STATE BOARD OF TECHNICAL EDUCATION, BIHAR

Scheme of Teaching and Examinations for

IVTH SEMESTER DIPLOMA IN GARMENT TECHNOLOGY

(Effective from Session 2022-23 Batch)

THEORY

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME	EXAMINATION – SCHEME							Credits
			Periods per Week	Hours of Exam.	Teacher's Assessment (TA) Marks (A)	Class Test(CT) Marks (B)	End Semester Exam. (ESE) Marks (C)	Total Marks (A+B+C)	Pass Marks ESE	Pass Marks in the Subject	
1.	Introduction to Textile Chemistry	2052401	03	03	10	20	70	100	28	40	03
2.	Garment Construction I	2052402	03	03	10	20	70	100	28	40	03
3.	Pattern Making & Grading	2052403	03	03	10	20	70	100	28	40	03
4.	CAD in Garment Technology -I	2052404	03	03	10	20	70	100	28	40	03
5.	Elective (Any One)	2052405	03	03	10	20	70	100	28	40	03
	Elective- (i) Nonwoven & Knitting (2052405A)		(ii) Indian and Western Costume (2052405B)		(iii) Garment Machinery & Equipment (2052405C)		(iv) Leather Garment Construction (2052405D)				
	Total:- 15						**350**	**500**			15

PRACTICAL

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME	EXAMINATION – SCHEME					Credits
			Periods per Week	Hours of Exam.	Practical (ESE)		Total Marks (PA+ESE)	Pass Marks in the Subject	
					Internal (PA)	External (ESE)			
6.	Garment Construction Lab-I	2052406	02	03	15	35	50	20	01
7.	Textile Chemical Processing Lab	2052407	04	03	15	35	50	20	02
8.	CAD in Garment Technology Lab -I	2052408	04	03	15	35	50	20	02
Total:- 10							**150**		**05**

TERM WORK

Sr. No.	SUBJECTS	SUBJECT CODE	TEACHING SCHEME	EXAMINATION – SCHEME				Credits
			Periods per week	Marks of Internal Examiner (PA)	Marks of External Examiner (ESE)	Total Marks (PA+ESE)	Pass Marks in the Subject	
9.	Garment Production Machinery & Management	2052409	02	07	18	25	10	01
10.	Pattern & Design Development	2052410	02	07	18	25	10	01
11.	Course under COE / Moocs / NPTEL / Others	2052411	04	15	35	50	20	02
Total:- 08						**100**		
Total Periods per week Each of duration One Hours = **33**						**Total Marks = 750**		**24**

INTRODUCTION TO TEXTILE CHEMISTRY

Subject Code	Theory						Credits
2052401	No. of Periods Per Week			Full Marks	:	100	03
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
	—	—	—	CT	:	20	

CONTENTS ; THEORY

	Name of the Topics	Hrs/week	Marks
Unit -1	**PREPARATORY PROCESS IN WET PROCESSING** • Sequence of process used in wet processing– Object of Singeing – Gas singeing Machine. Objects of de-sizing – Enzyme De-sizing. Scouring – objects - Scouring of cotton fabric uses Kiers - Merits of Continuous desizing and Scouring. Bleaching – objects of bleaching – Conventional bleaching process (using hypo chloride). Continuous method of scouring and bleaching using Hydrogen peroxide in J Box with line diagram – Comparison of woven and knitted cloth processing	**12**	
Unit -2	**DYEING OF TEXTILES** • Dyes used for natural, Manmade and synthetic fibre • Dyeing of cellulosic fibre with Vat, Reactive dyes using Jigger • Dyeing of knitted fabric with reactive dyes using soft flow machine • Dyeing method of protein fibre with acid dyes • Dyeing of polyester with disperse dyes • HTHP Beam dyeing machine. Garment Dyeing – Sancowad process, Rotary dyeing, , Denim Processing	**13**	
Unit – 3	**PRINTING OF TEXTILES** • Comparison between dyeing and printing • Styles and methods of printing. • Direct style of printing with pigments on cotton • Direct style of Printing with reactive dyes on cotton • Direct style of printing with Disperse dyes on polyester • Brief style of Batik style, tie & dye, and Ikkat on cotton. • Steps in Screen preparation • Brief study of printing techniques such as Flat bed, Rotary, Digital ink jet printing • Curing machine – steamer	**13**	
Unit – 4	**FINISHING OF TEXTILES** • Mercerization – Objects of mercerization • Mercerization of cotton fabric using chainless machine • Sanforisation process • Objects of Compacting and Calendaring. • Finishing – Type of finishes (Functional and Novelty finish), Finishing procedure and Chemicals • Silicone finish, • Marble (Acid) finish, • Stone wash, • Water repellent and Water resistance finish, • Flame retardant • Anti-microbial finish.	**12**	
	Total	**50**	

