

Lesson Plan

Name of Faculty: Ajay Bishnoi (Theory), Ajay Bishnoi (Pract.-G1), GF4 (Pract.-G2)

Discipline: Textile Technology

Semester: 4th

Subject: SPINNING TECHNOLOGY-II

Lesson Plan Duration: 15 weeks

Work Load (Lecture / Practical) per week (in hours): Th= 4 , Prac. = 4

Week	Theory		Practical	
	Lecture day	Topic (including assignment / test)	Practical day	Topic
1 st	1 st	Objects of drawing, passage of material through Draw Frame and functions of different parts	1 st	Demonstrate the passage of material through Draw Frame
	2 nd	Weighting systems for top rollers on modern draw frame		
	3 rd	Factors affecting the roller settings in Draw Frame	2 nd	Roller setting of drafting rollers on draw frame
	4 th	Importance and study of various stop motion on modern draw frame		
2 nd	5 th	Object, Principle and working of autoleveller at draw frame, type of auto leveller.	3 rd	To study the various stop motion
	6 th	Work load distribution in draw frame depts.		
	7 th	Calculations of Speeds, Drafts, Total Drafts, Draft Constant, Tension Draft, Production and Production Constant	4 th	Study of various electronic parts and motion of draw frame
	8 th	Importance and uses of cotton combing sequence of machinery used for the manufacture of combed yarn (conventional and modern)		
3 rd	9 th	Preparatory machines for combing and their role	5 th	Practice gearing diagram on draw frame machine.
	10 th	Silver Lap Machine (SLM) - its objectives, nomenclature of various parts of SLM,		
	11 th	Functions of various parts of SLM	6 th	Calculations of speeds of various parts, total drafts, draft constant, tension draft, production and production constant
	12 th	Passage of material through the SLM machine		
4 th	13 th	Ribbon Lap Machine (RLM) -its objects, nomenclature	7 th	Sketch and describe the working of SLM
	14 th	Functions of various parts, passage through the RLM		

	15 th	Drawing, Lap Formation Combination Lap Winder, Within Super Lap Machine and its advantages over Silver Lap Machine	8 th	Practice of gearing diagram of silver Lap Machine (during mill visits/ industrial training)
	16 th	Drawing, Lap Formation Combination Lap Winder, Within Super Lap Machine and its advantages over Silver Lap Machine		
5 th	17 th	Expert lecture 1	9 th	Demonstration of Ribbon Lap machine, passage through the machine, Practice of gearing diagram of Ribbon Lap machine
	18 th	Principles , objectives, evaluation of combing Historical development of combing, degree of combing damages occurring to textile materials during the preparatory processes		
	19 th	Historical development of combing, degree of combing damages occurring to textile materials during the preparatory processes	10 th	Demonstration on comber machine, working of various parts and passage through the comber machine
	20 th	Description and working of various parts, passage of material through modern comber		
6 th	21 th	Sessional 1	11 th	Demonstration and practice of combing cycle with reference to relative position of various parts and index numbers
	22 th	Combing cycle with reference to relative position of various parts,		
	23 rd	Combing cycle with reference to index numbers	12 th	Demonstration of comber cylinder, top comb, nippers
	24 th	Combing cycle with reference to index numbers		
7 th	25 th	Study of comber cylinder	13 th	Practice of drawing of gearing diagram of comber: Calculate draft, draft constant, production and production constant
	26 th	Top comb, detaching rollers, nippers		
	27 th	Motions and mechanisms of nippers	14 th	Demonstration of mechanisms of nippers, top comb, detaching roller to see their working with the help of a sketch
	28 th	Top comb mechanism		
8 th	29 th	Detaching roller mechanism	15 th	Practice of setting and gauges of following parts. - Cylinder to brush - Cylinder to nippers - nippers settings - Top comb settings
	30 th	Method of finding comber noil percentage		
	31 th	Factors upon which comber noil depends	16 th	Study of various electronic parts and motion in RIL, SIL, comber
	32 th	How to control comber noil percentage		
9 th	33 rd	Sessional 2	17 th	Modern development to be

