

B. Sc. Apparel Manufacturing & Merchandising

Syllabus

AFFILIATED COLLEGES

Program Code:26P

2022 – 2023 onwards

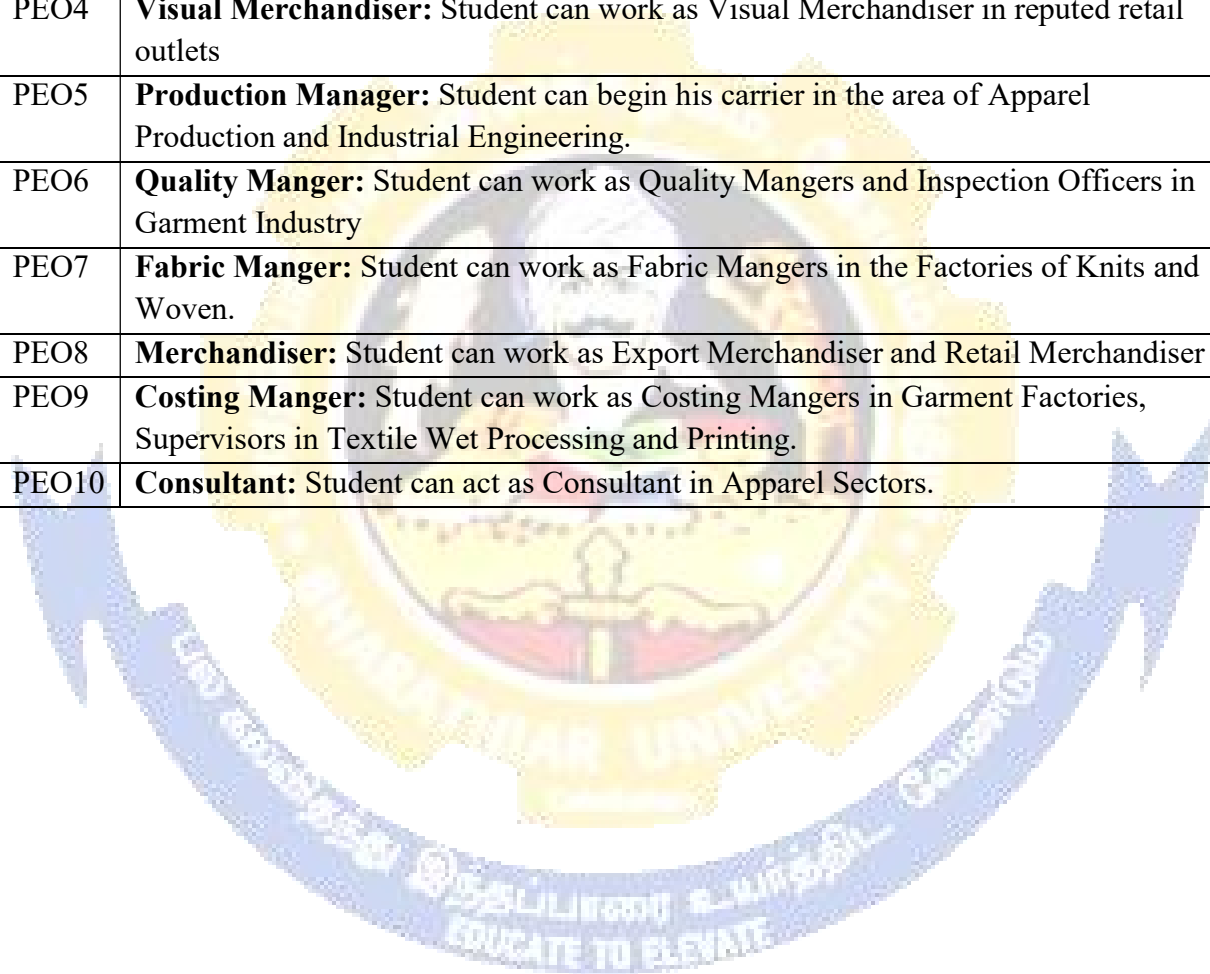


BHARATHIAR UNIVERSITY

(A State University, Accredited with “A” Grade by NAAC,
Ranked 13th among Indian Universities by MHRD-NIRF,
World Ranking: Times -801-1000, Shanghai -901-1000, URAP - 982)

Coimbatore - 641 046, Tamil Nadu, India

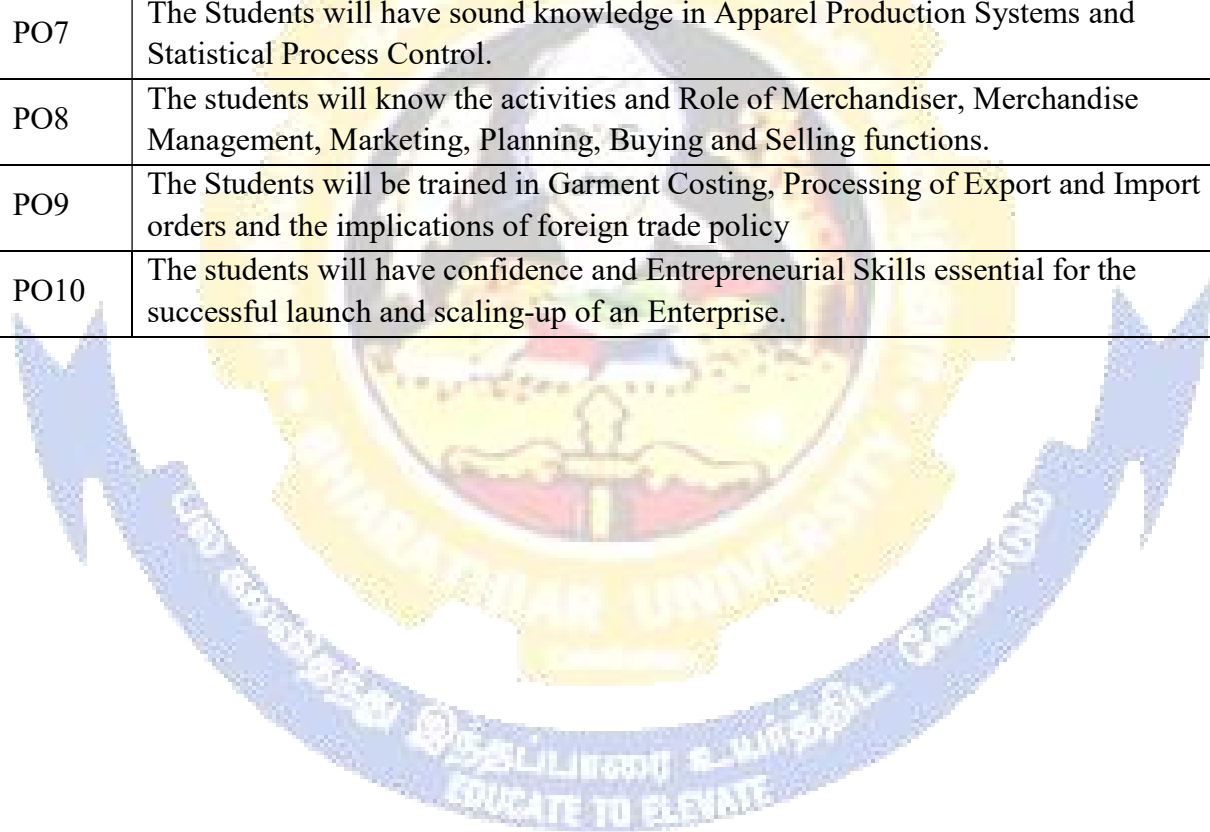
Program Educational Objectives (PEOs)	
The B.Sc (Apparel Manufacturing and Merchandising) program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	Manufacturer and Merchandiser: The student can excel in the field of Manufacturing and Merchandising after the completion of the Program.
PEO2	Brand Management: The Student can develop his own brands in Apparel Sector.
PEO3	Entrepreneur: Start- Up of An Entrepreneur with potential is possible with new ideas towards Apparel Industry.
PEO4	Visual Merchandiser: Student can work as Visual Merchandiser in reputed retail outlets
PEO5	Production Manager: Student can begin his carrier in the area of Apparel Production and Industrial Engineering.
PEO6	Quality Manger: Student can work as Quality Mangers and Inspection Officers in Garment Industry
PEO7	Fabric Manger: Student can work as Fabric Mangers in the Factories of Knits and Woven.
PEO8	Merchandiser: Student can work as Export Merchandiser and Retail Merchandiser
PEO9	Costing Manger: Student can work as Costing Mangers in Garment Factories, Supervisors in Textile Wet Processing and Printing.
PEO10	Consultant: Student can act as Consultant in Apparel Sectors.



Program Specific Outcomes (PSOs)	
After the successful completion of B.Sc (Apparel Manufacturing and Merchandising) program, the students are expected to	
PSO1	The students have to learn Basic of Textiles such as Fibres and Yarns.
PSO2	The students are expertise in the area of Knitting and Weaving.
PSO3	The students are proficiency in the area of Dyeing and Printing.
PSO4	The students are skilled in the area of Textile Testing and Quality Control
PSO5	The Students are Capable of developing variety of Manual Pattern.
PSO6	The Students can extend Pattern in CAD Software's.
PSO7	The Students should be enriched knowledge in Sewing Techniques.
PSO8	The Students must be talented in Merchandising Skills, Costing, Production Planning and Programming.
PSO9	The students will have a clear idea towards Start- Up of an Enterprise.
PSO10	The Students ought to Export Sampling and New Product development.



Program Outcomes (POs)	
On successful completion of the B.Sc (Apparel Manufacturing and Merchandising) program	
PO1	The Student will be thorough in the Molecular conformations of textile fibers and Yarns.
PO2	The Students will be skilled in the Principles of Knitting and Weaving.
PO3	The Students will be strong in Fabric Production, defectiveness of the fabrics and their causes and remedies.
PO4	The Students will be skilled in the Dyeing and Printing Process.
PO5	The Students will recognize and understand ethical issues related to the accounting profession and to Prepare financial statements.
PO6	The Students will be capable in Quality parameters of Textile Testing.
PO7	The Students will have sound knowledge in Apparel Production Systems and Statistical Process Control.
PO8	The students will know the activities and Role of Merchandiser, Merchandise Management, Marketing, Planning, Buying and Selling functions.
PO9	The Students will be trained in Garment Costing, Processing of Export and Import orders and the implications of foreign trade policy
PO10	The students will have confidence and Entrepreneurial Skills essential for the successful launch and scaling-up of an Enterprise.