Text/ Reference Books:-		
Name of Authors	**Titles of the Book**	**Name of the Publishe**
R. H. Peters.	Textile Chemistry, Vol.-I, II, III,	Elsewhere Publishing Co
S.R. Karmakar	Chemical Technology in the Pre-Treatment Processes of Textiles	Elsevier, Academic Press
Prayog R S	The Bleaching Dying of Cotton material.	Weaver's service centre, Mumbai
SHENAI.V.A.	Tech. of Textile Processing all series	Shevak Publications
R. H. Peters.	Textile Chemistry, Vol.-I, II, III,	Elsewhere Publishing Co
Miller , L.W.C.	Textile printing	Butter worths Publications
CHOUDHURY, ASIM KUMAR ROY	Principles of Textile Finishing	Woodhead Publishing

GARMENT CONSTRUCTION I

Subject Code 2052402	Theory			No of Period in one session : 50			Credits
	No. of Periods Per Week			Full Marks	:	100	03
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
				CT	:	20	

Contents (Theory)			Hrs/week	Marks
UNIT-1	**INTRODUCTION TO GARMENT CONSTRUCTION**		[03]	
	01.01	Introduction to Garment construction, Process overview of garment construction, Overview of Indian Garment Industry		
UNIT-2	**TOOLS FOR GARMENT MAKING**		[06]	
	02.01	Tools & equipment used in Garment making cutting tools: scissors, dressmakers' scissors, pinking shears, button hole shears, embroidery tools: embroidery scissors, embroidery frame needles, needle threader, threads, thimble, stiletto, bodkin Measuring tools: measuring tape, meter scale, L-scale, small ruler, Marking tools: tracing wheel, tailor chalk, pencils, carbon paper General tools: pins, pin cushions, seam ripper, orange stick, sewing thread, cutting table, mirror, French curves, dress form pressing tools: iron box, iron boards, sleeve board, press cloth		
UNIT-3	**SEWING MACHINES**		[13]	
	03.01	Sewing machine types: Domestic model machines: straight stitch, zigzag machines, semiautomatic machine, automatic and super automatic machine industrial model machines: single needle lock stitch machine, over lock machine, safety stitch machine, Blind stitch machine, Bar tack machine, Button hole machine, Button sewing machine – parts of sewing machine troubles, causes and remedies for sewing machine –upper thread breaking, lower thread breaking, needle breaking, fabric puckering, machine working heavily, looping stitch, missing stitch, irregular stitching, machine not feeding properly –selection of needles and threads for different fabrics care of sewing machine –special sewing machine attachments – ruffler, cloth guide, binder, tucker, gathering foot, feed cover plate		
UNIT-4	**BODY MEASURING SYSTEMS**		[07]	
	04.01	Precautions while taking and recording body measurements definition of anthropometry and basic land marks measurements for garments like skirt, frock, shirt, pant, nighty, salwar and kameez computerized body measuring systems, taking of dress form measurements		
UNIT-5	**BASIC STITCHES**		[07]	
	05.01	Introduction, Type of Stitches, Temporary stitches: Even basting, Uneven basting, and Slip basting, diagonal basting Permanent stitches: Running stitch, Back stitch, Overcasting, and Combination stitch, Over handing		
UNIT-6	**HEMS**		[03]	

	06.01	Hems: Definition – Purpose, Factors governing width of hem, Different hems and their uses Types: Stitched & Turned hem, Seam binding hem finish, Catch stitched hem, Narrow machine stitched hem, Rolled or whipped hem; Shell edged hem		
UNIT-7	**SEAMS AND SEAM FINISHES**		**[11]**	
	07.01	Seam: Definition, uses of different seams, Process of making Plain seam, Top stitched seam, Single top stitching, Double top stitching, Lapped seam, Flat fell seam, Welt seam, Slot seam, French seam, Mantua maker's seam, Piped seam, Seam finishes: Pinked finish, Double stitch finish, Edge stitched finish, Bound Seam edge finish, Herring bone finish, Overcast finish, Factors influencing selection of seams for garments		
		Total	**50**	

