
CO4	Determine moisture regain, moisture content and maturity percentage in cotton fibres.	3	3		2		1			1	2		2	2	2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Fabric Manufacturing- I Lab	Subject Code: BTEXS1-307	Semester: 3rd
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Demonstrate the informed working on the winding machine with all possible controlling of its operations .	3								2	1	3	1	3		
CO2	Run pirn winding machine having understanding of various machine parts working .	3								2	1	3	1	3		
CO3	Display skill in working on warping and sizing machines with satisfactory knowledge of various controlling parameters.	3								2	1	3	1	3		
CO4	Have working knowhow of all primary motions of a loom	3								2	1	3	1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Yarn manufacturing Lab-I	Subject Code: BTEXS1-308	Semester: 3rd
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Study the construction and working of various opener & cleaners used in blow room process.	3								2	2	1	2	2		
CO2	Determine the trash content with the help of Shirley Trash analyser.	3	3		1			1		2	2	1	2	3	2	
CO3	Explain the technical detail of carding machines, gearing mechanism, calculations, settings, maintenance and nep count.	3	3		1					2	2	1	2	3	2	
CO4	Demonstrate the drafting mechanism, top roller weighting, draft calculations, effect of roller setting, maintenance and overhauling of draw frame machine	3	3		1					2	2	1	2	3	2	

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COs, POs, PSOs Mapping

Subject: Textile Fiber –II	Subject Code: BTEXS1-401	Semester: 4th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Knowledge about, Idea about fine structure of man-made fibres. Crystallinity, orientation and its effects on fibre properties	3	2							1	2		2	2	2	
CO2	Demonstrate the various manmade fibres spinning methods such as melt spinning, dry spinning and wet spinning	3	2							1	2		2	2	1	
CO3	demonstrate fibre post spinning processes such as heat setting , drawing & stretching process.	3	2							1	2		2	2	1	
CO4	In depth understanding about production, properties and end uses of major synthetic fibres and elementary idea about high performance fibres.	3	2				1			1	2		2	2	1	

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COs, POs, PSOs Mapping

Subject: Yarn manufacturing -II	Subject Code: BTEXS1-402	Semester: 4th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Demonstrate the importance, technical features, processes and machines used in short staple conventional and non-conventional spinning processes.	3	2	1			1	1	1	2	2		2	2		
CO2	Understand the constructional details, working and design aspects of machine parts and mechanisms involved in comber, speed frame, ring frame and nonconventional spinning processes.	3	2	2			1			2	2		2	2		
CO3	Assessment of various technical parameters related to comber, speed frame, ring frame and nonconventional spinning processes.	3	3		3		2	1	2	2	2		2	2	2	
CO4	Demonstrate the norms and modern developments in comber, speed frame, ring frame etc.	3	2				1		2	2	2		3	1		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Fabric Manufacturing - II	Subject Code: BTEXS1-403	Semester: 4th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Describe basic motions of looms i.e. Shedding & Picking and their types.	3	2								2		1	3		
CO2	Explain mechanism of Beat up motion of loom and associated componenets.	3	2								2		1	3		
CO3	Describe associated technology of Let-off and Take-up mechanisms of a loom.	3	2								2		1	3		
CO4	Explain the mechanisms of Stop motions and Warp protector fitted on a loom.	3	2								2		1	3		

Enter Correction levels 1, 2 or 3 as defined below:

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COs, POs, PSOs Mapping

Subject: Textile Chemical Processing –I	Subject Code: BTEXS1-404	Semester: 4th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Apply basic knowledge of chemical nature of fibres and processing chemicals to explain the processes of Singeing, desizing and scouring	3	1	1			2	2			1		1	3		
CO2	Appreciate the technology of different bleaching and mercerization processes and assess the importance of various parameters affecting their efficiencies.	3	1	1			2	2			1		1	3		
CO3	Recognize the importance of different process variables in influencing the performance of Heat setting and other mechanical finishing operations while developing through knowledge about their mechanisms.	3	1	1			2	2			1		1	3		
CO4	Identify the role of chemicals used in functional finishes recipe which imparts the desired functionality to the fabrics and evaluate their influencing parameters	3	1	1			2	2			1		1	3		