BHARATHIAR UNIVERSITY: COIMBATORE 641 046
B.Sc. APPAREL MANUFACTURING AND MERCHANDISING CURRICULUM

(For the students admitted from the academic year 2022-2023 and onwards)

Scheme of Examination

Part	Title of the Course	Hours/ Week	Examination				Credits
			Duration in Hours	Maximum Marks			
				CIA	ESE	Total	
	Semester I						
I	Language I	6	3	50	50	100	4
II	English I	6	3	50	50	100	4
III	Core Paper I - Textile Fibres and Yarns	4	3	50	50	100	4
III	Core Paper II - Knitting Technology	4	3	50	50	100	4
III	Core Practical I - Knitting Technology Practical	4	3	50	50	100	4
III	Allied Paper I - Computer Application Practical	4	3	30	45	75	3
IV	Environmental Studies *	2	3	-	50	50	2
Total		30	-	280	345	625	25
	Semester II						
I	Language II	6	3	50	50	100	4
II	English II	4	3	25	25	50#	2
	Naan Mudhalvan Skill Course - Language Proficiency for employability- Effective English	2	-	25	25	50 \$	2
	http://kb.naanmudhalvan.in/Special:Filepath/Cambridge_Course_Details.pdf						
III	Core Paper III - Woven Fabrics and Designs	4	3	50	50	100	4
III	Core Paper IV - Pattern Making and Grading	4	3	30	45	75	3
III	Core Practical II - Pattern Making	5	3	30	45	75	3
III	Allied Paper II - Woven Fabric Analysis and Designing Practical	3	3	30	45	75	3
IV	Value Education – Human Rights*	2	3	-	50	50	2
Total		30	-	240	335	575	23
	Semester III						
III	Language III	4	3	50	50	100	4
III	English III	4	3	50	50	100	4
III	Core Paper V – Apparel manufacturing technology	4	3	30	45	75	3
III	Core Paper VI - Textile Wet Processing	4	3	30	45	75	3
III	Skill based Subject I- Practical III – Garment Construction I	6	3	30	45	75	3

IV	Allied Paper III - Textile Wet Processing- Practical	6	4	30	45	75	3
IV	Tamil** / Advanced Tamil* (OR) Nonmajor elective - I (Yoga for Human Excellence)* / Women's Rights*	2	3	-	50	50	2
IV	Naan Mudhalvan Skill Course – Digital skills for employability	-	-	25	75	100	2
Total		30	-	245	405	650	24
	Semester IV						
III	Language IV	4	3	50	50	100	4
III	English IV	4	3	50	50	100	4
III	Core Paper VII - Textile Testing and Quality Assurance	4	3	30	45	75	3
III	Core Paper IX - Apparel Merchandising I	4	3	30	45	75	3
III	Core Practical V – Garment Construction II	5	4	25	25	50	2
III	Allied Paper IV - Textile Testing Practical	5	4	30	45	75	3
IV	Tamil**/Advanced Tamil* (OR) Nonmajor elective -II (General Awareness*)	2	3	-	50	50	2
	Naan Mudhalvan Skill Course – Digital skills for employability- Office Fundamentals	2	-	25	25	50	2
	http://kb.naanmudhalvan.in/Special:FilePath/Microsoft_Course_Details.xlsx						
Total		30	-	225	335	575	23
	Semester V						
III	Core Paper X - Apparel Production Management	4	3	50	50	100	4
III	Core Paper XI - Apparel Merchandising II	4	3	30	45	75	3
III	Core Paper XII - Total Quality Management	4	3	30	45	75	3
III	Core Paper XIII - Garment Costing	4	3	50	50	100	4
III	Core Practical VI- Computer Aided Designing	5	4	30	45	75	3
III	Elective I	4	3	50	50	100	4
IV	Skill Based Subject III - Export Sampling and Product Development Project #	5	-	30	45	75	3
IV	Naan Mudhalvan Skill Course :Marketing and Design Tools	-	-	25	75	100	2
Total		30	-	265	435	700	26

	Semester VI						
III	Core Paper XIV - International Trade and Documentation	4	3	30	45	75	3
III	Core Paper XV - Apparel Retailing	4	3	50	50	100	4
III	Core Paper XVI - Entrepreneurship and Small Business Development	4	3	30	45	75	3
III	Elective II	4	3	50	50	100	4
III	Elective III	4	3	50	50	100	4
IV	Skill based Subject IV – Project #	10	-	30	45	75	3
V	Extension Activities **	-	-	-	50	50	2
	Naan Mudhalvan Skill Course : Employability readiness-Naandi / Unmati/ Quest / Izapy / IBM Skill Build	-	-	-	-	-	-
	Total	30	-	210	365	575	23
	Grand Total	180	-	1495	2205	3700	144

CIA – Continuous Internal Assessment

CEE – Comprehensive External Examination

* No Continuous Internal Assessment (CIA). Only University Examinations.

** No University Examinations. Only Continuous Internal Assessment (CIA)

#Mark Division for Project / Viva Voce

Paper title	Total Marks	CIA	CEE	
			Evaluation	Viva-voce
Skill Based Subject III - Export Sampling and Product Development Project	75	30	30	15
Skill based Subject IV – Project	75	30	30	15

Additional Credit Course

Earning Additional credit course is not mandatory for Programme Completion.

Prescribed courses under UGC – SWAYAM/ MOOCS/ NPTEL will be available for the affiliated colleges, as an optional.

List of Elective papers (Colleges can choose any one of the paper as electives)		
Elective – I	A	Fashion and Apparel Marketing.
	B	Business Communication.
	C	Clothing Care.
Elective – II	A	Research Methods.
	B	Industrial Engineering Techniques.
	C	Eco Textiles.
Elective – III	A	ERP in Apparel Industry.
	B	Intimate Apparel Manufacturing Techniques.
	C	Apparel Brand Management.

A large purple scroll graphic with a white outline. The scroll is unrolled, showing a white background in the center. The text "First Semester" is written in white on the purple background. There are decorative elements: a white scroll edge at the top left, a white scroll edge at the bottom left, a yellow rectangular tag on the left side, and two blue wavy arrows pointing outwards from the left and right sides.

First Semester

Course Code	13A	TEXTILE FIBRES AND YARNS	L	T	P	C
Core		Paper I	4	-	-	4
Pre-requisite		Basic Knowledge in Textiles and Science	Syllabus Version		2020 – 2021	
Course Objectives:						
The main objectives of this course are to:						
1. To Facilitate the students to understand the structural features of Fibres and Yarn.						
2. To Investigation techniques of textile fibres and yarn with its manufacturing Process.						
3. To Learn the Properties and behaviour of Fibres and Yarn.						
4. To Gain knowledge in Advanced Spinning System.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the molecular conformations of many textile fibres.					K1
2	Understand the new process of textile fibres and yarns.					K2
3	Apply the uses of Fibres and Yarns in Textile Industry.					K3
4	Analyze the structural investigations techniques of Fibres and Yarn.					K4
5	Understand the Physical and Chemical Properties and behaviour of textile fibres and Yarns.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Introduction of Textile Fibers				14 – hours	
Introduction of textile fibres: Classification - Physical and chemical properties. Cotton: Botanical and commercial classification - Properties - End uses. Brief study about Organic cotton Flax: Properties - End uses. Brief study about organic cotton. Wool: Producing countries - Grading - Properties - End uses - Felting –Woollen and Worsted Yarns. Silk: Producing countries – Degumming – Weighting– Properties - End uses. Brief study on wild silk varieties.						
Unit:2	Filament Spinning System				10 – hours	
Methods of filament spinning. Semi synthetic fibres: Regenerated and modified cellulose - Viscose rayon process flow - HWM fibres - End uses –Brief study of Bamboo, Lyocell, Soya bean fibres.						
Unit:3	Polymer Science				11—hours	
Polymer – Terminologies – Types of polymers & Polymerization. Synthetic fibres: Brief study about Polyamide, Polyester, Poly Acrylic, and Spandex. Individual fibre properties and trade names – End uses. Drawing and effects. Texturisation: definition, types, properties of textured yarn-its uses. Micro fibres.						
Unit:4	Yarn Production Process				12—hours	
Classification of yarn types- Staple spinning system – Types. Yarn manufacturing Process:						

Ginning- objectives, Objectives and process sequence –Blow room, carding, Drawing, combing, simplex, ring frame, Comparison of carded and combed yarn. Principles and process sequence - Rotor spinning, Compact Spinning.		
Unit:5	Post Yarn Process	13—hours
Post spinning process: cone winding, Doubling, reeling- Ply yarn and single yarn Characteristics. Properties required for export quality hosiery yarns. Study of yarn twist and its importance — Various yarn & package defects. Yarn numbering systems. Blended textiles: Types of blending – Benefits – Double yarn - Properties –Uses. Classification of Sewing threads & applications – core spun sewing thread – Advantages.		
	Total Lecture hours	60 – hours
Text Book(s)		
1	A Text Book of Fibre Science and Technology, Mishra, S.P, New Age International (P) Ltd Publishers, New Delhi 2000.	
2	Spun Yarn Technology, Eric Oxtoby, Butterworth-Heinemann, Published in 1987.	
3	The Motivate Series – Textiles, Wynne, A, Publisher : Macmillan Education Ltd., London, 1997.	
Reference Books		
1	Hand Book of Textile Fibres – Vol. I & Vol. II. Gordon Cook, J, Wood Head Publishing Ltd., Cambridge, England, 1984.	
2	Man-made Fibres, Moncrieff, W, Butterworth Scientific Publication, 1975.	
3	Handbook of Textile Fibres: Natural Fibres, J Gordon Cook , Woodhead publication Limited, 1984.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://textilelearner.blogspot.com/	
2	https://www.textiletoday.com.bd/category/innovations/fiber-yarn-fabric/	
3	https://study.com/academy/lesson/textile-yarns-definition-types-classification.html	
Course Designed By: Mrs.D.Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	L	M	M	M	L	S
CO2	S	S	M	M	M	S	M	M	M	S
CO3	S	S	S	S	M	S	M	M	M	S
CO4	S	S	S	S	M	S	M	M	M	S
CO5	S	S	M	M	L	S	M	M	M	S