Reference Books :-

1. Mary Mathews Practical Clothing Construction, Part I & II, Madras.
2. Constance Talbot -The Complete Book of Sewing, London Museum Press Ltd.
3. Collins Encyclopaedia of Dress Making, Golden Hands.
4. A.C. & E.M Barrowman Step by Step Sewing, VoI & II, MacMillan Company, London.
5. Frances Blondin W M H The New Encyclopaedia of Modern Sewing, Wise & Co., New York
6. Alison Beazley, Terry Bond Computer Aided Pattern Design and Product Development, Black Well Publishing.
7. Readers Digest –Complete Guide to Sewing

PATTERN MAKING & GRADING

Subject Code 2052403	Theory			No of Period in one session : 50			Credits
	No. of Periods Per Week			Full Marks	:	100	3
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
				CT	:	20	

	Contents (Theory)	Hrs/ week	Marks
UNIT-1	**PATTERN DRAFTING FOR MEN'S WEAR I** Pattern drafting procedure of Full sleeve shirt - Pleated trousers - Jeans - Nehru's Kurtha with Chinese mandarin collar – Pattern layout - Calculation of material consumption - Construction procedure	[10]	
UNIT-2	**PATTERN DRAFTING FOR MEN'S WEAR II** Pattern drafting procedure of SB Waist Coat - Jodhpur Coat - Safari shirt – Dressing Gown - Pattern layout - Calculation of material consumption – Construction procedure.	[10]	
UNIT-3	**PATTERN DRAFTING FOR LADIES WEAR I** Pattern drafting procedure of 6 panels Sari petticoat – Flared pants – Katori choli - Straight jacket with front open and Leg-o-mutton sleeve- Pattern layout - Calculation of material consumption - Construction procedure.	[10]	
UNIT-4	**PATTERN DRAFTING FOR LADIES WEAR II** Pattern drafting procedure of House coat with Front full opening and open collar – Cape - Full Maxi with Magyar sleeve – Culottes (Divided skirt) - Pattern layout - Calculation of material consumption - Construction procedure.	[10]	
UNIT-5	**PATTERN GRADING, FITTING& ALTERATIONS** Define pattern grading - Pattern grading procedure for bodice front, back & sleeve - Variables for fitting - Importance of altering patterns - General principles for pattern alteration - Study of fitting problems and alterations in the following parts - Bust line - Neckline - Shoulder line - Armhole - Bodice back – Sleeves - Study of fitting problems and alterations in Trousers. Brief study of CAD software for pattern drafting and grading & its importance.	[10]	
	Total	50	

Books Recommended:

Title	Author	Publisher	Year
The Art Of Sewing	Anna Jacob Thomas.	Ubs Publishers, Delhi.	2001
Practical Clothing Constructions Part I & II	Mary Mathews	Paprinpack Printers,Chennai.	1982
Zarapkar System Of Cutting.	K.R.Zarapkar	Navneet Publications (I) Ltd.,Dantali. Gujarat.	2005
Sew it Yourself	Lippman (Gidon)	Prentice Hall Inc New Jersey	2002
Comparative Clothing Construction Techniques	Virginn Stolpe Lewis	Surjeet Publications, Delhi	1985
Scientific Garments Cutting	K.M. Hedge	K.M. Hedge & Sons., Poona	1998
Pattern Cutting For Women's Outer Wear	Gerry Cooklin	Blackwell Science Publication, London	2001
Metric Pattern Cutting	Winfred Aldrich	Blackwell Science Publication, London	2003
Metric Pattern Cutting For Children 's Wear	Winfred Aldrich	Blackwell Science Publication, London	2004
Pattern grading for Mens' Clothes	Gerry Cooklin	Blackwell Science Publication, London	2000
Pattern grading for Children's Clothes	Gerry Cooklin	Blackwell Science Publication, London	1991
Pattern Grading for womens' Clothiing	Gerry Cooklin	Blackwell Science Publication, London	2004
Step by Step Dress Making course	Leela Aitken	BBC Books, London	1992

CAD IN GARMENT TECHNOLOGY -I

Subject Code 2052404	Theory			No of Period in one session : 50			Credits
	No. of Periods Per Week			Full Marks	:	100	3
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
				CT	:	20	