	34 th	Difference between carded and combed yarn		seen in the mills during mill visits/mill training
	35 th	Comparison between carded and combed yarn	18 th	Demonstration and practice for the passage through the simplex machine
	36 th	Modern developments in combing (Expert Lecture)		
10 th	37 th	Expert Lecture 2	19 th	Practice of setting drafting rollers
	38 th	Introduction and object of Simplex Frame. Nomenclature of various parts, passage of material through the machine		
	39 th	Drafting mechanism, setting and weighting of drafting rollers	20 th	Mill visit be arranged to see the working of drafting systems on modern Simplex Frames
	40 th	Various drafting systems used in modern Simplex Machine		
11 th	41 th	Twists , selection of twist, Twist multiplier, method of twisting	21 th	Practice of drawing diagram for the insertion of twist in roving on the machine
	42 th	Flyer and its function	22 th	Practice of drawing of building motion and its operation
	43 rd	Principle of winding		
	44 th	Bobbin leading and flyer leading system		
12 th	45 th	Coiling of roving	23 th	Study and practice of construction and working of differential motion and its operation
	46 th	Objective of building motion,		
	47 th	Construction of building motion,	24 th	Practice of drawing full gearing diagram on the machine showing various drives
	48 th	Working of building motion.		
13 th	48 th	Objectives , principle of differential motions	25 th	Mantling and dismantling of draft change pinion, twist, change wheel, lifter change wheel and ratchet wheel.
	49 th	Used on modern Simplex Machine		
	50 th	Sessional 3	26 th	Modern developments will be shown in the mill (Mill visit)
	51 th	Modern development in the Simplex Machine		
14 th	52 th	Calculation of production per machine, per shift; calculation of front roll delivery and spindle speed, twist per inch and twist multiplier;	27 th	Practice of gearing diagram of simplex fram
	53 rd	Expert Lecture 3		
	54 th	Calculation of production constant, draft constant, break draft constant and twist constant;	28 th	calculations relating to parameters as specified in theory
	55 th	Calculation of total draft, break draft and individual zone draft of the machine		
15 th	56 th	Calculation of ratchet wheel	29 th	study of various electronic parts and motion in speed frame
	57 th	Calculation of lifter change wheel		

	58 th	Draft change pinion for various hanks with the help of gearing diagram of Simplex frame	30 th	study of various electronic parts and motion in speed frame
	59 th	Draft change pinion for various hanks with the help of gearing diagram of Simplex frame		

Lesson Plan

Name of Faculty: Krishan Chahal

Discipline: Textile Technology

Semester: 4th

Subject: WEAVING PREPARATORY PROCESSES-II

Lesson Plan Duration: 15 weeks

Work Load (Lecture / Practical) per week (in hours): Theory = 3 per week

Week	Theory	
	Lecture day	Topic (including assignment / test)
1 st	1 st	Introduction to warping and its objectives
	2 nd	Introduction to warping and its objectives
	3 rd	Different systems of warping and their limitation
2 nd	4 th	Different systems of warping and their limitation
	5 th	Working of sectional warping machine and their limitation
	6 th	Working of sectional warping machine and their limitation
3 rd	7 th	Working of ordinary beam warping and high speed beam warping machines and their limitations
	8 th	Working of ordinary beam warping and high speed beam warping machines and their limitations
	9 th	Working of ordinary beam warping and high speed beam warping machines and their limitations
4 th	10 th	Types of creels and tensioner
	11 th	Types of creels and tensioner
	12 th	Common faults in warping and their remedies
5 th	13 th	Process control parameter in working
	14 th	Expert Lecture 1
	15 rd	Introduction to sizing and its objects
6 th	16 th	Introduction to sizing and its objects
	17 th	Sessional-1
	18 th	Various methods of sizing and names of the same
7 th	19 th	Various methods of sizing and names of the same
	20 th	Study of slasher sizing machine. Passage of yarn through it.
	21 th	Study of slasher sizing machine. Passage of yarn through it.
8 th	22 th	Study of slasher sizing machine. Passage of yarn through it.
	23 th	Measuring and marking motion
	24 th	Measuring and marking motion
9 th	25 th	Sessional 2 nd
	26 th	Method of drying sized warp
	27 th	Method of drying sized warp
10 th	28 th	Comparison of chamber drying and cylinder drying
	29 th	Expert Lecture 2
	30 th	Multi-cylinder and hot air drying
11 th	31 th	Multi-cylinder and hot air drying
	32 th	Multi-cylinder and hot air drying