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COs, POs, PSOs Mapping

Subject: Fabric Structure Analysis	Subject Code: BTEXS1-405	Semester: 4th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	To apply knowledge for raw material requirement for a particular fabric design and its specifications	3	3												1	
CO2	To analyse various weaves for their structure		3	3	1		2						1	2		
CO3	To learn different weaves	2	3	3					1					1		
CO4	To analyse the yarn and fabric parameters of various weaves design pattern		1	3									1		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Yarn Manufacturing Lab.-II	Subject Code: BTEXS1-406	Semester: 4th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Demonstrate the mechanism of a comber, effect of various organs functioning and estimation of noil percentage.	3	3					2		2	1	1	2	2	2	
CO2	Explain the construction and working of a speed frame along with gearing, calculations and bobbin building mechanism.	3	3		1					2	1	1	2	2	2	
CO3	Study the ring frame in terms of construction, working, gearing calculations.	3	3		1					2	1	1	2	2	2	
CO4	Demonstrate the construction and working of new spinning methods: rotor spinning, friction spinning and air-jet spinning.	3	1		1					2	1	1	2	2	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Fabric Manufacturing- II Lab	Subject Code: BTEXS1-407	Semester: 4th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Demonstrate the mechanism of loom shedding & picking and working of associated parts.	3								2	1	3	1	3		
CO2	Demonstrate the Beat-up mechanism along with working knowledge of sley eccentricity.	3								2	1	3	1	3		
CO3	Experiment with Take-up and Let-off mechanisms of a loom.	3								2	1	3	1	3		
CO4	Have working skill of weft fork, warp protector and warp stop motions.	3								2	1	3	1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Chemical Processing Lab.–I	Subject Code: BTEXS1-408	Semester: 4th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Get Skill of doing scouring of different fibres	3	2		2		2	2			3	1	1	3		
CO2	Have Skill of doing scouring of blends of different fibres	3	2		2		2	2			3	1	1	3		
CO3	obtain Skill of doing bleaching of different fibres and their blends	3	2		2		2	2			3	1	1	3		
CO4	Acquire Skill of doing finishing of cotton fibres	3	2		2		2	2			3	1	1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Fabric Structure Analysis Lab	Subject Code: BTEXS1-409	Semester: 4th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Determine different types of fabric samples to understand characteristics	2	2	2									1			
CO2	Predict different types of simple weaves and their derivatives.				2									2		
CO3	Demonstrate different types of compound weaves and their derivatives.		3	3	1								1		2	
CO4	Analyse weave and colour effect		3										1		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Properties of Fiber	Subject Code: BTEXS1-501	Semester: 5th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Analyse fibre structure data and moisture dependent fibre characteristics	3	2							1	2		2	2	2	
CO2	Demonstrate the response of fibre towards tensile loading under different practical situation	3	2							1	2		2	2	1	
CO3	Model viscoelastic behaviour and interpret rigidity and dynamic loading fibre character	3	2							1	2		2	2	1	
CO4	Apply knowledge of optical, frictional, static and thermal properties in solving real life problems	3	2				2			1	2		2	2	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Fabric Manufacturing- III	Subject Code: BTEXS1-502	Semester: 5th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Discuss features, construction, working of different dobbies arrangement.	3	2								2		1	3		
CO2	Explain Construction & working of different Jacquards and Design development with card punching	3	2								2		1	3		
CO3	Describe working of mechanisms fitted on automatic looms like automatic package changing, multiple box motions etc.	3	2								2		1	3		
CO4	Describe design features, construction, working of different mechanisms of automatic shuttle looms	3	2								2		1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Non-Woven Technology	Subject Code: BTEXS1-503	Semester: 5th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Classify the Nonwovens and Prepare technical data sheet of each sector of Nonwovens and Compile the fibres used, technology applied in manufacturing of Nonwovens.	3	2								2		1	3		
CO2	Describe the processes involved in web formation technologies in Nonwovens.	3	2								2		1	3		
CO3	Appreciate the technical features of various mechanical and thermal bonding techniques used in Nonwovens.	3	2								2		1	3		
CO4	Comprehend the effect of various chemical bonding agents and finishing processes designed for Non-woven fabrics.	3	2								2		1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Testing-I	Subject Code: BTEXS1-504	Semester: 5th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Apply knowledge of sampling techniques and its significance.	3	1										1	3		
CO2	Demonstrate the technical significance of fibre and yarn properties.	2											1	2	3	
CO3	Analyse and interpret results of fibre and yarn properties.	3	3	3	2	2							1			
CO4	Analyse moisture and its importance in textile materials.		3	3	2	2							1		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Chemical Processing –II	Subject Code: BTEXS1-505	Semester: 5th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Explain the concept of colour and various colour theories and apply it in assessing the colour value of any dyed material.	3	1	1			2	2			1		1	3		
CO2	Apply the understanding of theories of dyeing to analyze the dye-fibre interactions occurring in different fibres.	3	1	1			2	2			1		1	3		
CO3	Implement the information of dyeing behavior of individual fibres in blend dyeing and its problems and in understanding the working of dyeing machines and dye identification procedures.	3	1	1			2	2			1		1	3		
CO4	Acquire Know-how of printing technology and appreciate the mechanism of different printing methods and printing after-treatments.	3	1	1			2	2			1		1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Testing Lab.-I	Subject Code: BTEXS1-506	Semester: 5th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Evaluate properties of fibres e.g. length, strength, Micronaire, maturity etc.	3	2		3								1	2	2	
CO2	Investigate properties of yarn e.g. strength, mass irregularity, hairiness.				3	2							1	3		
CO3	Analyse yarn appearance by visual examination.	2	2										1			
CO4	Apply statistical technique in the test result.	2	2		2	3							1		3	