Contents (Theory)			Hrs/week	Marks
UNIT-1	**MS PAINT**		[10]	
	01.01	Tools variations, Menu bar, Screen Elements, Tools Line, Curve Line, Rectangular, Ellipse, Freehand, Select Tool, eraser Tool, Pick Colour Tool, Magnifier Tool, Paint Bucket, Text, Polygon, Air Brush, Preference Tool.		
	01.02	Commands: Page setup, Undo, Cut, Copy, Paste, Clear Selection, Select All, Color Box, Status Bar, Zoom, Flip/Rotate, Strech/Skew.		
UNIT-2	**COREL DRAW**		[10]	
	02.01	Introduction, Content of Menu Bar, Tools Variation. Screen Elements/Tools Pick Tools, Shape Tools, Pencil Tools, Rectangle, Ellipse, Fill, Outline, Text.		
	02.02	Commands: Cut, Copy, Paste, Convert to curve, Trim, Weld, Group, Ungroup, Combine, Break a Part, Texture, Grid, Guide Line, Transform, Roll Up, Extrude, Rollup, Lens Rollup, prespective Roll Up.		
UNIT-3	**ADOBE PHOTOSHOP**		[10]	
	03.01	Opening Documents, Understanding image resolution, Importing images. Drawing and Painting Tools: Choosing colours, Drawing Tools, Gradient Tools, Shape Tools, Transform Tools.		
	03.02	Creation of Pattern. Creation of Layer. Creation and manipulation of text. Image editing using PhotoShop		
UNIT-4	**2D Pattern Making**		[10]	
	04.01	2D pattern making, Pattern alteration, Grading, Block fusing, Marker making, NC cut path optimizations, Plaid matching, Digital print block for sample cutting, Material spreading, Colour separation, repeats, Colour ways, Weaves, Knits, Jaquards, story boards, Types of notches, Darts, Pleats, Seams, Drill holes, Internal Colour.		
UNIT-5	**Lastest Pattern Making Software:**		[10]	
	05.01	Drarting and Pattern making- Marker making(layout) using Tukatech, Gerber, Magnum, Lectra or any other latest similar software		
		TOTAL	50	

Books Recommended:-

1. Coreldraw X4 (Lawpoint Publications)
2. Rapidex DTP Course (Shirish Chavan)
3. Alison Beazley, Terry Bond Computer Aided Pattern Design and Product Development, Black Well Publishing.
4. Software Manuals provided by Software Supplier

NONWOVEN & KNITTING

Subject Code 2052405A	Theory						Credits
	No. of Periods Per Week			Full Marks	:	100	03
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
	—	—	—	CT	:	20	

UNIT	CONTENTS (Theory)	Hrs/Week	Marks
	Section I		
UNIT-1	**Introduction to Nonwovens** Introduction, definition, Properties, Classification of Nonwovens Raw-materials fibres, binding agents.	2	
UNIT-2	**Web Formation Techniques** Parallel laid webs, Cross laid webs, Random laid webs, Air laid webs.	4	
UNIT-3	**Web Bonding Techniques** **Thermal bonding** – Hot calendaring – area bonding, point bonding and Embossing, Belt Calendering, through air, Ultrasonic bonding. **Chemical (Adhesive) bonding** – Bonding Process, bonding methods - Saturation, Foam, Spray, Print and powder bonding and applications. **Spun-bonding** – Principles, Physical properties of spun-bonded fabrics. **Spunlace nonwovens (Hydroentanglement)** – Process, Properties of spun-lace fabrics, Applications. **Melt-blown nonwovens** –Properties and Applications.	9	
UNIT-4	**Needle Punched Nonwovens** Needle Punching looms – up-punching, Down Punching, Single needle board, Multi-board. Needling Parameters, Needle Board parameters, Needle type and specifications. Production techniques – Continuous, Off-line final needling, Factors affecting production Major applications: Floor covering, Domestic Blankets, Industrial belts.	6	
UNIT-5	**Finishing of Nonwovens** **Dry Finishing** – Shrinkage, Wrenching, Creeping, Crabbing, Calendering and Crabbing, Splitting, Singeing **Wet Finishing** – Washing, Dyeing, Printing **Chemical Finishes** – Antistats, Antimicrobials, Water repellents, UV absorbers, Flame retardants, Absorbency and rewetters, Soil-release. Nonwoven defects.	5	
	Section II		
UNIT-6	**Introduction to Knitting** **Introduction:** Properties of Knitted Fabrics, Comparison of woven and knitted, Terms and Definitions, Classification of Warp and Weft knitting machines, Comparison of Warp and Weft knitting. **Knitting Needle Types:** Needle Types - Latch needle, Bearded Needle, Compound needle, Advantages and disadvantages of different needles.	5	
UNIT-7	**Weft Knitting Structures** **Weft Knit Structures:** Symbolic representation, Features and Properties of Plain Single Jersey, Rib-, Interlock and Purl knit structure. **Designing of Weft Knit Structures:** Ornamentation of Plain-knit Fabrics. Derivatives of plain knit (Single Jersey) – Knit and float, knit and tuck, knit, float	5	