*S-Strong; M-Medium; L-Low

Course Code	13B	KNITTING TECHNOLOGY	L	T	P	C
Core		Paper II	4	-	-	4
Pre-requisite		Basic Knowledge in Fabric Science	Syllabus Version		2020 – 2021	
Course Objectives:						
The main objectives of this course are to:						
1. To Make the students to understand about the Fundamentals of knitting.						
2. To Enrich the Types of knitting processes in detail.						
3. To Analyse the Functioning of components of knitting machine.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember about the Principle of knitting.					K1
2	Understand the different types of knitting machines.					K2
3	Apply the Structure of fabric produced by different knitting machines.					K3
4	Analyze the properties of fabric produced by different knitting machines.					K4
5	Understand the types of knitting machines.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1						
Introduction to Knitting			13—hours			
Different fabric forming methods-Comparison of weaving and knitting-Principles of weft and warp knitting – Comparison of weft and warp knitting – Classification of knitting machines - Yarn passage diagram of a circular knitting machine – Knitting machine elements and description - Knitting cycle of latch needle with sinker. .						
Unit:2						
Description of Knitting			12—hours			
Knitting terms and definitions - Principal weft knit stitches - Knit, tuck and miss stitch formation and properties - Representation of weft knit stitches – Study of Basic weft knit structures - Needle gating - Description of circular Rib & Interlock knitting machine – Characteristics of basic weft knit structures – Circular knitting GSM and production calculations.						
Unit:3						
Types of Knitted Fabrics			12 – hours			
Single jersey knit fabric structures, their cam and needle order: Plain jersey, Pique, Thick pique, Honey comb, Pearl and Twill. Rib fabric structures, their cam and needle order: 1x1 rib, 2x2 rib, Drop needle, Royal rib, Polka rib, Double half cardigan, Double cardigan, Milano rib, Waffle, Flat back, Swiss double pique and French double pique. Interlock fabric structures, their cam and needle order: Interlock, Eight lock, Ottoman rib, Pin tuck, Texi pique and Ponte di Roma.						
Unit:4						
Jacquard Knitting			9—hours			
Jacquard knitting - Needle selection techniques – Pattern jack, Pattern wheel , Pattern drum and Computerized jacquard knitting machines – Brief study on specialty weft knit structures – Auto stripe yarn programming – Elastomeric yarn insertion and effects – Knitted fabric faults – Causes						

and Remedies.

Unit:5 **Advance Knitting Techniques** **14—hours**

Flat Knitting – Yarn passage diagram of a flat knitting machine – Mechanical type Flat knitting machine - Needle bed assembly – Racking, Carriage and Cam box arrangement - Transfer Stitch and Drop Stitch – Thread diagram, effects and applications – Introduction to computer controlled Flat knitting machine. Concept of fully-fashioned machines and seamless knitwears. Introduction to warp knitting – Warp knitting terminologies – Open lap and closed lap. Basic lapping variations - Detailed study of knitting elements of Tricot and Raschel machines. Knitting action of Tricot and Raschel machines. Comparison of Tricot and Raschel machine. Study of standard two bar warp knit structures and their properties – Lock knit, Satin, Reverse lock knit, Loop raised, Sharkskin and Queens’s cord.

Total Lecture hours **60 – hours**

Text Book(s)

- 1 Knitting Technology, D.B. Ajgaonka, Universal Publication, 1998.
- 2 Knitting Technology, David .J.Spencer, Elsevier Publication, 2014.
- 3 Circular knitting technology, Chandrasekara Iyer et al.,Meisenbach Publication,2004.

Reference Books

- 1 Flat knitting, Dr.Samuel Raz , Westenhausen Publication,1993.
- 2 Warp Knitting Technology, Dr.S.Raz. KarlMayer Publication, 2001.
- 3 Fabric forming systems, Peter Lord et al., Noyes Publications,1982.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

- 1 <https://www.sciencedirect.com/topics/engineering/knitting-technology>
- 2 <https://nptel.ac.in/courses/116/102/116102008/>
- 3 https://www.academia.edu/32347533/KNITTING_TECHNOLOGY

Course Designed By: Mr. V. Rajendran

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	M	M	M	L	M	M
CO2	S	S	M	M	L	S	M	M	M	S
CO3	S	S	S	M	M	M	L	M	M	M
CO4	S	S	M	M	L	S	M	M	M	S
CO5	S	S	S	M	M	M	M	M	M	M

*S-Strong; M-Medium; L-Low

Course Code	13P	KNITTING TECHNOLOGY PRACTICAL	L	T	P	C
Core		Practical I	-	-	4	4
Pre-requisite		Basic Knowledge in Fabrics	Syllabus Version		2020 – 2021	
Course Objectives:						
To Train the students in analyzing the cloth to identify construction parameters of Knit structures.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember Identify the constructional parameters of fabric.					K1
2	Understand many different knit structures.					K2
3	Apply the Knit, Tuck and cam patterns in the structures of Knits.					K3
4	Analyze the different knitted fabrics.					K4
5	Analyze the all the structures of knits.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Part A						
Experiments					30 – hours	
1. Calculate the speed of single jersey knitting machine through gearing Diagram. 2. Calculate the speed of rib knitting machine through gearing diagram. 3. Trace the diagram of different cams in the conventional/modern knitting machine with Also mention the importance of each cam. 4. Trace the take down mechanism and set the mechanism for maximum and minimum 5. Trace the positive feeder mechanism available in the modern knitting machine and set the mechanism for two different feed lengths. 6. Develop a pattern for flat knitting and set the machine accordingly. 7. Develop a pattern for circular knitting and set the machine accordingly.						
Part B						
Experiments					30—hours	
1. Pique 2. Double Pique 3. Lacoste 4. Pearl 5. Twill 6. Two Thread Fleece 7. Mini Jacquard Design 8. Auto Striper 9. Rib Waffle 10. Flat Back Rib 11. Rib drop needle 12. Interlock						
And						

Analysis of the Following Particulars:

A) Course and Wale density

B) Loop length

C) Areal Density (GSM)

D) Tightness factor

E) Technical Graph

F) Cam Order

G) Needle Order

(Any one of the above designs shall be given)

		Total Lecture hours	60—hours
Text Book(s)			
1	Knitting Technology, D.B. Ajgaonka, Universal Publication, 1998.		
2	Knitting Technology, David .J.Spencer, Elsevier Publication, 2014.		
3	Circular knitting technology, Chandrasekara Iyer et al.,Meisenbach Publication,2004.		
Reference Books			
1	Flat knitting, Dr.Samuel Raz , Westenhausen Publication,1993.		
2	Warp Knitting Technology, Dr.S.Raz, KarlMayer Publication, 2001.		
3	Fabric forming systems, Peter Lord et al.,Noyes Publications,1982.		
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]			
1	https://www.sciencedirect.com/topics/engineering/knitting-technology		
2	https://nptel.ac.in/courses/116/102/116102008/		
3	https://www.academia.edu/32347533/KNITTING_TECHNOLOGY		
Course Designed by: Mr. K. Kannan.			

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	L	M	M	L	L	M	M
CO2	S	S	M	M	M	S	M	M	M	S
CO3	S	S	S	M	M	M	L	M	L	M
CO4	S	S	M	M	L	S	M	M	M	S
CO5	S	S	S	M	M	L	M	M	M	M

*S-Strong; M-Medium; L-Low

Course Code	1AP	COMPUTER APPLICATION PRACTICAL	L	T	P	C
Allied		Paper I	-	-	4	3
Pre-requisite		Basic Knowledge in Computer	Syllabus Version		2020 – 2021	
Course Objectives:						
The Student should be made to be familiar with the use of MS Office software and exposed to presentation and visualization tools.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember and be well-known in MS Office.					K1
2	Understand the Computer Operations.					K2
3	Apply good programming design methods for program development.					K3
4	Analyze the tools in the computer.					K4
5	Remember and work in all Programmes.					K1
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
		Experiments	60 – hours			
<ol style="list-style-type: none"> 1. Prepare your Class Time Table using Table options in MS-Word. 2. Prepare an interview call letter and send using Mail Merge in Ms-word. 3. To create a Cheque leaf using Ms-word. Apply Various Fonts. 4. Create a line & bar chart for given data using Ms-word. 5. Prepare students Mark statement Using Ms-Excel. 6. Prepare a Employee Salary list using Ms-Excel. 7. Prepare a Power Point presentation about a product. Apply Animation and slide Timing. 8. Create a Mail id and use various mail features. 9. Search the given topic using search engine and prepare a report using Ms-word. 10. Design a T-shirt and Apply Patterns. 11. Create a Jewellery design. 12. Design a Precious stone. 13. Design a wedding invitation. 14. Write HTML Code to display the registration form. 15. Design a web page with hyperlinks linking all pages 						
		Total Lecture hours	60 – hours			
Text Book(s)						
1	Programming in Basics E.Balagurusamy, TMH Publ.Co.Ltd,III, Edition,2001.					
2	Programming in Basic, Byrons Gotfried, RM Consulting Services Publication,1983.					
Reference Books						
1	The Internet Complete, Harley Hahan, Tata McGraw – Hill Publication, 2001.					
2	The Internet Book,Douglas E. Comer,Fifth Edition, CRC Press Publication, 2001.					

