Syllabus

Bachelor in Design (Specialization in Textiles) Department of Silpa-Sadana, PSV

Semester V

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks	Course Objective/ Outcome
TC-V/01	History of Design	Common for all three specialization	2	Practical	50 (25+25)	Ability enhancement
TC-V/02	Quality Assurance, Accountancy and Costing	Quality control, accountancy, knowledge about different tax systems, costing etc.	2	Theory	25 (5+20)	Employability and entrepreneurship
TC-V/03	Materials & Processes - I	Natural fibres, yarn and preparatory to weaving	4	Theory	50 (10+40)	Enrichment of domain knowledge and employability & entrepreneurship
		Weaving mechanism, Fabric Structure and Calculation – I	2		25 (5+20)	Enrichment of domain
TC-V/04	Textile Technology - I	(Group A) Preparatory and allied	2	-	25 (5+20)	knowledge and employability &
		chemical processing (Group B)	4	Theory	50 (10+40)	entrepreneurship
		Weaving Practice -I	4		100 (50+50)	
TC-V/05	Workshop Practice - I	Workshop practice on preparatory and allied	2	- Practical	50 (25+25)	Skill development
		chemical processing	6		150 (75+75)	

TC-V/06	Product Design - I	Weaving	6	Practical	150 (75+75)	Employability and entrepreneurship
		Total Credit	24			

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)			
TC-V/02	Quality Assurance,	Quality control,	2	Theory	25			
	Accountancy and Costing	accountancy, knowledge		-	(5+20)			
		about different tax						
		systems, costing etc						
• Co	ncept of quality, need for qual	ity assurance. Prevention, app	oraisal and f	ailure aspect	ts of quality.			
• Qı	ality control: Statistical quality	/ control. Management of qua	lity: data co	llection, ana	lysis and reporting.			
	National and Internation	al Standardization.						
	 Introduction to accountancy, its need in industry. Maintenance of accountancy in an organisation, Worked out examples. Acquaintance with commonly used accountancy software. 							
ex	 Estimation and costing. Costing principles, costing patterns for different process flows, worked out examples. Rudimentary knowledge about different tax systems, VAT, MODVAT, and basic concepts on 							
tra	de licence, company laws etc.							

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-V/03	Materials & Processes - I	Natural fibres, yarn and preparatory to weaving	4	Theory	50 (10+40)
 Class Phys yarn Introduct Basic <i>Introduct</i> Wea Diffe operation 	oduction to Textile fibres sification of fibres ical and chemical properties or properties oduction to spinning c principle of opening, cleaning <i>ion to preparatory to weaving</i> ving preparatory processes — erent preparatory processes lik n. erent types of devices or machi	g, blow-room, carding, combin g —— their utility. e Winding, Warping, Sizing —	g, drawing, —— their o	roving and ri bjectives, bas	ng spinning

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)	
TC-V/04	Textile Technology - I	Weaving mechanism, Fabric Structure and Calculation – I (Group A)	2	Theory	25 (5+20)	
 (Group A) Evolution of handloom. Descriptive study of different handlooms. Study of different parts and accessories of handloom — their functions. Motions of loom — their functions. Fabric structure — Concept of weave, repeat, weaving plan. Methods of weave representation, different types of drafts. Fundamental weaves namely plain, twill, satin/sateen and their derivatives. Numbering systems of yarn. Conversion of yarn count. Calculation of resultant count and average count. Reed count and calculations. Heald count and calculations. Warp, weft and cloth calculations. 						
TC-V/04	Textile Technology - I	Preparatory and allied chemical Processing (Group B)	2	Theory	25 (5+20)	

- > Water hardness: Nature of hardness and their reasons, effect of hardness in textile processing, different methods of hardness removal in brief.
- > Dry preparatory processes: Mending, Stamping, Shearing and Cropping, Singeing etc.
- > Chemistry and technology of removing natural and added impurities from natural fibres, viz. Cotton, Jute, Silk, Wool and others.
- Chemistry and Technology of bleaching cotton, silk, wool, jute and others employing different bleaching agents like hydrogen peroxide, hypochlorite etc.
- Stabilized bleaching, Woolenisation and chemical dehairing of jute.
- > Preparatory process sequence of common blends like Polyester/cotton, Polyester/Viscose etc.
- Optical brightening agent and bluing agents for textiles: principles and their application process. Environment friendly preparatory process and recent developments.
- > Mercerization of cotton substrates: principles and process parameters
- > Different machineries used for batch, continuous and semi-continuous preparatory processing of textiles.
- > Evaluation of desizing, scouring, bleaching and mercerization efficiencies.