	and tuck.		
UNIT-8	**Weft Knitting Machines** **Weft Knitting Machines** **Plain Single Jersey knitting machine** – Knitting Elements - Cams, Cylinder, Feed yarn carriers, Take-up mechanisms; Operation Cycle – Clearing, Feeding, Knitting Position. **Circular Rib knitting machine** – Operation Cycle – Rest, Clearing, Feeding, Knitting Position. **Circular Interlock knitting machine**– Operation Cycle. **Purl knitting machine** – Operation Cycle.	8	
UNIT-9	**Warp Knitting Machines** **Warp Knitting Machines:** Classification –Tricot Machine, Raschel Machine – Main Parts, Knitting elements, Knitting cycle, Comparison of Tricot and Raschel Machines and Fabrics.	4	
UNIT-10	**Fabric Defects** **Fabric Defects:** Warp and Weft knit Production calculation	2	
	Total	**50**	

Learning Resources:-

Text Books:

1 Introduction to Nonwovens Technology. By Subhash K. Batra, Nonwovens Cooperative Research Center, North Carolina State University
2 Needle-punching – A. T. Purdy, Textile Institute, Monograph series No. 3
3 Knitting Technology – Prof. D. B. Ajgaonkar
4 Knitting – By Anbumani

References:

1 Handbook of nonwovens, Woodhead Publishing
2 Nonwoven Bonded fabrics, J. Lunenschloss & W Albrecht, John Wiley & sons
3 Knitting Technology by Marks and Spencer.

INDIAN AND WESTERN COSTUME

Subject Code	Theory						Credits
2052405B	No. of Periods Per Week			Full Marks	:	100	03
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
	—	—	—	CT	:	20	

CONTENTS ; THEORY

	Name of the Topics	Hrs/week	Marks
Unit -1	**INTRODUCTION TO COSTUMES** • Origin of clothing –dress out of painting, cutting and other methods- Growth of dress, Need for clothing- factors influencing costume changes- role of costumes as a status symbol, sex appeal, fashion and seasons.	**10**	
Unit -2	**COSTUMES OF ANCIENT WORLD** • Pre-historic period- discussions on costumes- Sumerian costumes- Cloak- Kaunakas- outer garments- Roman costumes- Tunic- Toga- Stola- Palla- Byzantine costumes- Cloaks- Hose- Pallium- Brief study of costumes on Socio-political and economic point of view- study on colour combinations- view on society reflections.	**10**	
Unit – 3	**COSTUMES OF WESTERN COUNTRIES** • Costumes of Ancient Western Civilization – Egypt, Roman, English, French empires during Renaissance 1500 – 1600 A.D. Jewellery of the period – color combination- Materials – Accessories. Brief study of costumes on Socio-political and economic point of view.	**10**	
Unit – 4	**TRADITIONAL COSTUMES OF INDIA** • Costumes of India, History of Indian Costumes up to Mughal Period, Traditional Costumes of different states in India. Accessories and Garments used in India. Study of Dacca Muslin, Jandhani, Himrus & Amrus Carpets, Kashmir Shawls, Kanchipuram & Baluchari Sarees, Paithani sarees, Bandhani, Patola, Ikat, Kalamkari and other styles of Printing & Dyeing Textiles.	**10**	
Unit – 5	**COSTUMES OF MODERN WORLD** • Costumes of 20th century-factors influencing on costume changes –Study on Business Wears- Evening dress- Sleep wear- Religious wear- Seasonal wear - Specialized wears- Bridal wear – Sportswear- Industrial wear- Party wear- Brief study of costumes on Socio-political and economic point of view- study on colour combinations.	**10**	
	Total	**50**	

Text/ Reference Books:-

Title	Author	Publisher	Year
Historic Costumes	Lester K.I.	Chas A Bennet & Co	**1991**
Costume & Fashion	Laver J	Thames & Hudson	**1997**
Costume & Fashion	Jack Cassin - Scott	Brockhampton press, London	**1999**
Costumes of India & Pakistan	Das S N		**1984**
Indian Costume	G.S Ghurye	Popular Prakasham	**1987**
History of Fashion	Garland		**2001**
The encyclopaedia of Fashion	Georgina 'O' Hara		**2002**
Fashion in western world	Yarwood Doreep		**2002**
Costume, Textiles and Jewellery of India	Vandana Bhenderi	Prakash Books, New Delhi, 2004.	