	33 th	Multi-cylinder and hot air drying
12 th	34 th	Various types of sizing ingredients and their objects
	35 th	Various types of sizing ingredients and their objects
	36 th	Various types of sizing ingredients and their objects
13 th	37 th	Sessional-III
	38 th	Process control parameter in sizing
	39 th	Process control parameter in sizing
14 th	40 th	Expert Lecture 3
	41 th	Calculation regarding weight of warp and weight of weft
	42 th	Calculation regarding weight of warp and weight of weft
15 th	43 th	Number of sections, width of sections
	44 th	creel capacity
	45 th	Calculation regarding production of warp

Lesson Plan

Name of Faculty: Ajay Bishnoi (Theory), Ajay Bishnoi (Pract.-G1), Krishan Chahal (Pract.-G2)

Discipline: Textile Technology Semester: 4th

Subject: WEAVING TECHNOLOGY-II

Lesson Plan Duration: 15 weeks

Work Load (Lecture / Practical) per week (in hours): Th= 4 , Practical = 4 (G-I:AB, G-II: KKC)

Week	Theory		Practical	
	Lecture day	Topic (including assignment / test)	Practical Week	Topic
1 st	1 st	Introduction to Dobby and its objects	1 st	Gait-up of warp on doobby loom
	2 nd	Introduction to different kind of doobbies with respect to lifts, shed formation, working of pattern cylinders		
	3 rd	Introduction to different kind of doobbies with respect to lifts, shed formation, working of pattern cylinders		
	4 th	Introduction to different kind of doobbies with respect to lifts, shed formation, working of pattern cylinders		
2 nd	5 th	Introduction to different kind of doobbies with respect to lifts, shed formation, working of pattern cylinders	2 nd	Setting of Cylinder, knives and Feelers of doobby and sketching of the same
	6 th	Mechanism and working of different parts of keighley/climax doobby		
	7 th	Mechanism and working of different parts of keighley/climax doobby		
	8 th	Mechanism and working of different parts of keighley/climax doobby		
3 rd	9 th	Introduction to paper doobby	3 rd	Setting of T-lever Techniques of levelling heal shafts on Climax doobby loom
	10 th	Timing of various working parts of doobby		
	11 th	Faults in doobby weaving and their rectification		

	12 th	Introduction to box-motion, its objects and different types of box motion		
4 th	13 th	Mechanism & working of following box motion: - Eccle's box motion	4 th	Techniques of leveling healdshafts on Paper doobby loom
	14 th	Mechanism & working of following box motion: - Eccle's box motion		
	15 th	Chain making for the drop box		
	16 th	Chain making for the drop box		
5 th	17 th	Faults in drop box and their rectification	5 th	Preparation of doobby chain. Construction, working and adjustment/setting of various parts of climax doobby with sketch
	18 th	Expert Lecture 1		
	19 th	Matching drop box with doobby		
	20 th	Matching drop box with doobby		
6 th	21 th	Sessional 1	6 th	Setting up drop-box and its timing
	22 th	Introduction to figure weaving and objects of Jacquard shedding		
	23 rd	Introduction to figure weaving and objects of Jacquard shedding		
	24 th	Introduction to figure weaving and objects of Jacquard shedding		
7 th	25 th	Construction and working of various parts of a jacquard.	7 th	Setting up drop-box and its timing
	26 th	Single and double lift Principles.		
	27 th	Single Lift Single Cylinder (SLSC) Jacquard, its limitations.		
	28 th	Double Lift Jacquards (with Single and Double Cylinders). Their merits and demerits		
8 th	29 th	Double Lift Jacquards (with Single and Double Cylinders). Their merits and demerits	8 th	Preparation of drop-box chain and working the same on loom
	30 th	Comparison of jacquard weaving with doobby and tappet weaving		
	31 th	Comparison of jacquard weaving with doobby and tappet weaving		