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)			
TC-V/05	Workshop Practice - I	Weaving practice - I	4	Practical	100 (50+50)			
ap • Pre • We	 Preparation of warp, ball warp, drawing-in, denting, gaiting up of warp. Weaving practice on frame loom/hobby loom. 							
TC-V/05	Workshop Practice - I	Preparatory and allied chemical Processing workshop	2	Practical	50 (25+25)			

- Estimation of water hardness
- Desizing of cotton fabric
- Scouring of cotton yarn/fabric
- > Bleaching of cotton yarn/fabric with a) hydrogen peroxide and b) Hypochlorite
- Degumming and bleaching of silk
- Scouring and bleaching of wool fibre
- Scouring and bleaching of jute
- Stabilized bleaching of jute
- > Application of optical brightening agent on cotton, silk etc.
- > Evaluation of desized, scoured and bleached textiles
- > Eco-friendly scouring and bleaching and as well as enzymatic degumming of silk
- > Determination of dimensional stability of textile fabric

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-V/06	Product Design - I	Weaving	6	Practical	150 (75+75)

Introduction

This course is an extension of earlier inputs given to the students in area of woven textiles. The student will continue to explore basic woven structures through product design. There is greater emphasis on the development on concepts, visual problem solving from paper to finished woven pieces and personal statement for the end user. Students will develop skills with colour and weave effects to control colour and patterns. There is an emphasis on application of design process with selection of appropriate materials for sampling as a reference for finished work. **Aim**

To produce a collection of a product for home furnishings/apparel using basic weaves and their derivatives. **Objectives**

- To understand colour and weave effect
- Selection of material and woven structure with product development as per design brief
- Make illustrations of design ideas
- Lean to make specification sheet of samples for production process
- To make a collection of a product in different colour ways

Semester VI

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)	Course Objective/ Outcome
TC-VI/01	History of Indian Textiles & Accessories	History of Indian textile and clothing	2	Theory	25 (5+20)	Ability enhancement

TC-VI/02	Textile Testing Methodology	Identification of textile fibres and dyes, Mechanical Testing, Colourfastness to different agencies, etc	2	Practical	50 (25+25)	Skill development and employability	
TC-VI/03	Materials & Processes - II	Manmade fibres and yarns including decorative/fancy yarns	4	Theory	50 (10+40)	Domain knowledge enrichment and employability & entrepreneurship	
TC-VI/04	Textile Technology - II	Weaving Mechanism, Fabric	2		25 (5+20)	Domain knowledge	
		Structure and Calculation – II Dyeing of textile substrates	2	Theory	25 (5+20)	enrichment and employability & entrepreneurship	
			4		50 (10+40)		
TC-VI/05	Workshop Practice - II	Weaving Practice – II	4		100 (50+50)	Skill development	
		Textile Dyeing workshop	2	Practical	50 (25+25)		
			6		150 (75 +75)		
TC-VI/06	Product Design - II	Creative and unconventional Surface ornamentation techniques	6	Practical	150 (75+75)	Employability and entrepreneurship	
	Total Credit 24						

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
					External)

TC-VI/0	History of Indian Textiles & Accessories	Brief history of Indian textile and clothing	2	Theory	25 (5+20)					
Section-	Section-A									
 Indian heritage: brief study of Indian textiles. Different varieties of manufactured handloom textiles from north-eastern, eastern, western and southern region in India. 										
1	tudy of Traditional textiles of d echnique, color & motifs, constru- Paithani, Chanderii, Himru, Masru,	uction of the famous woven o	crafts like;		•					
	 Study of dyed & printed textiles with reference to historical significances, dyeing technique, color & motif of Patola, Ikat, Telia Rumal, Batik, Bandhani, Sanganeri, block printing, kalamkari, mud printing (Bagru), etc 									
Section-	3									
> :	itudy of embroideries with referer	ce to color, motif, stitches & fa	abric of the	crafts like Ka	ntha, Phulkari,					
(Chickankari, Chamba rumal, Sujani	bihari, Kasuti, etc.								
> :	study of traditional clothing of diffe	erent states of India								