GARMENT MACHINERY & EQUIPMENT

Subject Code	Theory			No of Period in one session : 48			Credits
2052305C	No. of Periods Per Week			Full Marks	:	100	3
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
				CT	:	20	

UNIT	CONTENTS (Theory)	Hrs/Week	Marks
UNIT-1	**BASIC MECHANICAL ENGINEERING** Transmission of Motion and Power: Types of belt drives and its advantages. Gear drive – Classification of Gear drives and its advantages. (Spur, Bevel, Helical and Worm Gear) Cams – definition –Types of Cams. Clutch – Functions of clutch – Principle and working of single plate friction Clutch with diagram. Brakes – Principle & working of Hydraulic Brake with diagram. Bearings – Type and importance. Lubrications – Purpose – types such as Liquid, Semi-liquid & Solid. Lubrication Systems – Gravity circulation System, Pressure circulating systems with diagram.	10	
UNIT-2	**BASIC SEWING MACHINES** Single needle Lock stitch machines - Parts and Functions – Timed sequence in stitch formation in single needle lock stitch machine – Needle bar mechanism with diagram - Brief study of Shuttle and Hook mechanism with diagram - Study of thread tension variation and its adjustment in needle and Bobbin - Different types of needles and Needle Number - Selection of needle and thread. Different types of sewing machine bed and its features.	10	
UNIT-3	**SPECIAL MACHINES** Merits of Computerized sewing machine - Different types of Feed mechanism in sewing machine. Threading Procedures with diagram – 3 threads over lock - Flat lock Machine (5 Thread). Brief Study of Button hole & Button Stitch Machines – Elastic tape Stitch Machine – Collar turner - Feed-Off-Arm machine – Chain Stitch Machine – Bar Tacking machine – Blind stitch Machine – Zig Zag machines – Computerized embroidery machine – Thread sucking machine - needle detector.	10	
UNIT-4	**ATTACHMENTS AND CUTTING MACHINE** Brief study of Hemmer Foot, Cording Foot, Piping Foot, Quilter & Guide Foot with diagram. Brief study of special attachments and uses. Brief study of Folders, Binders & Guides. Objectives of Spreading – Requirements of Spreading table – Spreading types - Brief study of automatic spreading machine. Types of Cutting machines – Straight Knife, Band Knife, Round knife, Die Cutting and Laser Cutting. Brief study about Computerized cutting machine.	10	
UNIT-5	**FINISHING MACHINES & MAINTENANCE** Fusing – Elements of fusing - Types of Fusing machine and working of continuous fusing machine with diagram. Garment finishing – Process flow chart of garment finishing - Principles of Pressing – objective of pressing – Equipments for pressing - Spotting process – Universal finishers – Shirt finishers - form finishers - tunnel finishers – Garment folding machine. Maintenance of Machines – Maintenance Schedule in Garment Units.	10	
	Total	**50**	**70**

Text/ Reference Books: -

Title	Author	Publisher	Year
Mechanical Technology	V Sivarajan	V K Pub. Bangalore	2002
Theory of Machines	S S Rattan	Tata Mc GRAW – Hill Pub. Co .Ltd. New Delhi-110033	1996
Text book of Electrical Technology	B L Theraja A K Theraja	S. Chand & Co. New Delhi	2002
Essentials of Electricity	K C Graham	D B Tarapore wala Mumbai	
Technology of Clothing Manufacture	Carr & Lathem	Blackwell Sci.Pub New 54ork	2014
Introduction to Clothing Manufacture	Gerry Cooklin	Blackwell Sci.Pub New 54ork	2015
Theory of Machines	P L Ballaney	Kanna Pub., Delhi.	1980
Complete Guide to Sewing		Readers Digest.	1999
The complete book of sewing	Dorling Kindersley	London	1999
A Text book of Machine Design	R S Khurmi J K Gupta	Eurasia Pub., New Delhi	1998

LEATHER GARMENT CONSTRUCTION

Subject Code	Theory			No of Period in one session : 48			Credits
2052305D	No. of Periods Per Week			Full Marks	:	100	3
	L	T	P/S	ESE	:	70	
	03	—	—	TA	:	10	
				CT	:	20	