	32 th	Comparison of jacquard weaving with doobby and tappet weaving		
9 th	33 rd	Sessional 2	9 th	Weaving practice on loom fitted with the doobby.
	34 th	Study of mechanism of jacquard Twilling Jacquard		
	35 th	Gauze & Leno Jacquard-Cross Border Jacquard		
	36 th	Border Jacquard,		
10 th	37 th	Expert Lecture 2	10 th	Sketching of various parts of Jacquard, - Mounting of jacquard
	38 th	Study of working of various parts of Electronic Jacquard		
	39 th	Study of working of various parts of Electronic Jacquard		
	40 th	Study of working of various parts of Electronic Jacquard		
11 th	41 th	Parts of harness	11 th	Cylinder driving and griffe driving in Jacquard - Tracing 1st hook in jacquard
	42 th	Parts of harness		
	43 th	Straight tie		
	44 th	Straight tie		
12 th	45 th	Pointed tie	12 th	Comparison of Single lift and Double lift jacquard.
	46 th	Pointed tie		
	47 th	Mixed tie		
	48 th	Mixed tie		
13 th	49 th	Sessional 3	13 th	Preparation of harness, Practice of Card-punching.
	50 th	Borders and middle tie.		
	51 th	Sequence –wise Preparation of Jacquard Design – Example (from cloth design-graph paper design and Jacquard)		
	52 th	Sequence –wise Preparation of Jacquard Design – Example (from cloth design-graph paper design and Jacquard)		
14 th	53 th	Expert Lecture 3	14 th	Removal of faults during jacquard weaving
	54 th	Card cutting machine - its working and process of card lacing (chain maker)		
	55 th	Card cutting machine - its working and process of card lacing (chain maker)		

	56 th	Faults in jacquard weaving and their rectification		
15 th	57 th	Faults in jacquard weaving and their rectification	15 th	Preparation of jacquard chain.
	58 th	Calculation of production, efficiency effect on production, calculation relating to set of harness and set of the reed		
	59 th	Calculation of production, efficiency effect on production, calculation relating to set of harness and set of the reed		
	60 th	Calculation of production, efficiency effect on production, calculation relating to set of harness and set of the reed		

Lesson Plan

Name of Faculty: Sunita Devi (Theory), Sunita Devi (Pract.-G1), GF4 (Pract.-G2)

Discipline: Textile Technology Semester: 4th

Subject: FABRIC STRUCTURE -II

Lesson Plan Duration: 15 weeks

Work Load (Lecture / Practical) per week (in hours): Th= 3 , Practical = 4(G-I:SD, G-II: GF4)

Week	Theory		Practical	
	Lecture day	Topic (including assignment / test)	Practical Week	Topic
1 st	1 st	Principle of figuring with extra material,	1 st	Study of the methods of calculating and finding the repeat of unit.
	2 nd	Principle of figuring with extra material,		
	3 rd	Extra warp figuring		
2 nd	4 th	Extra warp figuring	2 nd	Study of the methods of calculating and finding the repeat of unit.
	5 th	Extra weft figuring		
	6 th	Extra weft figuring		
3 rd	7 th	figuring with extra warp and weft	3 rd	Methods of calculating various fabric parameters like shrinkage percentage, cloth/100mts, cloth/Mtrs.
	8 th	figuring with extra warp and weft		
	9 th	Weft backed cloths		
4 th	10 th	Weft backed cloths	4 th	Methods of calculating various fabric parameters like shrinkage percentage, cloth/100mts, cloth/Mtrs
	11 th	Weft backed cloths		
	12 th	warp backed clothes		
5 th	13 th	warp backed clothes	5 th	Reeds space required during analysis of various fabrics mentioned in theory..
	14 th	Expert Lecture 1		
	15 th	Interchanging figured backed clothes		
6 th	16 th	Interchanging figured backed clothes	6 th	Testing of of figuring with extra material,
	17 th	Sessional 1		
	18 rd	backed cloth with wadded threads		
7 th	19 th	backed cloth with wadded threads	7 th	Testing of of figuring with extra material
	20 th	imitation backed cloth		
	21 th	imitation backed cloth		
8 th	22 th	Self stitched double clothes	8 th	Viva voca
	23 th	Self stitched double clothes		
	24 th	centre stitched double cloth		
9 th	25 rd	Sessional 2	9 th	Testing of backed cloth/double cloth
	26 th	centre stitched double cloth		
	27 th	centre stitched double cloth		