TC-VI/02		Textile Testing Methodology	Identification of textile fibres and dyes, Mechanical Testing,	2	Practical	50 (25+25)
		Wethodology	Colourfastness to different agencies,			(23+23)
			etc			
∻ ∣	ntroduct	tion to textile testing				
Phys	ical testi	ing				
∻ ∣	dentifica	tion of fibres (Physic	al & Chemical method)			
✤ F	Fibre test	ting: length, fineness	, maturity of cotton, moisture in fibres, t	foreign ma	tter content, I	tensile testing.
نہ ۱	Yarn test	ing: Yarn numbering,	Twist, Tensile properties, uniformity et	с.		
			, cover factor, crimp, strength (tensile, t ermeability etc.), Durability (Abrasion, p	-		properties
Cher	nical tes	ting				
* /	Assessme	ent of colour fastness	to different agencies viz. light, washing	, rubbing e	tc.	
∻ ∣	dentifica	ition of commonly us	ed dyestuffs on textile substrates			
	puterize ma etc.	d colour measureme	nts i.e. K/S, Whiteness and yellowness ir	ndex, Bright	tness index, Co	olour value, Hue,

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)		
TC-VI/03	Materials &	Manmade fibres and yarns including	4	Theory	50		
	Processes - II	decorative/fancy yarns			(10+40)		
 Class Requ Intro 	 Introduction to Man-made Textile fibers Classification of Man-made textile fibers Requirements of man-made fibres Introduction to synthetic fibers manufacturing (Viscose, Nylon, Polyester, Acrylic, Polypropylene etc.) Physical and chemical properties of man-made fibres. 						
• Туре	es of decorative yarns	and principles of formation					
• Text	Texturised yarn						
Introduction to Doubling.							
• Diffe	erent Yarn packages u	ised in textiles					

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-VI/04	Textile Technology - II	Weaving Mechanism, Fabric Structure and Calculation – II (Group – A)	2	Theory	25 (5+20)
 Different types of heald Tie-ups and Heald Reversing Types of shedding and devices used for shedding — Classification of looms according to shedding devices Dobby shedding devices ———— Classification; Princi merits and demerits. Concept of combined weaves. Weaving plan and features of Honeycomb, Brighton Crepe, Sponge, Diamond, Diaper/Dice, and other fan Warp, weft and cloth calculations. Crimp, take-up, fractional cover and cover factor. 		used for shedding ——— their r g to shedding devices used. - Classification; Principle of oper oneycomb, Brighton honeycoml er/Dice, and other fancy weaves. ns.	merits and d ration of sing b, Huck-a-ba	emerits. gle and doul	
TC-VI/04	Textile Technology - II	Dyeing of textile substrates (Group B)	2	Theory	25 (5+20)

- > Colour chemistry, classification and brief introduction on dyes, pigments. Different dye-fibre interactions
- Theory and technology of application of different classes of dyes (Direct, Reactive, Vat, Sulphur, Acid & Metal-Complex, Basic etc. on different natural fibres such as cotton, silk, wool, jute etc.
- > Theory and technology of application of different classes of dyes (Disperse, Basic, Acid etc) on different synthetic fibres such as polyester, nylon, acrylic etc.
- > Dyeing of common blended fabrics.
- > Natural Dyes: Source, extraction and its application technology on textile substrates.
- > Dyeing machineries: Batch, continuous and semi-continuous machineries involved in dyeing.
- Colour Science: Fundamentals of instrumental measurement of colour parameters, whiteness, yellowness, metamerism index etc.
- Manual and computerized colour matching systems: advantages and drawback > Recent developments in dyestuffs and dyeing

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-VI/05	Workshop Practice - II	Weaving Practice – II	4	Practical	100 (50+50)
 Preparatory processes before weaving such as bobbin and pirn winding by Charkha and other im appliances. Preparation of warp, ball warp, drawing-in, denting, gaiting-up of warp. Weaving samples using twill weaves and their derivatives, honeycomb, huck-a-back, mockleno, or and other fancy weaves and their combinations. Extra weft figuring. 					·
TC-VI/05	Workshop Practice - II	Textile Dyeing Workshop	2	Practical	50 (25+25)

- Dyeing of cotton yarn/fabric with Direct Dyes, Different classes of Reactive dyes, Sulphur Dyes, Vat Dyes, Solubilised Vat Dyes, Azoic Colour
- > Dyeing of wool and silk with: Acid & Metal Complex Dyes, ii) Basic Dyes
- Dyeing of Acrylic with Basic Dyes
- > Dyeing of Polyester with Disperse Dyes
- > Dyeing of cotton and Silk with Natural Dyes
- > Instrumental measurement of colour parameters, metamerism index etc of the dyed textile substrates.