UNIT	CONTENTS (Theory)	Hrs/Week	Marks
UNIT-1	**INTRODUCTION :** • Classification of leather garment based on material design usage and fashion. • Choice of leather kind for various type of garment and their parts. • Types of lining and padding material • Types of fasteners and gaindries.	10	
UNIT-2	**PATTERN MAKING :** • Block pattern development front size charts and specifications. • Three-Dimensional development via darts and seam lines. • Princess line blocks and development of flair. • Types of collars, sleeves, pocket and pleasts, etc. • Techniques of leather cutting. • Effective placement of pattern to minimise of leather waste • Cutting room practice - ie. sorting, selecting and cutting. • Development of leather cutting skills. • Silhauette development and hole setting. • Complex style readings and proportion judgment. • Mens wear pattern cutting for tailored jackets and coats ie. SB., DB. etc. and trousers. • Childern wear pattern cutting for variety of smart and casual styles. • Leather fitted garments for evening wear.	13	
UNIT-3	**GARMENT FABRICATION:** • Machinery: Control, Theading, Adjustments. • Garment Assembly Sequences. • Types of Threads, Needles, stitch and Seam. • Fusible and non-fusible inter linings. • Adhesives. • Techniques of sleeves and collar and hood setting. • Making specific garment. • Garment Specification. • Recovery waste and its utilisation in fabrication various small items of fashion and utility such as HandGloves, HeadWears, Covers for Key bunch, spectacles and Purses, etc to name a few.	12	
UNIT-4	**EQUIPMENT AND MACHINERY:** Study of sewing machines including needle feed types, cutting machines, Button hole and button stitching machines, Ironing press, Heat tools - Cutting measuring marking, etc. special features furiniture and layouts. Dummies for checking fittings.	12	
UNIT-5	**STANDARDS** Collection of designs, professional standards of cut and fits and interpretation of the range.	3	
	Total	**50**	**70**

Text/ Reference Books: -

Title	Author	Publisher	Year
Leather Goods Design, Manufacturing & Quality Book	Terefe Alemu (Author), Melkamu Meseret	LAP LAMBERT Academic Publishing	2018
Modern Concept of Leather and Footwear Manufacturing	R.D SINGH	Invincible Publishers; First Edition	2017

GARMENT CONSTRUCTION LAB-I

Subject Code 2052406	Practical			No of Period in one session : 32			Credits
	No. of Periods Per Week			Full Marks	:	50	1
	L	T	P/S	Internal (PA)	:	15	
	—	—	02	External (ESE)	:	35	

Contents (Practical)		
Unit-1	01.01	Using the paper pattern cut, stitch and finish the Garment - Pilch Knicker.
	01.02	Using the paper pattern cut, stitch and finish the Garment – Zabala.
	01.03	Using the paper pattern cut, stitch and finish the Garment – Bloomer.
	01.04	Using the paper pattern cut, stitch and finish the Garment – A Line frock.
	01.05	Using the paper pattern cut, stitch and finish the Garment – Yoke Frock.
	01.06	Using the paper pattern cut, stitch and finish the Garment - Umbrella Frock.
	01.07	Using the paper pattern cut, stitch and finish the Garment – Pinna fore.
	01.08	Using the paper pattern cut, stitch and finish the Garment – T shirt
	01.09	Using the paper pattern cut, stitch and finish the Garment – Boys Shorts.
	01.10	Using the paper pattern cut, stitch and finish the Garment – Pyjama.
	01.11	Using the paper pattern cut, stitch and finish the Garment – Salwar
	01.12	Using the paper pattern cut, stitch and finish the Garment – Kameez.

TEXTILE CHEMICAL PROCESSING LAB

Subject Code 2052407	Practical			No of Period in one session : 60			Credits
	No. of Periods Per Week			Full Marks	:	50	2
	L	T	P/S	Internal (PA)	:	15	
	—	—	04	External (ESE)	:	35	

Contents (|Practical)			Hrs/week	Marks
UNIT-1	01.01	Experimental Desizing of cotton and other important textile fabrics.	(03)	
	01.02	Experimental Scouring of cotton, Wool, silk and other important textile fibres, yarns and fabrics.	(03)	
	01.03	Experimental Bleaching of cotton, Wool, silk and other important textile fibres, yarns and fabrics.	(03)	
	01.04	Dying of three shades with direct dyes on cotton (0.5%, 0.8%, 1.2%, 1.5 %,)	(03)	
	01.05	Dying of three shades with basic dyes on cotton (0.5%, 1%, 1.3%, 1.5 %,)	(03)	
	01.06	Dying of three shades with Reactive dyes on cotton (0.5%, 1%, 1.3%, 1.5 %,)	(03)	
	01.07	Dying of three shades with basic dyes on silk, wool, (0.5%, 1.2%, 1.5%, 1.8 %,)	(03)	
	01.08	Dying of three shades with acid dyes on wool, silk (0.5%, 0.8%, 1.2%, 1.5 %,)	(03)	
	01.09	Dying of three shades with Sulphur dyes on cotton (0.5%, 0.8%, 1.2%, 1.5 %,)	(03)	
	01.10	Dyeing of Polyster fibre with Disperse dyes (4 Sample of different shade 0.8%, 1%, 1.2%, 1.5%).	(03)	
	01.11	Dyeing of Polyamide fibre with Disperse dyes (4 Sample of different shade 0.5%, 0.8%, 1.2%, 1.5%).	(03)	
	01.12	Dyeing of Polyamide fibre with Acid dyes (4 Sample of different shade 0.8%, 1.0%, 1.2%, 1.5%).	(03)	
	01.13	Dyeing of Acrylic fibre with Basic dyes (3 Sample of different shade 0.5%, 1.2%, 1.5%).	(06)	
	01.14	Practice of block printing on paper and fabrics (cotton, silk)	(06)	
	01.15	Study the screen-printing constituents - screen table, screen, exposing unit, washing tray	(06)	
	01.16	Study the Roller printing machines and practice of them on fabric (cotton, silk)	(06)	
		Total	**60**	