Enter Correction levels 1, 2 or 3 as defined below:

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COs, POs, PSOs Mapping

Subject: Textile Chemical Processing Lab.–II	Subject Code: BTEXS1-507	Semester: 5th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Acquire Skill of dyeing of cotton material with various classes of dyes	3	2		2		2	2			3	1	1	3		
CO2	Get Skill of dyeing of proteinicfibres with various classes of dyes	3	2		2		2	2			3	1	1	3		
CO3	Have Skill of dyeing of synthetic fibresfibres with different classes of dyes	3	2		2		2	2			3	1	1	3		
CO4	Gain Skill of printing cotton material with block printing method under different styles	3	2		2		2	2			3	1	1	3		

Enter Correction levels 1, 2 or 3 as defined below:

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COs, POs, PSOs Mapping

Subject: Fabric Manufacturing- III Lab	Subject Code: BTEXS1-508	Semester: 5th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Demonstrate the working of let-off and take up mechanisms of shuttleless weaving machines.	3								2	1	3	1	3		
CO2	Demonstrate the working knowledge of Weft insertion mechanisms of Air jet and Rapier weaving machines.	3								2	1	3	1	3		
CO3	Experiment with Selvage formation, temple and pirn changing mechanisms of shuttleless weaving machines.	3								2	1	3	1	3		
CO4	Have working skill of weft fork, multiple box mechanisms and identify the fabric faults	3								2	1	3	1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Theory of Textile Structure	Subject Code: BTEXS1-601	Semester: 6th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Apply knowledge of yarn structures in relation to predict properties.	3	2		2		1						1	1		
CO2	Able to explain the effect of yarn structure on mechanical properties.	3	2	1	2								1	1	2	
CO3	Apply different models to explain yarn structure.			3		1	1						1			
CO4	To establish relationship between fabric structural parameters vis-a vis properties.		1	1	2								1	3	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Process Control in Textiles	Subject Code: BTEXS1-602	Semester: 6th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Apply the role of process parameters on product quality.	3														
CO2	Analyse the process of choosing process parameters at preparatory and ring spinning stages.		3		2									2		
CO3	Apply process management in weaving preparatory to optimize quality.			1		3									3	
CO4	Apply process management in weaving with respect to fabric production, inspection, and machine audit.		3			2				2			1			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Knitting Technology	Subject Code: BTEXS1-603	Semester: 6th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Appreciate the potentiality of knitting vis-a-vis weaving technology	3	2								2		1	3		
CO2	Demonstrate various weft knitted structures, and working of different parts of their machines	3	2								2		1	3		
CO3	Have an idea about the designing potential of different warp knitting machines	3	2								2		1	3		
CO4	Design knitted fabrics based on its basic structural elements and necessary mathematical calculations	3	2								2		1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Testing-II	Subject Code: BTEXS1-604	Semester: 6th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Learn the significance of yarn and fabric properties	3	1										1	3		
CO2	Able to explain factors affecting fabric and garment properties	2											1	2	3	
CO3	Analyse fibre, yarn properties and interpret the results by applying statistical techniques	3	3	3	2	2							1			
CO4	Apply statistical techniques to interpret fabric properties		3	3	2	2							1		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Quality Management in Textile Industry	Subject Code: BTEXS1-605	Semester: 6th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Orient the thinking and demonstrate understanding in line with TQM concepts	2	2			3							1		1	
CO2	Apply procedures of statistics related to frequency distribution and hypothesis testing	3	3	2	2	2								2		
CO3	Analyze problems related with discrete functions and ranking data		3	2	2	2										
CO4	Develop and analyze control charts and ANOVA & Regression techniques for decision making		2		2	2							2	1	2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Knitting Technology Lab	Subject Code: BTEXS1-606	Semester: 6th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Study of design and working of different parts of circular knitting machines namely plain, rib and interlock	3								2	1	3	1	3		
CO2	Study of working of flat bed knitting machines	3								2	1	3	1	3		
CO3	Study on effect of construction parameters on properties of knitted fabrics	3								2	1	3	1	3		
CO4	Analyse knitted fabric constructions and designs	3								2	1	3	1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Textile Testing Lab.-II	Subject Code: BTEXS1-607	Semester: 6th