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-VI/06	Product Design - II	Creative and unconventional Surface ornamentation techniques		Practical	150 (75+75)

Introduction:

Weaving, printing and dyeing are conventional methods of surface ornamentation. However, there are number of unconventional techniques by which surface ornamentation can be done. This course is designed to encourage students to explore various unconventional creative techniques and to apply these techniques to produce a product i.e. clothing/furnishing. Students will learn to design folios where they will record their research, problem solving and manufacturing process and evaluate their work through presentation.

Aim:

To produce collection of a product for home furnishings/apparel using unconventional surface ornamentation technique. **Objectives:**

- > To understand and explore verity of surface ornamentation techniques including one used in hand-made paper making, patchwork, quilting, pleating, marbling, stitching, felting, burning, washing etc.
- > Selection of a suitable technique for a given material and product development as per design brief.
- Make illustrations of design ideas
- > To make collection of a product in different colour ways

Semester VII

Subjec Code	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)	Course Objective/ Outcome
				Externaly	

TC-VII/01	Computer Aided Design	Textile CAD etc.	2	Practical	50 (25+25)	Skill development and employability
TC-VII/02	Finishing of Textile Materials	Mechanical and Chemical finishing, Packaging etc	2	Practical	50 (25+25)	Skill development
TC-VII/03	Materials & Processes - III	Introduction to Clothing	4	Practical	100 (50+50)	Skill Development
TC-VII/04	Textile Technology - IIII	Weaving Mechanism, Fabric Structure and Calculation - III Printing of Textile Substrates	2	Theory	25 (5+20) 25 (5+20)	Domain knowledge enrichment and employability & entrepreneurship
			4		50 (10+40)	
TC-VII/05	Workshop Practice - III	Weaving Practice - III Workshop on textile	3	Practical	75 (37.5+37.5) 75 (37.5+37.5)	Skill development
		printing	6		150 (75+75)	
TC-VII/06	Product Design - III	Print Design	6	Practical	150 (75+75)	Employability and entrepreneurship
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Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
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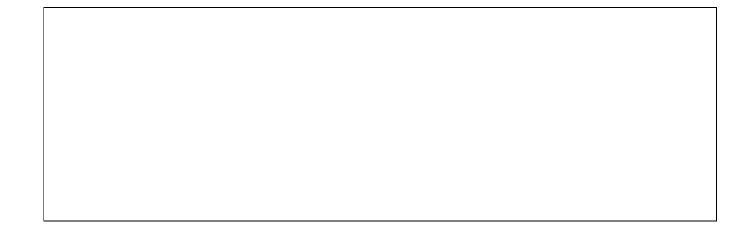
TC-VII/01	Computer Aided Design	Textile CAD etc.	2	Practical	50 (25+25)
Class	ification of textile designs				
Vario	ous software for creation of tex	tile designs			
• Desig	gn creation and editing using P	noto Shop (both raster and ve	ctor based	l images)	
• Desig	gn creation and editing using C	orel Draw			
• Adva	ntages of using Textile CAD/CA	M systems			
• Some	e common commercially availa	ble Textile CAD/CAM software	e systems		
• Desig	gning using Dobby Module of t	extile software			
• Creat	tion of fundamental and comb (drafting, lifting, de		ives along	with weaving plar	n
• Strip	e and check designing				
	weft and extra weft figuring				
	ents and principle of operation	of Jacquard shedding device			
	ous steps of manual figuring for				
	ng and developing Jacquard de	•			
• Fabri	c simulation and simulation co	lour ways			
• Desig	gning for screen printing using	Textile Software			
• Artw	ork development and colour re	eduction			
Repe	at creation				
Color	ur separation				
Appli	cation of 3D Texture Mapping				

Subjec Code	t Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-VII/0	2 Finishing of Textile	Mechanical and Chemical	2	Practical	50
	Materials	finishing, Packaging etc			(25+25)
	softening and stiffening agents Mercerization of cotton yarn a Woolenisation of jute Scroop finish on silk fabric Common chemical finishes for Flame retardant etc.		ease, wat		-
	Folding and packaging of textile	e/garments etc.			