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]1 <http://www.uiet.co.in/downloads/20160326015708>2 http://dhsekerala.gov.in/downloads/circulars/0107151111_com.pdf3 <https://www.researchgate.net/publication/286048915>

Course Designed By: Mr. P. Pratheep Kumar

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	M	S	S
CO2	M	M	M	M	M	M	M	M	S	S
CO3	M	M	M	M	M	M	M	M	S	S
CO4	M	M	M	M	M	M	M	M	S	S
CO5	M	M	M	M	M	M	M	M	S	S

*S-Strong; M-Medium; L-Low





Second Semester

Course Code	23A	WOVEN FABRICS AND DESIGNS	L	T	P	C
Core	Paper III		4	-	-	4
Pre-requisite	Basic Knowledge in Fabrics		Syllabus Version	2020 - 2021		
Course Objectives:						
The main objective of this course is to enable the students to understand <ul style="list-style-type: none"> • Preparatory processes involved in the production of fabric. • Basics of weaving processes. 						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the processes involved in the production of fabrics.					K1
2	Understand the principles of different fabric production methods.					K2
3	Apply new process in Weaving Techniques.					K3
4	Analyze the various fabric defects and their causes and remedies.					K4
5	Understand the advance Weaving Methods and its Procedures.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Introduction to Weaving				13 – hours	
Classification of fabric forming methods – Weaving preparatory processes - Objects of winding process – Winding types – Passage of material through high speed automatic cone winding machine – Passage of material through precision winding machine – Winding terminologies, open wind and close wind – Winding defects, causes & remedies. Pirn winding – Objects - Passage of material through an automatic high speed Pirn winder.						
Unit:2	Warping and Sizing				13 – hours	
Objects of warping – Types of warping – Passage of material through high speed modern beam Warping machine & sectional warping machine – Warping defects, Causes & remedies. Objects of sizing – comparison of two cylinder, multi cylinder & hot air sizing machines – Sizing ingredients & their functions – Size paste preparation – Sizing defects, causes & remedies.						
Unit:3	Weaving Mechanisms				12—hours	
Passage of material through a plain power loom – Basic mechanisms of a loom – Primary, Secondary & auxiliary motions – Tappet shedding – Cone over pick & under pick mechanisms – Beat up mechanism – Types of let off & take up mechanisms – Fabric defects, causes & remedies.						
Unit:4	Introduction to Weaves				12—hours	
Introduction to weaves – Weave diagram – Plain weave & derivatives – Twill weave & Derivatives – Satin & sateen weaves – Honeycomb – Huck a back. Objects of dobby & jacquard mechanisms – Types of dobby & jacquard – Study of negative & positive Dobbies – Study of single cylinder & double cylinder jacquard mechanisms.						

Unit:5		Shuttleless Looms	10-- hours
Shuttle less looms: Introduction - Advantages - Types of shuttle less looms. Introduction to non wovens – Production methods - Applications. Home Textiles.			
		Total Lecture hours	60 -- hours
Text Book(s)			
1	Principles of Weaving, R.Marks, A.T.C. Robinson, The Textile Institute, Manchester Publication,1976.		
2	Fabric Forming, B.Hasmukhrai, SSM ITT Co operative stores Ltd Publication, Komarapalayam, 1996.		
3	Weaving Mechanism, Vol. I & Vol. II, Prof.N.N.Banerjee, Published by Smt.Tandra Banerjee, West Bengal, 1999.		
Reference Books			
1	Mechanism of Weaving Machines, Prof.J.L.Chakravorty, Smt.B.Chakravorty,Serampore, W.B. Publication, 1984.		
2	Handbook of Weaving, Sabit Adanur, Technomic Publishing Company, Inc, USA, 2001.		
3.	Fabric Forming Systems, Peter Schwartz, Trevor Rhodes, Mansour Mohamed, Mahajan Book Distributors and Publication, Ahmedabad, 1996.		
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]			
1	https://www.cottonworks.com/topics/sourcing-manufacturing/weaving/basic-woven-designs-introduction-to-woven-fabrics/		
2	https://www.textileschool.com/453/woven-design/		
3	https://www.intechopen.com/books/advances-in-modern-woven-fabrics-technology/color-and-weave-relationship-in-woven-fabrics		
Course Designed By: Mrs. D. Anita Rachel			

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	M	M	L	L	M	M
CO2	S	S	M	M	L	S	M	M	M	S
CO3	S	S	S	M	M	M	L	L	M	M
CO4	S	S	M	M	M	S	M	M	M	S
CO5	S	S	S	M	M	L	M	M	M	M

*S-Strong; M-Medium; L-Low

Course Code	23B	PATTERN MAKING AND GRADING	L	T	P	C
Core	Paper IV		4	-	-	3
Pre-requisite	Basic Knowledge in Garments		Syllabus Version	2020 - 2021		
Course Objectives:						
To Introduce students about pattern making tools from the scientific and technological viewpoint in garment industry.						
To Equip students with comprehensive pattern making skills.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the styles of all Pattern Development.					K1
2	Understand the pattern designed, so as to provide not only good fit but also enhance body image.					K2
3	Apply the Grading Techniques for different styles					K3
4	Analyse the Pattern making Technology.					K4
5	Apply and make standard patterns.					K5
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Introduction to Patterns				14—hours	
Introduction – Concept of basic pattern and grading – Different types of block pattern. Methods of pattern making with special reference to pattern drafting - Pattern making tools – Various pattern production terms–Standard body measurements for men’s wear, women’s wear and kids wear of different countries. Style wise component parts of a garment.						
Unit:2	Concept of Pattern Layouts				12 – hours	
Pattern positioning and lay out – Concept of pattern layout - Rules and methods of pattern layout – Adjusting the patterns to fabric. Fitting: Definition – Principles for a good fit– Checking the fit of a garment – Solving fitting problems in various garments.						
Unit:3	Draping				12—hours	
Draping – Importance of draping – Dress form and types – Draping steps for basic bodice, skirt, Pants. Procedure to develop necklines: Jewel neck - Round neck - „U“ neck - Square neck - Pentagon neck - Star neck - Inside and outside scallop neck. Procedure to develop sleeves: Plain and puff sleeves.						
Unit:4	Drafting Techniques				10 – hours	
Procedure to draft the ¼th patterns for Ladies wear: Blouse, kameez, salwar, midi, midi top. Style detailing – Skirt, Plackets, Pockets, Pants, Sleeve, Collar, Necklines.						

Unit:5	Grading Techniques	12-- hours
Basic principle of dart manipulation – Displacement of bust dart (waist – side seam, armhole – neck of front edge).Grading – Definition – Principles of grading - Master grades – Basic back & front grades – Grading of basic sleeve, basic collar, trousers.		
Total Lecture hours		60 -- hours
Text Book(s)		
1	Pattern Making For Fashion Design, Helen Joseph Armstrong Harper Collins Publishers 1987.	
2	Metric Pattern Cutting, Winifred Aldrich, Publication by Blackwell Science Ltd, England, 1994.	
3	Metric Pattern Cutting for Men's Wear, Winifred Aldrich, Publication by Blackwell Science Ltd, England 1990.	
Reference Books		
1	Metric Pattern Cutting for Children's Wear (From 2 – 14 Years), Winifred Aldrich, Publication by Blackwell Science Ltd, England 1991.	
2	Pattern Cutting for Women's Outerwear, Gerry Cooklin, Publication by Blackwell Science Ltd, England, 1992.	
3.	Pattern Grading for Women's Clothes, Gerry Cooklin, Publication by Blackwell Science Ltd, England, 1990.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://textilelearner.blogspot.com/2014/03/methods-of-garment-pattern-grading.html	
2	https://www.threadsmagazine.com/2008/11/01/making-sense-of-pattern-grading	
3	https://www.clothingpatterns101.com/pattern-grading.html	
Course Designed By: Mr. P. Sankarakarthikeyan		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	M	S	L	L	L	S	S	S	S
CO2	L	S	S	L	M	M	S	S	S	S
CO3	M	M	S	M	L	M	S	S	S	S
CO4	L	M	S	L	M	L	M	S	S	S
CO5	M	M	S	M	L	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	23P	PATTERN MAKING PRACTICAL	L	T	P	C
Core		Practical II	-	-	5	3
Pre-requisite		Basic Knowledge in Patterns	Syllabus Version		2020 - 2021	
Course Objectives:						
To Train the students in pattern making and grading of apparels.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the practical experience on pattern making of garments.					K1
2	Understand the all the styles of patterns.					K2
3	Apply all grading techniques into the pattern styles.					K3
4	Analyze the Pattern Development and Grading Techniques.					K4
5	Apply and make standard patterns.					K3
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
PART-A		Experiments	35—hours			
Men's Wear						
1. Basic t-shirt with half sleeve.						
2. Polo t-shirt with half sleeve						
3. T-shirt with full sleeve.						
4. T-shirt with raglan sleeve.						
5. Men's Trouser						
6. Brief and boxer shorts.						
7. Vest with and without sleeve.						
8. Night dress.						
9. Men's Hood Jacket.						
10. Men's Kimono.						
PART-B		Experiments	20 – hours			
Kid's Wear						
1. A line frock						
2. Baba suit						
3. Romper.						
4. Pant						
PART-C		Experiments	20—hours			
Women's Wear						
1.Ladies Basic Bodice						
2.Nighties						
3.Blouse						
4.Ladies Tops						