Credit: 1	L T P 0 0 2	Duration: <u>20 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Predict the behavior of yarn by fault analysis.	3	2		3								1	2	2	
CO2	Analyze the various mechanical properties of fabrics e.g. Tensile, Bursting, Tearing and Abrasion.				3	2							1	3		
CO3	Demonstrate the serviceability characteristics of fabrics.	2	2										1			
CO4	Predict the handle properties of fabrics.	2	2		2	3							1		3	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Non Conventional Yarn Manufacture	Subject Code: BTEXS1-701	Semester: 7th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand the basics of non-conventional spinning systems.	2	2				2			2	2	2	3	2	1	
CO2	Explain the working principle of various non-conventional, various operations and raw material requirements.	3	2	2			1		2	2	2	2	3	2	1	
CO3	Describe structure and properties of non-conventional spun yarn with respect to ring spun yarn.	3	2	2			2		2	2	2	2	3	2	2	
CO4	Understand the areas of end use of non-conventional spun yarns.	2	2	2			2		2	2	3	2	2	2	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Garment Manufacturing Technology	Subject Code: BTEXS1-702	Semester: 7 th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Comprehend the overall structure and status of garment manufacturing industry.	3	2								2		1	3		
CO2	Understand relevant aspects of garment manufacturing process.	3	2								2		1	3		
CO3	Understand the important areas of fabric properties related to garment production.	3	2								2		1	3		
CO4	Know the concepts of fabric and garment comfort.	3	2								2		1	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Apparel Merchandising and Management	Subject Code: BTEXS1-703	Semester: 7 th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	The scope, nature, importance and functions of merchandising.										2	3	1	3		
CO2	Exercising planning and control tools, executing planning action plan and preparation of PPM file.										2	3	1		3	
CO3	Costing and pricing formula and strategies, fabric consumption calculation and development of costing sheet.										2	3	1		3	
CO4	Selection and management of vendor for sourcing and various import/ export documentation										2	3	1		3	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Advances in Fabric Structure	Subject Code: BTEXDI-711	Semester: 7th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Interpret and make weaving plans of backed, Gauze & Leno fabrics along with understanding of their manufacturing and properties	3	3												1	
CO2	Make Weave Plan and design of double, Extra warp and Extra weft figuring fabrics.		3	3	1		2						1	2		
CO3	Design & Explain warp and weft pile, velveteen and tapestry fabrics, their manufacturing scheme and properties.	2	3	3					1					1		
CO4	Explain design, manufacture and uses of damask, brocades and spool and gripper axminster carpets		1	3									1		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Texturing Technology	Subject Code: BTEXDI-712	Semester: 7th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Know the basics of texturizing.	3	2							1	2		2	2	2	
CO2	Illustrate scientific principles and manufacturing methods of textured yarns.	3	2							1	2		2	2	1	
CO3	Analyze structure and properties of textured yarns.	3	2				1			1	2		2	2	1	
CO4	Evaluate scientifically the properties of textured yarns	3	2				2			1	2		2	2	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Post Spinning Operation	Subject Code: BTEXDI-713	Semester: 7th
Credit: 4	L T P 3 1 0	Duration: 60 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand about importance and objectives of post spinning operations.	2	2							1	2		1	1		
CO2	Detailed understanding about drawing & stretching and draw warping of manmade fibres.	3	2							1	2		1	1	2	
CO3	Explain various heat setting operations, mechanism, parameters and heat setting conditions of various manmade fibres.	3	2							1	2		1	1	2	
CO4	Demonstrate the texturing process in detail such as importance, methods and factors affecting in texturing process.	3	2							1	2		1	1	2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Process Control in Textile Chemical Processing	Subject Code: BTEXDI-721	Semester: 7th
Credit: 3	L T P 3 0 0	Duration: 45 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Identify Different process parameters involved and optimisation of these parameter in pre-treatment of textile fabrics.		3	2			2	2			2		2		3	
CO2	Work out with Optimised parameters for dyeing, printing of different styles and finishing of different fibres.		3	2			2	2			2		2		3	
CO3	Analyse the effects on quality due to impure chemicals, faulty fabrics and machine handling along with methods of assessing processed products			3			1	1			2	1	3	3		