CAD IN GARMENT TECHNOLOGY LAB -I

Subject Code	Term Work			No of Period in one session : 60			Credits
	No. of Periods Per Week			Full Marks	:	50	
2052408	L	T	P/S	Internal (PA)	:	15	2
	—	—	04	External (ESE)	:	35	

Contents (Practical)			Hrs/week	Marks
UNIT-1	01.01	Introduction to Software tools in MS Paint, Tools variations, Menubar Tools	(03)	
	01.02	Free hand drawing, developing motifs using MS paint.	(06)	
	01.03	Developing Block Figure, Flashing, Drafting using Coral draw	(06)	
	01.04	Introduction to Software tools, Drafting, Tools Variations, Freehand Sketching using Coral draw	(06)	
	01.05	Drapping of Draping of bodice block using Corel draw	(06)	
	01.06	Developing motifs using coral draw.	(06)	
	01.07	Introduction to Software tools in adobe photoshop	(06)	
	01.08	Draping of bodice block and editing scanned images in Photoshop.	(03)	
	01.09	Developing motifs using coral draw and adobe Photoshop.	(03)	
	01.10	Developing weave patterns for dobby weave	(03)	
	01.11	Developing motifs for embroidery and cross stitch	(03)	
	01.12	Developing patterns for pattern making and grading	(09)	
		Total	**60**	

GARMENT PRODUCTION MACHINERY & MANAGEMENT (TW)

Subject Code	Term Work			No of Period in one session : 32			Credits
	No. of Periods Per Week			Full Marks	:	25	
2028409	L	T	P/S	Internal (PA)	:	07	1
	—	—	02	External (ESE)	:	18	

Contents (Term Work)			Hrs/week	Marks
	01.01	Operation, Cleaning, Lubricating and adjustment of sewing machine.	(06)	
	01.02	Operation, cleaning, lubircation and adjustments of overlock machine.	(06)	
	01.03	Operation, cleaning, lubrication and adjustments of button hole stitching machine.	(04)	
	01.04	Operation, cleaning, lubrication and adjustments of button stitch machine.	(04)	
	01.05	Operation, cleaning, lubrication and adjustments of double needle machine.	(06)	
	01.06	Operation, cleaning, lubrication and adjustments of zig zag machine.	(06)	
	01.07	Operation, cleaning, lubrication and adjustments of Bar tacking machine.	(06)	
	01.08	Operation cleaning lubrication and adjustments of arm stitching machine.	(06)	
	01.09	Planning number of machine for a manufacturing line for men's wear	(06)	
		Total	**50**	

PATTERN & DESIGN DEVELOPMENT (TW)

Subject Code 2028410	Term Work			No of Period in one session: 32			Credits
	No. of Periods Per Week			Full Marks	:	25	1
	L	T	P/S	Internal (PA)	:	07	
	—	—	02	External (ESE)	:	18	

Contents (Term Work)		
	01.01	Prepare the paper pattern and calculate fabric consumption for the Garment – Piltch nicker
	01.02	Prepare the paper pattern and calculate fabric consumption for the Garment – Zabla.
	01.03	Prepare the paper pattern and calculate fabric consumption for the Garment – Bloomer.
	01.04	Prepare the paper pattern and calculate fabric consumption for the Garment – A-Line frock.
	01.05	Prepare the paper pattern and calculate fabric consumption for the Garment – Yoke Frock.
	01.06	Prepare the paper pattern for the Garment – Umbrella Frock.
	01.07	Prepare the paper pattern for the Garment – Pinna fore.
	01.08	Prepare the paper pattern for the Garment – T shirt.
	01.09	Prepare the paper pattern for the Garment – Boys Shorts.
	01.10	Prepare the paper pattern for the Garment – Pyjama.
	01.11	Prepare the paper pattern for the Garment – Modern Salwar.
	01.12	Prepare the paper pattern for the Garment – Kameez.