5.Skirt “ A line”		
	Total Lecture hours	75 – hours
Text Book(s)		
1	Pattern Making For Fashion Design, Helen Joseph and Armstrong Harper, Collins Publishers, 1987.	
2	Metric Pattern Cutting, Winifred Aldrich, Publication by Blackwell Science Ltd, England 1994.	
3	Metric Pattern Cutting for Men’s Wear, Winifred Aldrich, Publication by Blackwell Science Ltd, England 1990.	
Reference Books		
1	Pattern Cutting for Women’s Outerwear, Gerry Cooklin, Publication by Blackwell Science Ltd, England 1992.	
2.	Pattern Grading for Women’s Clothes, Gerry Cooklin, Publication by Blackwell Science Ltd, England 1990.	
3	Pattern Making For Fashion Design, Helen Joseph and Armstrong Harper, Collins Publishers 1987.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://textilelearner.blogspot.com/2014/03/methods-of-garment-pattern-grading.html	
2	https://www.threadsmagazine.com/2008/11/01/making-sense-of-pattern-grading	
3	https://www.clothingpatterns101.com/pattern-grading.html	
Course Designed By: Mr. S.P. Manian		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	M	S	L	L	L	S	S	S	S
CO2	L	M	S	M	L	M	S	S	S	S
CO3	M	M	S	L	L	L	S	S	S	S
CO4	L	M	S	L	M	L	M	S	S	S
CO5	M	M	S	M	M	L	M	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	2AQ	WOVEN FABRIC ANALYSIS AND DESIGNING PRACTICAL	L	T	P	C
Allied		Practical II	-	-	3	3
Pre-requisite		Basic Knowledge in Fabric structures.	Syllabus Version		2020 – 2021	
Course Objectives:						
To Train the students in analyzing the cloth to identify construction parameters and prepare design, draft and peg plan.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember and Identify the constructional parameters of fabric.					K1
2	Understand how to Construct design, draft and peg plan for weaving the fabric.					K2
3	Apply the weave structures in Computers.					K3
4	Analyze the Design, draft, peg plan, denting plan.					K4
5	Understand Woven structural analysis.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
PART – A		Experiments	25 – hours			
<p>To analyse the following particulars of woven fabrics</p> <p>(i) Woven structural analysis: Design, draft, peg plan, denting plan.</p> <p>(ii) Warp particulars: Material of warp - ends per length - count, direction of twist, Crimp percentage, cover factor, warp pattern.</p> <p>(iii) Weft particulars: Material of weft - picks per unit length- count, direction of twist, twist per length, Crimp percentage, cover factor and warp pattern.</p> <p>(iv) Fabric particulars: Total Cover factor, Weight of fabric and thickness.</p> <p>(v) Loom requirements: Shedding mechanism, heald count, and count.</p> <ol style="list-style-type: none"> 1. Plain and Twill fabrics 2. Demonstration - production of plain and twill fabrics 3. Satin/Sateen and Honey comb fabrics 4. Demonstration - production of satin/sateen and honey comb fabrics 5. Huck-a-Buck 6. Extra thread figuring fabric(s) 						
PART – B		Experiments	20—hours			
<ol style="list-style-type: none"> 1. Basics of Raster and vector images, types, image formats and colour concepts. 2. Development of dobby designs (part –I) based on instructiveness of weave. 3. Development of dobby designs (part –II) based on instructiveness of weave and colour order. 4. Development of motifs. 5. Development of jacquard designs (part –I) using - colour and weave selection concepts – shade and thread balance. 						

6. Development of jacquard designs (part –II) Spot figuring – Drop.		
7. Development of jacquard designs – Ogee base.		
8. Development of jacquard designs – Diamond base.		
9. Development of jacquard designs – Sateen base.		
10. Multilayer design – Extra Warp/Weft design Concepts.		
	Total Lecture hours	45 – hours
Text Book(s)		
1	Principles of Weaving, R.Marks, A.T.C. Robinson, Publication by The Textile Institute, Manchester, 1976.	
2	Fabric Forming, B.Hasmukhrai, Publication by SSM ITT Co operative stores Ltd, Komarapalayam, 1996.	
3	Weaving Mechanism, Vol. I & Vol. II, Prof.N.N.Banerjee, Published by Smt.Tandra Banerjee, West Bengal, 1999.	
Reference Books		
1	Mechanism of Weaving Machines, Prof.J.L.Chakravorty, Smt.B.Chakravorty,Serampore, Publication by W.B.,1984.	
2	Handbook of Weaving, Sabit Adanur, Technomic Publishing Company, Inc, USA, 2001.	
3.	Fabric Forming Systems, Peter Schwartz, Trevor Rhodes, Mansour Mohamed, Publication by Mahajan Book Distributors, Ahmedabad, 1996.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.cottonworks.com/topics/sourcing-manufacturing/weaving/basic-woven-designs-introduction-to-woven-fabrics/	
2	https://www.textileschool.com/453/woven-design/	
3	https://www.intechopen.com/books/advances-in-modern-woven-fabrics-technology/color-and-weave-relationship-in-woven-fabrics	
Course Designed By: Mrs. D. Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	L	M	M	L	L	M	M
CO2	S	S	M	M	L	S	M	M	M	S
CO3	S	S	S	M	M	M	L	L	L	M
CO4	S	S	M	M	L	S	M	M	M	S
CO5	S	S	S	M	M	L	M	M	M	M

*S-Strong; M-Medium; L-Low

A purple scroll graphic with a white outline. The scroll is unrolled, showing a white interior. The text "Third Semester" is centered on the white interior. The scroll has decorative elements: a white scroll edge at the top left, a white scroll edge at the bottom left, and two blue lightning bolt-like shapes on the sides. The background is white.

Third Semester

Course Code	33A	Apparel Manufacturing Technology	L	T	P	C
Core	Paper II		-	4	-	3
Pre-requisite	Basic knowledge in apparel production processes		Syllabus Version		2021-22	
Course Objectives:						
The main objectives of this course are to:						
1. Instruct about weaving preparatory process and weaving 2. Make the students to learn about various woven fabric structures and machine mechanism 3. Teach about knitting machine elements and knit fabric structures						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
CO1	List out the various activities of apparel manufacturing process					K2
CO2	Differentiate the various types of cutting machines used and applications of various types of stitches in sewing process					K3
CO3	Analyze the various factors influencing quality in sewing					K3
CO4	Calculate thread consumption for various types of stitches					K3
CO5	Distinguish about the types of trims & accessories used in apparels					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create						
Unit:1						
Apparel Manufacturing & Cutting Process					12 hours	
Apparel Industry: Introduction to apparel industry. Over view of apparel manufacturing technology. Overview of cutting department- spreading, Types of lay- single ply, multiply, stepped ply. Forms of Spreading- One way face to face, two way. Spreading methods-manual spreading, Spreading carriage, automatic spreading machine.						
Unit:2						
Sewing machine & Process					12 hours	
Introduction to sewing- types of sewing machines, parts & functions of single needle machine, double needle machine, over lock machine. Formation of stitch, stitch types & classification. Features & uses of chain stitch lock stitch, Multi thread chain stitch, over edge chain stitch & covering chain stitch, attachments used in Sewing machine.						
Unit:3						
Machine planning & Seams					12 hours	
Machine planning- definition, what are the factors affecting the machinery allocation. Machine layout- definition, Basic concept of machine layout, what are the factors affecting machine layout. Seams & seam finishes- definition, types of seams and seam finishes and their applications. Sewing machine- maintenance, common problems & remedies						
Unit:4						
Defects in Sewing					12 hours	
Detailed study on various stitching, sewing and assembly defects - causes & remedies: skip stitch, unbalanced, puckering, gathering, needle defects, thread problems – quality of threads and its impact on sewing quality – sew ability and its influencing factors – needle cutting index.						
Unit:5						
Finishing & Packing					12 hours	
Introduction to various machines for garment finishing – Fusing – Sucking – Ironing - Packing. Pressing-Purpose of pressing –Categories of pressing-The means of pressing-pressing equipment and methods-Iron and steam presses. Packaging-Types of package forms-Types of packaging materials-Quality specification of packaging materials-Merchandising packaging-Shipment Packaging-Selection of package design.						

	Total Lecture hours	60 hours
Text Book(s)		
1	Apparel Manufacturing Hand Book, Jacob Solinger, Bobbin Media Corporation, 1988	
2	Technology of Clothing Manufacture, Herold Carr & B. Latham, Wiley-Blackwell, 1994	
3	Mary Mathews, “Practical clothing construction” Thomson & co., madras, 1974.	
4	Laing R.M. Webster J. “Stitches and seams”, The textile institute 1998.	
5	Shaeffer Clair “Sewing for apparel Industry” Prentice Hall, New Jersey 2001.	
6	“Apparel Manufacturing Process”, Kunz.	
Reference Books		
1	Knitted Clothing Technology, T. Bracken Berry, Wiley-Blackwell, 1992	
Related online content		
1.	https://www.intouch-quality.com/blog/4-sewing-stitches-used-in-manufacturing-and-their-benefits	
2.	https://garmentsmerchandising.com/types-of-stitch-used-in-garments/	
3.	https://sewguide.com/how-to-sew-seams/	
4.	https://ordnur.com/sewing/sewing-defects-solve-with-root-causes/	
Course Designed By: Mr.K.Balamurugan		

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	L	M	M	L	M	S	S	S	S
CO2	M	M	M	L	M	M	S	S	S	S
CO3	L	L	M	M	L	M	S	S	S	S
CO4	M	M	M	L	L	M	S	S	S	S
CO5	M	M	M	M	M	M	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	33B	TEXTILE WET PROCESSING	L	T	P	C
Core		Paper VI	4	-	-	3
Pre-requisite		Basic Knowledge in Dyeing and Printing Process.	Syllabus Version		2020 – 2021	
Course Objectives:						
To Acquaint student of the operational sequence in wet processing of different textile materials.						
To Impart knowledge in the field of pre-processing, processing and post-processing of textile substrate.						
To Impart fundamental knowledge of color science and assessment of dyed and printed goods.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the entire Chemical processing of textile materials.					K1
2	Understand Dyeing and printing methods and principles of colour application.					K2
3	Apply the colouration techniques in all types of Fabrics with suitable dyes.					K3
4	Analyze advance Textile finishing Techniques.					K4
5	Analyze and Assessment the fastness properties of dyed and printed goods.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1						
Water Hardness			10 -- hours			
Water: water hardness – types - softening process: ion exchange - sequestering agent methods - Terminology & terms related to textile industries (ph, acid, base, oxidation, reduction) – role of textile auxiliaries. Preparatory process sequence for woven & Knitted fabrics.						
Unit:2						
Preparatory Process			10 -- hours			
Preparatory process: singeing – objectives – types of singeing, Desizing – objectives –methods, scouring – objectives –methods. Bleaching –objectives - types of bleaching agents – advantages of peroxide bleaching – optical whiteners. Mercerizing –objectives - types.						
Unit:3						
Dyeing			12-- hours			
Dyeing: classification of dyes – principles of different dyeing - direct, reactive, vat, & disperse dyes – principles of dyeing of synthetic & blended textile materials - after treatments – types & principles of different dyeing machines : winch – soft flow – cabinet - cheese and HTHP machines – merits & demerits.						
Unit:4						
Printing			14-- hours			
Printing - methods of printing – screen preparation. styles of printing – direct, resist, discharge, transfer . print paste ingredients –after treatments. pigment printing. Garment printing : flock , Hi Density, Foil, Plastisol, foam, khadi – burnout printing. Digital printing.						