10 th	28 th	Expert Lecture 2	10 th	Testing of backed cloth/double cloth
	29 th	wadded double clothes		
	30 th	wadded double clothes		
11 th	31 th	Pile Fabrics,	11 th	Fabric analysis of pile fabrics
	32 th	Pile Fabrics,		
	33 th	Terry and fancy pile fabrics		
12 th	34 th	simple & fancy Terry pile structure	12 th	Fabric analysis of pile fabrics
	35 th	wrap pile production with the aid of wires & on face to face principles		
	36 th	wrap pile production with the aid of wires & on face to face principles		
13 th	37 th	Sessional 3	13 th	Fabric analysis of pile fabrics
	38 th	wrap pile production with the aid of wires & on face to face principles		
	39 th	Weft pile fabrics, velveteen		
14 th	40 th	Weft pile fabrics, velveteen	14 th	Fabric analysis of damasks and brocades
	41 th	Expert Lecture 3		
	42 th	Damasks (Definition and design only)		
15 th	43 th	Damasks (Definition and design only)	15 th	Fabric analysis of damasks and brocades .
	44 th	Figured warp rib brocades (Definition and design only)		
	45 th	Figured warp rib brocades (Definition and design only)		

Lesson Plan

Name of Faculty: Name of Faculty: Sunita Devi (Theory), GF3 (Pract.-G1 & G2)

Discipline: Textile Technology

Semester: 4th

Subject: Knitting Technology

Lesson Plan Duration: 15 weeks

Work Load (Lecture / Practical) per week (in hours): Th= 3, Practical = 4

Week	Theory		Practical	
	Lecture day	Topic (including assignment / test)	Practical Week	Topic
1 st	1 st	Comparison between knitted and woven fabrics	1 st	To study different needles and their cycles.
	2 nd	warp and weft knitting. Types of knitting needles,		
	3 rd	Types of knitting needles,		
2 nd	4 th	passage of material through circular knitting machine	2 nd	-do-
	5 th	-do-		
	6 th	passage of material through flat bed knitting machine		
3 rd	7 th	-do-	3 rd	Yarn parameters for hosiery yarn
	8 th	parts of knitting machine, advantages and disadvantages of each		
	9 th	-do-		
4 th	10 th	Weft knitting; Introduction	4 th	-do-
	11 th	Types of stitches: Knit		
	12 th	tuck, float, Lay		
5 th	13 th	-do-	5 th	To make knit, tuck and float stitches
	14 th	Representation of stitches		
	15 th	Effects of stitches		
6 th	16 th	methods of formation	6 th	-do-
	17 th	end uses of these stitches		
	18 rd	Revision of above		
7 th	19 th	Weft knit structures; Introduction	7 th	To study passage of yarn through flat bed and circular weft knitting machining.
	20 th	Plain structure		
	21 th	Rib structure		
8 th	22 th	Interlock structure	8 th	To study different type of cams.
	23 th	Purl structure		
	24 th	Characteristics of these structure		
9 th	25 rd	representation, derivatives of these structure	9 th	-do-
	26 th	End uses with knitting cycles of each		
	27 th	-do-		

10 th	28 th	Fabric defect in weft knitting	10 th	To prepare plain, rile, interlock and pure structures and its variations
	29 th	cover factor/tightness factor,		
	30 th	Robbing back		
11 th	31 th	calculations pertaining to production.	11 th	-do-
	32 th	Methods of production of hose		
	33 th	Methods of production of half- hose		
12 th	34 th	Wrap Knitting: Introduction to under lap	12 th	To study fabric defects on the machine knitting designs
	35 th	Wrap Knitting: Introduction to over lap		
	36 th	Wrap Knitting: Introduction to closed lap		
13 th	37 th	Wrap Knitting: Introduction to open lap	13 th	To study lapping movement of warp knits
	38 th	Brief description of Tricot machines		
	39 th	-do-		
14 th	40 th	Brief description of Raschel machines	14 th	-do-
	41 th	-do-		
	42 th	fabrics lapping movement of warp knitting		
15 th	43 th	-do-	15 th	Preparation of warp knit samples
	44 th	Revision		
	45 th	Revision		