CO4	Appreciate Standardisation of instrument/ machineries besides analysis of colour for checking impurity percentage.			3			1	1			2	1	3		1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Marketing & Financial Management in Textiles	Subject Code: BTEXDI-722	Semester: 7th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	The concept, system and process of selling, marketing and market research.				1						2	3	1	1		
CO2	The concept and process of consumer and buying behaviour and role of advertising and sales promotion in textile.				1						2	3	1	1		
CO3	Ideas, objectives and functions of financial management.				1						2	3	1	1		
CO4	Various concepts of financial management like working capital, structure of capital and budgeting.				1						2	3	1	1		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Entrepreneurship development and management in Textile	Subject Code: BTEXD1-723	Semester: 7th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Needs, process, benefits and support systems available for entrepreneurship development,				1						2	3	1	1		
CO2	Preparation of project report for establishment of a small enterprise,				1						2	3	1	1		
CO3	Basics of marketing and production management,				1						2	3	1	1		
CO4	Preliminary ideas about human resource and financial management.				1						2	3	1	1		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Mechanics of Textile Process	Subject Code: BTEXS1-801	Semester: 8th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Analysis of opening, cleaning operation and blowroom performance.	2	3										1	2	1	
CO2	To identify various carding functions along with study of hook formation and degree of disorder.		3			1							1			
CO3	To analyse roller drafting, various functions of roving frame and ring frame.		3			1	1									
CO4	Analysis of mathematical modelling of shedding, picking, checking and beat- up mechanisms.						1								3	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Mill Planning & Management	Subject Code: BTEXS1-802	Semester: 8th
Credit: 3	L T P 3 0 0	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand basics of mill planning and management, forms and structure of business organizations.		2				1	1	1	3	2	3	2	2	1	
CO2	To decide and explain the mill location, factory layout and various aspects of factory buildings.		2	2			2	1	1	2	2	3	2	2	1	
CO3	Understand, analyse the problems and implement the solution related to material handling, air conditioning and lighting.		2	2			2	2	2	2	2	3	2	2	1	
CO4	Know the importance of working environment and pollution control and process of product cost calculation.		2	2			3	3	2	2	2	3	2	2	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Technical Textiles	Subject Code: BTEXD1-811	Semester: 8th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Analyse technical textiles, its importance and uses.	2	2				1						1		1	
CO2	Explain the twelve sectors of technical textiles and suitable products.							2					1	2		
CO3	Demonstrate various applications of technical textiles in the field like filtration, medical and protective.	2		3			2	2					1		3	
CO4	Illustrate the fabric properties and requirements for military applications, geotextiles			1			1	3		3			1	2	3	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject: Advancement in Manmade Fibers	Subject Code: BTEXD1-812	Semester: 8th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand development of fibre structure man-made fibre during man-made fibre spinning.	2	2							1	2		2	2	1	
CO2	Explain the high-speed melt spinning, melt spinning of hollow, multicomponent, ultrafine and nano fibres.	3	2							1	2		2	2	1	
CO3	Apply spin finish on manmade fibres and textured yarns.	3	2							1	2		2	2	1	
CO4	Describe the technology of drawing and heat setting of synthetic fibres and produce melt spun yarn.	3	2							1	2		2	2	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject : High Performance & Specialty Fibers	Subject Code: : BTEXD1-813	Semester: 8th
Credit: 4	L T P 3 1 0	Duration: <u>60 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand the basics of polymerization, spinning of aromatic polyamides, high molecular weight polyester, rigid rod and ladder polymers.	3	2							1	2		2	2	1	
CO2	Describe the production process of high-performance fibres and specialty fibres.	3	2							1	2		2	2	1	
CO3	Explain structure and properties of high-performance fibres and specialty fibres.	3	2							1	2		2	2	1	
CO4	Know the applications areas of high-performance fibres and specialty fibres	3	2							1	2		2	2	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

COs, POs, PSOs Mapping

Subject : Project	Subject Code: :	Semester: 8th
Credit: 3	L T P 0 0 6	Duration: <u>45 Hrs.</u>

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1			3		2	1			2	3		3	3			
CO2			3		2	1			2	3		3	3			
CO3			3		2	1			2	3		3	3			
CO4					2	1			2	3	3	3	3			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%