Unit:5	Finishing	14-- hours
Finishing: objectives of finishing – temporary and permanent finishes. Chemical finish: wrinkle free – softeners – anti microbial – fire retardant. Mechanical finish: calendaring – raising – shearing. Bio polishing. Stone washing. Application of enzymes in textile processing. Pollution - Brief study about ETP.		
	Total Lecture hours	60 -- hours
Text Book(s)		
1	Technology of textile processing (Vol 1-2), V.A.Shenai. Sevak Publications – 1975.	
2	Handbook of Textile Coloration and Finishing, Mohammad Shahid, <u>Guoqiang Chen</u> , Published by Studium press llc,2018.	
3	Technology of Bleaching and Dyeing of Textile Fibres Vol.1, Chakravarthy RR And Trivedi S.S. Part–I, Mahajan Book Publishers, 1979.	
Reference Books		
1	The Bleaching and Dyeing of Cotton Material, Prayag R.S., Published by Weaver’s Service Cent 1983.	
2	Chemical Processing of Synthetic Fibres and Blends , Datye K.V and Vaidhay A.A. ., Published by John Wiley & Sons, New York, 1982.	
3.	Processing of Manmade Fibres , Usenko V, , MIR Publishers, Moscow.- 1975.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://textechdip.wordpress.com/contents/wet-processing/	
2	https://textilelearner.blogspot.com/2011/08/flow-chart-of-wet-processing-process.html	
3	https://www.sciencedirect.com/topics/engineering/textile-wet-processing	
Course Designed By: Mrs. D. Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	L	S	S	L	S	M	M	L	S
CO2	S	M	S	S	S	M	M	M	L	S
CO3	S	L	S	S	S	M	M	M	M	S
CO4	M	M	S	S	M	M	M	L	L	S
CO5	M	M	S	S	S	M	M	L	M	S

*S-Strong; M-Medium; L-Low

Course Code	33P	GARMENT CONSTRUCTION I	L	T	P	C
Skill Based Subject		Practical III	-	-	5	3
Pre-requisite		Basic Knowledge in Stitches and Seams.	Syllabus Version		2020 – 2021	
Course Objectives:						
To Train the students in construction of garments.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the Stitches and Seams.					K1
2	Understand different machines used for garment manufacture.					K2
3	Apply and carry out different types of stitching, button holing and button stitching.					K3
4	Analyze all the styles in Garment Construction.					K4
5	Remember how to Draft the Pattern, Cut and Construct.					K1
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Part - A						
Experiments					45 -- hours	
Stitches and Seams						
Practice on Single Needle Lock Stitch machine for given paper / fabric exercise – Straight lines and curves - Fabric exercises – Straight lines, curves, squares, rectangles, triangles and any other irregular shapes.						
Prepare at least five different stitches and seam samples by using different sewing machines and furnish the machine threading diagram along with stitch density and thread consumption details.						
Developing seams of various types - superimposed, bound lapped, flat felt and piping						
Develop the samples of components such as Draft the Pattern, Cut & Construct the Following Components for the Given Measurement:						
<ol style="list-style-type: none"> 1. Different Neck Lines (At Least 3Types) 2. Different Collars (At Least 3 Types) 3. Different Sleeves (At Least 3 Types) 4. Different Plackets (At Least 3 Types) 5. Different Pockets (At Least 3Types) 6. Slits 						
Part - B						
Experiments					45 -- hours	
Kid's Wear						
Draft the Pattern, Cut & Construct Then and develop and construct the following.						
<ol style="list-style-type: none"> 1. Romper. 2. A Line Frock. 3. Baba Suit 						
Total Lecture hours						
					90 -- hours	
Text Book(s)						

1	Apparel Manufacturing, Hand Book, Jacob Solinger Published by Bobbin Media Corporation, 1988.
2	Technology Of Clothing Manufacture, Herold Carr & B.Latham, Wiley-Blackwell Publication, 2008.
3	Apparel Manufacturing and Technology, T.Karthik, P.Ganesan, D.Gopalakrishanan, ., Published by CRC Press, 2016.

Reference Books

1	Technology Of Stitches & Seams – Coats, Published by Viyella Limited, 1986.
2	Apparel Manufacturing Management System, Roche Daniel, Published by Elsevier, 2014.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://www.onlineclothingstudy.com/2018/05/machinery-needed-for-garment.html
2	https://garmentsmerchandising.com/garment-machine-function/
3	https://dir.indiamart.com/indianexporters/m_textmch.html

Course Designed By: Mr. P. Ellayaperumal

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	L	M	L	L	M	S	S	S	S
CO2	L	M	M	M	M	M	S	S	S	S
CO3	M	L	M	M	L	M	S	S	S	S
CO4	L	M	M	L	M	M	S	S	S	S
CO5	M	L	M	L	L	M	S	S	S	S

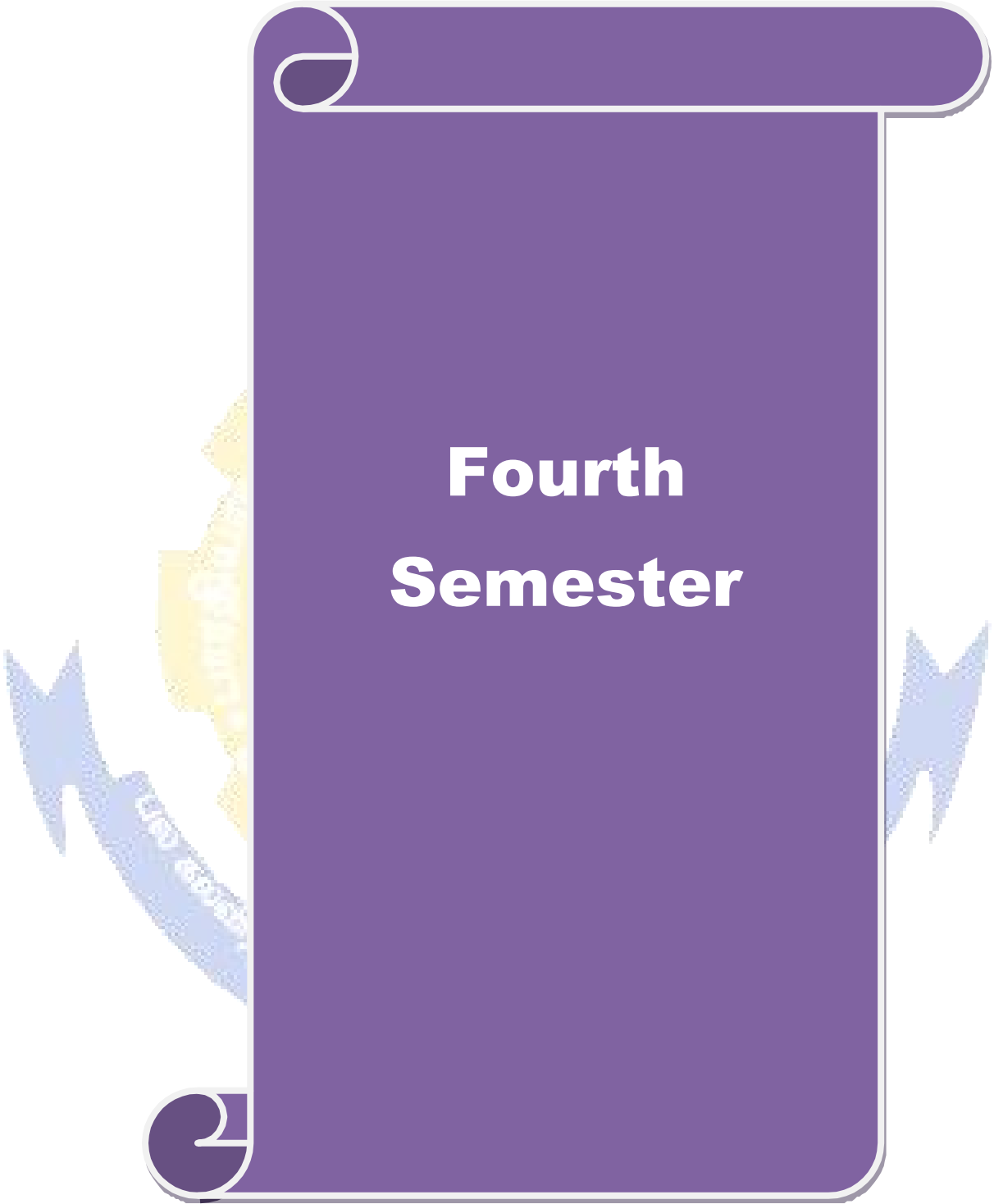
*S-Strong; M-Medium; L-Low

Course Code	33Q	TEXTILE WET PROCESSING PRACTICAL	L	T	P	C
Allied	Practical IV		-	-	3	3
Pre-requisite	Basic Knowledge in Dyeing and Printing.		Syllabus Version		2020 – 2021	
Course Objectives:						
To Acquaint student of the operational sequence in wet processing of different textile materials.						
To Impart knowledge in the field of pre-processing, processing and post-processing of textile substrate.						
To Impart fundamental knowledge of color science and assessment of dyed and printed goods.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the entire Chemical processing of textile materials.					K1
2	Understand Dyeing and printing methods and principles of colour application.					K2
3	Apply the colouration techniques in all types of Fabrics with suitable dyes.					K3
4	Analyze advance Textile finishing Techniques.					K4
5	Analyze and Assessment the fastness properties of dyed and printed goods.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Experiments						
75 -- hours						
1. Estimation of water hardness by EDTA method.						
2. Combined Scouring & Bleaching of grey cotton woven / knitted fabrics and estimate the loss percentage.						
3. Pre Treat the Grey Woven Sample with the Desizing Process.						
4. Dye the given cotton sample with Natural dyes.						
5. Dye the given cotton sample with Cold brand reactive dyes.						
6. Dye the given cotton sample with Hot Brand reactive dyes.						
7. Dye the given cotton sample with Vinyl Sulphone dyes.						
8. Dye the given cotton sample with reactive H-E dyes.						
9. Dye the given silk material with acid / basic dyes.						
10. Dye the given polyester sample using carriers.						
11. Dye the given fabric for the given pattern using Tie & Dye Technique.						
12. Develop a batik motif and print on the given sample.						
13. Prepare the print paste with Pigment colour and print on the given fabric.						
14. Prepare the Print Paste with reactive dyes and print on the given fabric by discharge style						
Total Lecture hours						
75 -- hours						
Text Book(s)						
1	Technology of textile processing (Vol 1-2), V.A.Shenai. Sevak Publications – 1975.					
2	Chemical Processing of Synthetic Fibres and Blends , Datye K.V and Vaidhay A.A. Published by John Wiley & Sons, New York, 1982.					