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-VII/03	Materials & Processes - III	Introduction to Clothing	4	Practical	100
					(50+50)

- Need and selection of clothing, Origin of clothing.
- Srief ideas on Clothing comfort & objective assessment of fabric handle characteristics Stere Pattern making
 - Important terminologies
 - Types:
 - o Baby frock, Kameez, Salwar, Punjabi, Pajama, Sleeve, Skirt, Basic block (female), Shirt etc.
 - Different kinds of Pockets, Collar, Neckline, etc.
 - Techniques
 - Variations, Drafting & Draping, Contouring
- Spreading, Marker planning, Marker efficiency, Lay planning
- Dart and Dart manipulation
- Cutting, Cutting machines, Different types of cutting
- Lining and interlining and other support materials
- Various types of dummies and mannequins
- Types of sewing machine and its important parts; sewing faults etc.
- Organizational structure of an apparel industry.
- Raw materials used in readymade garment (RMG) industry, Types of samples & samples approval, Quality management Systems: ISO, TQM, 6-Sigma, kaizen etc., Grading systems (4-point and 10 point)
- Restricted substances in apparel & global regulatory requirements,
- Care labeling, productivity and work study and assessment of SAM value
- Different types of clothing
- Different styles of garment construction and machineries used
- Basic Garments Analysis
- Different types of Seam & Stitches
- Srief ideas on: Gather, Frill, Smoking, Pleat, Dart, Tucks, etc.
- Introduction to Merchandising: Merchandiser & Merchandising, Difference between marketing and merchandising, Fashion Cycle
 Quality Checking and packaging. Home textiles Fibres and Fabrics used; eco-friendly aspects, labeling issues.

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-VII/04	 Meaving Mechanism, Fabric Structure and Calculation - III (Group – A) 			Theory	25 (5+20)
 Co Stu Po Ba Fal Co Co 	udy of different parts of jacq wer looms ———————————————————————————————————	peration of single lift and double uard and accessories. w, basic concept, detailed classif fferent power looms. ies. double cloth, Bedford cord, piqu	ications.	uards.	
TC-VII/04	Textile Technology - III	Printing of Textile Substrates (Group B)	2	Theory	25 (5+20)
 Th Pri Pri Pri Dis Pri Pri Pri Ha 	ickener: Classification, source nting of cotton and other ce nting of silk fabric with diffe nting of silk and cotton fabric scharge and resist style of pr nting of polyester fabric nting machineries and faults nd screen development by p	inting in printing and their remedies.	ickener ortant dye , solubilis	stuffs and pigr ed vat etc.	ment colour.



Subject Code	Subject	Broad area (s) to be covered	Credit Mode of teaching		Marks (Internal + External)			
TC-VII/05	Workshop Practice - III	Weaving Practice – III	3	Practical	75 (37.5+37.5)			
 Weaving samples using twills, their derivatives, and other fancy weaves. Textile designing for jacquard figuring. Preparation of harness building and tie-up for jacquards. Weaving cloth samples by jacquard/dobby. 								
TC-VII/05	Workshop Practice - III	Textile Printing Workshop	3	Practical	75 (37.5+37.5)			

- > Printing of cotton fabrics with important dyestuffs and pigment colour.
- > Printing of silk fabric with different classes of dyes such as acid, solubilised vat etc.
- > Printing of silk and cotton fabric with natural colour
- Discharge and resist style of printing
- > Printing of jute fabric with pigment colour
- Preparation of hand screen by photochemical methods

Subject Code	Subject	Broad area (s) to be covered	Credit	Mode of teaching	Marks (Internal + External)
TC-VII/06	Product Design - III	Print Design	6	Practical	150 (75+75)

Course objective:

To innovate a product design collection through various theme or concept and by applying different printing and painting techniques along with a proper documentation and costing.

- > To identify the product according to the client requirement
- > To prepare a theme and mood board
- > To prepare different concept from the mood board
- Selection of final concept and design layout
- > Identification of product development ideology and methodologies
- Sample and final product development layout along with photography > Cost analysis and final documentation

Semester VIII

Subject Code	Subject	Credit	Mode of teaching	Marks (Internal + External)	Course Objective/ Outcome
TC-VIII/01	Entrepreneurship, Business Management & Marketing	2	Practical	50 (25+25)	Entrepreneurship
TC-VIII/02	Craft Documentation	4	Practical	100 (50 +50)	Enrichment of domain knowledge and skill development
TC-VIII/03	Professional Exposure	2	Practical	50 (0+50)	Employability and entrepreneurship

TC-VIII/04	Elective Paper: Interdisciplinary area(s)	4	Practical	100 (50+50)	Skill Development
TC-VIII/05	Preparatory Project Work	2	Practical	50 (50+0)	Employability and entrepreneurship
TC-VIII/06	Major Project	10	Practical	250 (125+125)	Employability and entrepreneurship
Tot ıl Credit = 24					