3	Technology of Bleaching and Dyeing of Textile Fibres Vol.1, Chakravarthy RR And Trivedi S.S. Part-I, Mahajan Book Publishers, 1979.
Reference Books	
1	The Bleaching and Dyeing of Cotton Material, Prayag R.S., Published by Weaver's Service Cent, 1983.
2	Chemical Processing of Synthetic Fibres and Blends , Datye K.V and Vaidhay A.A. Published by John Wiley & Sons, New York, 1982.
3.	Processing of Manmade Fibres , Usenko V, , MIR Publishers, Moscow,1975.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://textechdip.wordpress.com/contents/wet-processing/
2	https://textilelearner.blogspot.com/2011/08/flow-chart-of-wet-processing-process.html
3	https://www.sciencedirect.com/topics/engineering/textile-wet-processing
Course Designed By: Mrs. P. Maheswari	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	L	S	M	M	L	S
CO2	S	L	S	S	S	M	M	L	M	S
CO3	S	M	S	S	S	M	M	L	L	S
CO4	M	L	S	S	S	M	M	L	M	S
CO5	M	M	S	S	S	M	M	S	L	S

*S-Strong; M-Medium; L-Low



Fourth Semester

Course Code	43A	TEXTILE TESTING AND QUALITY ASSURANCE	L	T	P	C
Core		Paper VII	4	-	-	4
Pre-requisite		Basic knowledge in fiber, yarn, and fabric properties	Syllabus Version	2020 - 2021		
Course Objectives:						
To Infuse understanding of Yarn, Fabric and Apparel Testing Methods						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the methods by which the physical and mechanical properties of textile materials and products are measured and investigated.					K1
2	Understand the Sampling and yarn quality parameters testing.					K2
3	Apply the Quality in Fabric and garment by Quality parameters testing Procedures.					K3
4	Analyze the Final Inspection Process in the Garment industry.					K4
5	Understand the Textile Testing Standards.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1						
Quality and its Terms			12 -- hours			
Importance of Quality. Quality terminologies. Testing: Objectives of Testing - Standardization of Testing - sampling - - measurement – types of error - repeatability & reproducibility -atmospheric conditions for testing lab. Brief study on fibre properties – FQI. – Identification of textile fibres.						
Unit:2						
Yarn Quality			12 -- hours			
Yarn numbering systems – Determination of yarn count: wrap reel, electronic yarn count Balance, Quadrant balance, Beesley balance - count calculations. Yarn strength: Lea strength tester and CSP. Yarn evenness: Brief study on Uster unevenness. Yarn twist: Terms - Electronic twist tester. Hairiness measurement.						
Unit:3						
Fabric Quality			14-- hours			
Knitted fabric specifications - Bursting strength testing – testing of fabric resistance to snagging, Abrasion & pilling - fabric handle - drape and stiffness - Dimensional stability of knitted fabric – spirality -. Testing of color fastness to washing, rubbing, perspiration & light - Grey scales and ratings - Reasons for poor color fastness - Seam strength & seam slippage. Brief study about testing of woven fabric.						
Unit:4						
Inspection			12-- hours			
Meaning – Definition - Types of Inspection – Study on Incoming materials inspection: fabric Inspection systems & Testing of zippers, Buttons, Waistbands, Sewing thread.						
Unit:5						
Final Inspection			10-- hours			
In process inspection and its significance in apparel quality. Final inspection – Risks involved – AQL – MIL STD. Garment appearance after washing – package quality testing – care labels. Brief study about Testing Standards. Brief study about Oeko-Tex Standards.						
Total Lecture hours			60-- hours			

Text Book(s)	
1	Principles of Textile Testing, J.E. Booth, Butterworth's Publication, 1986.
2	Hand book of textile Testing & Quality Control, Elliot b. Grover & D.S. Hamby, Textile Book Publishers (Interscience), New York, 1960.
3	Physical testing of Textiles, B.P.Saville, Woodhead Publishing ltd, 1999.
Reference Books	
1	Textile Testing, P. Angappan & R. Gopalakrishnan, Publisher - SSM Institute of Textile Technology, Komarapalayam, 1997.
2	Managing Quality in Apparel Industries, Pradeep V Metha & Satish k. Bhardwaj, Publisher - New Delhi : H.S. Poplai for New Age International (P) Ltd, 1998.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://textilevaluechain.in/2020/05/05/textile-testing-and-quality-control/
2	https://textilelearner.blogspot.com/2012/09/textile-testing-quality-control-ttqc.html
3	https://textilelearner.blogspot.com/2011/04/introduction-of-textile-testing-and_4641.html
Course Designed By: Mrs. D. Anita Rachel	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	L	S	M	M	S	S
CO2	S	M	S	M	L	S	M	M	S	S
CO3	S	M	S	S	L	S	M	M	S	S
CO4	S	M	S	M	L	S	M	M	S	S
CO5	S	M	S	M	L	S	M	M	S	S

*S-Strong; M-Medium; L-Low

Course Code	43B	APPAREL MERCHANDISING I	L	T	P	C
Core		Paper IX	4	-	-	4
Pre-requisite		Basic Knowledge in Apparel	Syllabus Version		2020 – 2021	
Course Objectives:						
To be enriched in the concept of Apparel Merchandising and in Apparel business process.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember that Merchandising is a sub set of activities dealing with merchandise management.					K1
2	Understand what it involves in planning, buying and selling functions.					K2
3	Apply the separated planning and buying functions with separate teams handling these functions in co-ordination.					K3
4	Analyze the challenges in apparel business.					K4
5	Understand Merchandising business and its service.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Introduction to Merchandising				10 -- hours	
Merchandising: Introduction, Meaning- Apparel Merchandising, Process of merchandising, needs of merchandiser, Importance of merchandising, Types of Merchandising Company and its difference.						
Unit:2	Merchandising Concepts				12 -- hours	
Merchandising business & service business, Activities of merchandising, Concepts of „Six Rights“ – Organisation structure of an apparel industry – Classification of Exporters - Rating or Grading of export houses – Classification of buyers – Export merchandising and retail merchandising – Company profile and its contents.						
Unit:3	Merchandiser and its Details				12-- hours	
Types of merchandiser - Functions of a merchandiser – Essential requisites of a good merchandiser – Vendor sourcing, evaluation and development – Global sourcing – Vendor nomination by buyers – Reasons for vendor nomination.						
Unit:4	Concepts of Merchandising				14-- hours	
Work of merchandiser- role of merchandiser in garment Industry, apparel industry, super market and retail sales, Concepts of merchandising, concepts and apparel product lines, dimensions of product change, determination and development of product line and product range.						
Unit:5	Merchandising and its Flow Process				12-- hours	
Flow process of sample merchandising, Procedure of sample preparation, study on Teck pack details, Flow process of product merchandising, Procedure of product preparation, study on						

Product development. Preparation of shipment sample		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Apparel Merchandising, Robin Mathew, Book Enclave Publishers, Jaipur, 2008.	
2	Inside the Fashion Business, Mc Millan Publishing Co, 7 th Edition, 2004.	
3	Fashion Merchandising, Elian Stone, Glencoe/McGraw-Hill School Publication , 2004.	
Reference Books		
1	Apparel Merchandising, An integrated Approach, Krishnakumar, M, Abishek Publications, 2010.	
2	Apparel Merchandising, Jerry A & Rosenau, Fairchild Publications, London, 2007.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.fibre2fashion.com/industry-article/5743/merchandising-in-an-apparel-industry	
2	https://www.textileebook.com/2019/11/apparel-merchandising-by-r.html	
3	https://textilelearner.blogspot.com/2011/08/merchandising-merchandiser-garments.html	
Course Designed By: Mrs. D. Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	M	S	S	S	S	S	S
CO2	M	M	S	M	S	S	S	S	S	S
CO3	M	M	S	M	M	S	S	S	S	S
CO4	M	S	S	M	M	S	S	S	S	S
CO5	M	S	S	M	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	43P	GARMENT CONSTRUCTION II	L	T	P	C
Skill Based Subject	Practical V		-	-	6	3
Pre-requisite	Basic Knowledge in Stitches and Seams		Syllabus Version		2020 – 2021	
Course Objectives:						
To Train the students in construction of garments.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the Stitches and Seams.				K1	
2	Understand different machines used for garment manufacture.				K2	
3	Apply and carry out different types of stitching, button holing and button stitching.				K3	
4	Analyze all the styles in Garment Construction.				K4	
5	Analyze all the styles and its Construction.				K4	
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Part - A						
Experiments					60 -- hours	
Men's Wear						
Draft the Pattern, Cut & Construct Then and develop and construct the following.						
1. Men's Vest RN						
2..Men's Vest RNS						
3..Men's round neck T-shirt						
4.Men's Polo T-shirt						
5.Men's Hooded T-shirt						
6. Men's T-shirt with Raglan Sleeve						
7.Men's Trouser						
8.Men's Boxer shorts						
9.Men's Kimono Sleeve						
Part – B						
Experiments					30 -- hours	
Women's Wear						
Draft the Pattern, Cut & Construct Then and develop and construct the following.						
1. Ladies Basic Bodice.						
2. Nighties.						
3. Ladies Skirt						
Total Lecture hours					90 -- hours	
Text Book(s)						
1	Apparel Manufacturing, Hand Book, Jacob Solinger, Published by Bobbin Media Corporation, 1988.					

2	Technology Of Clothing Manufacture, Herold Carr & B.Latham, Wiley-Blackwell Publication, 2008.
3	Apparel Manufacturing and Technology, T.Karthik, P.Ganesan, D.Gopalakrishanan, CRC Press, 2016.
Reference Books	
1	Technology Of Stitches & Seams, Coats, Published by Viyella Limited, 1986.
2	Apparel Manufacturing Management System, Roche Daniel, Published by Elsevier, 2014.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://www.sciencedirect.com/topics/engineering/garment-construction
2	https://ncert.nic.in/vocational/pdf/ivsm103.pdf
3	https://www.cottonworks.com/topics/sourcing-manufacturing/garment-manufacturing/the-art-of-garment-manufacturing-garment
Course Designed By: Mr.P. Ellayaperumal	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	L	L	M	S	S	S	S
CO2	S	M	M	L	M	M	S	S	S	S
CO3	M	M	M	M	L	M	S	S	S	S
CO4	M	S	M	L	L	M	S	S	S	S
CO5	M	S	M	L	M	M	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	4AQ	TEXTILE TESTING PRACTICAL	L	T	P	C
Allied	Paper IV		-	-	6	3
Pre-requisite	Basic Knowledge in Textile testing		Syllabus Version		2020 - 2021	
Course Objectives:						
To Infuse understanding of Yarn, Fabric and Apparel Testing Methods.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the methods by which the physical and mechanical properties of textile materials and products are measured and investigated.					K1
2	Understand the Sampling and yarn quality parameters testing.					K2
3	Apply the Quality in Fabric and garment by Quality parameters testing Procedures.					K3
4	Analyze the Final Inspection Process in the Garment industry.					K4
5	Analyze and measure important characteristics of fabric, garment and Interpret the results obtained during evaluation of fabrics.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Part – A						
Experiments			90 -- hours			
To impart knowledge of fabric and garment quality parameters testing.						
1. Determination of count of yarn using wrap reel & weighing scale.						
2. Identification of Fibre using microscope and by chemical test.						
3. Determination of lea strength & CSP using lea strength tester.						
4. Determination of yarn count from fabric swatch using Beesley balance.						
5. Determination of twist of Single yarn/ Double Yarn using electronic twist tester.						
6. Determination of Bursting Strength Tester for the Knitted Fabric						
7. Analysis of given fabric sample for determining weight, CPI, WPI, SL, CL & yarn count.						
8. Determination of the Fabric Pilling Property for the given Fabric and grade it by Grey Scale and No of Pills.						
9. Analysis of Blend composition of given fabrics.						
10. Determination of thickness of fabric using fabric thickness gauge.						
11. Determination of CRA of fabric using Crease Recover Tester.						
12. Determination of colour fastness of given sample to washing by using Launderometer.						
13. Determination of colour fastness of given sample to rubbing by using Crockmeter						
14. Determination of colour fastness of given sample to perspiration by using Perspirometer						
15. Determination of dimensional stability% of a given fabric/garment to Washing.						
Total Lecture hours			90 -- hours			
Text Book(s)						
1	Principles of Textile Testing, J.E. Booth, Butterworth's Publication, 1986.					
2	Hand book of textile Testing & Quality Control, Elliot b. Grover & D.S. Hamby, Textile Book					

	Publishers (Interscience), New York, 1960.
3	Physical testing of Textiles, B.P.Saville, Woodhead Publishing Ltd, 1999.
Reference Books	
1	Textile Testing, P. Angappan & R. Gopalakrishnan, Publisher - SSM Institute of Textile Technology, Komarapalayam, 1997.
2	Managing Quality in Apparel Industries, Pradeep V Metha & Satish k. Bhardwaj, Publisher - New Delhi : H.S. Poplai for New Age International (P) Ltd, 1998.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://textilevaluechain.in/2020/05/05/textile-testing-and-quality-control/
2	https://textilelearner.blogspot.com/2012/09/textile-testing-quality-control-ttqc.html
3	https://textilelearner.blogspot.com/2011/04/introduction-of-textile-testing-and_4641.html
Course Designed By: Mrs.D.Anita Rachel	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	L	S	M	M	S	S
CO2	S	M	S	M	L	S	M	M	S	S
CO3	S	M	S	S	L	S	M	M	S	S
CO4	S	M	S	M	L	S	M	M	S	S
CO5	S	M	S	M	L	S	M	M	S	S

*S-Strong; M-Medium; L-Low

A purple book cover with a white border. The top and bottom edges are rounded. The top-left corner has a white decorative element resembling a scroll. The bottom-left corner has a white decorative element resembling a scroll. The text "Fifth Semester" is centered in white. There are blue and yellow decorative elements on the left and right sides, resembling stylized wings or arrows.

Fifth Semester

Course Code	53A	APPAREL PRODUCTION MANAGEMENT	L	T	P	C
Core	Paper X		4	-	-	4
Pre-requisite	Basic Knowledge in Apparel Goods		Syllabus Version	2020 - 2021		
Course Objectives:						
1. To Emphasis on the improved methods of material control in apparel production. 2. To acquaint student with quality concepts for implementing quality in apparel production.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember and practise better methods in apparel production.					K1
2	Understand the planning to take informed business decisions in the apparel industry.					K2
3	Apply material control in apparel production.					K3
4	Analyze the concepts and time study in Garment units.					K4
5	Understand the Qualitative and Quantitative Analysis of Production.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Garment Industry Plant Location				12 -- hours	
Introduction To Garment Industry Plant Location – Location Economics – Plant Layout – Process Layout – Product Layout – Combination Layout – Introduction To Balancing Theory – Balance Control – Balancing Exercises For Garment Industry.						
Unit:2	Materials Management				12 -- hours	
Materials Management: classification of materials – importance and objectives of Materials Management. Inventory – classification – inventory control models- factors influencing inventory control – ABC analysis - EOQ. MRP: introduction – concepts and advantages-factors influencing the requirements of inventory. CRP: types- measurement & determination of capacity – CRP inputs & outputs. Optimum level of production.						
Unit:3	Method Study and Work Measurement				12-- hours	
Concept And Need – Method Study And Work Measurement – Techniques – Process Chart Symbol – Process Flow Chart – Flow Diagrams – String Diagrams – Multiple Activity Chart – Principles Of Motion Economy – SIMO Chart – Time Study Methods – Standard Time Data – Ergonomics With Special Reference To Garment Industry.						
Unit:4	Methods of Production Systems				12-- hours	
Methods of Production Systems – Job, Mass & Batch – Section Systems, Progressive Bundle System & „Synchro“ System – Conveyor Systems – Unit Production System – Quick Response. Productivity Concepts – Measurement Of Productivity – “Man Machine Material” – Criteria For Increasing Productivity.						

Unit:5		Analysis of Production	12-- hours
Function, Qualitative and Quantitative Analysis of Production - Coordinating Departmental Activities - Flow Process and Charts For Garment - Scheduling Calculations - Assigning Operators Optimally - Setting Up Complete Balanced Production Lines To Produce Given Amount Of Garments.			
		Total Lecture hours	60-- hours
Text Book(s)			
1	Apparel Production Management, Dr.K.Prabha Kumari & D.Anita Rachel.,Karangal Publication,ISBN:978-81-93623-99-2, 2018.		
2	Apparel Manufacturing, Hand Book, Jacob Solinger, Published by Bobbin Media Corporation, 1988.		
3	Technology Of Clothing Manufacture, Herold Carr & B.Latham, Wiley-Blackwell Publication, 2008.		
4	Introduction To Clothing Manufacture, Gerry Cooklin, The Blackwell Publication, 1991.		
Reference Books			
1	Introduction To Production Management, A. J. Chuter, Published by BSP Professional, 1988.		
2	Personal Management And Industrial Relations,Tripathi, Publisher: Sultan Chand And Sons, 2013.		
3.	Industrial Engineering And Management, OP. Khanna, Dhanpat Rai Publication, 2018.		
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]			
1	https://apparelresources.com/business-news/manufacturing/production-management-better-run-factories/		
2	https://www.onlineclothingstudy.com/2020/07/9-video-tutorials-on-apparel-production.html		
3	https://clothingindustry.blogspot.com/2017/11/production-planning-control-garments.html		
Course Designed By: Mr. P.Sankarakarthikeyan			

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	L	M	S	S	S	S
CO2	M	M	M	M	M	M	S	S	S	S
CO3	M	M	M	L	L	M	S	S	S	S
CO4	M	M	M	M	L	M	S	S	S	S
CO5	M	M	M	M	M	M	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	53B	APPAREL MERCHANDISING II	L	T	P	C
Core		Paper XI	4	-	-	3
Pre-requisite		Basic Knowledge in Merchandise	Syllabus Version		2020 - 2021	
Course Objectives:						
To be enriched in the concept of Apparel Merchandising and in Apparel business process						
To have a strong input in the Accessories and trims used in the Garment Industries.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember that Merchandising is a sub set of activities dealing with merchandise management.					K1
2	Understand what it involves in planning, buying and selling functions.					K2
3	Apply the separated planning and buying functions with separate teams handling these functions in co-ordination.					K3
4	Analyze the challenges in apparel business.					K4
5	Understand the Accessories and trims used in the Garment Industries.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Process Flow In Apparel Industry				12 -- hours	
Process flow in apparel industry – Buyer sourcing & communication – Enquiry Order confirmation – order review and its importance – Planning & programming: Master planning, Scheduling or route card – Factors for route card - programming for yarn, knitting, dyeing, stitching, sampling, accessories – Samples: Meaning & importance – Types of samples – expedition of samples.						
Unit:2	Inspection				13 -- hours	
Inspection and its types – Testing – Check points before cutting - Pilot run or trial run and its importance – Approvals - Types of approvals – Shipping marks – Accessories and Trims - Importance – the concept– the difference between accessories and trims – Sewing threads - zippers – Buttons – Labels – Lining and Interlining – Poly bags – Hangers – Cartons – Lace – Elastic ,Draw strings – Velcro – Snap fastness – Hooks - Final inspection procedures – Self, Second and Third party inspection - Effective expedition procedures.						
Unit:3	Document Formats				11-- hours	
Order sheet and its contents – Packing list and its contents – Document formats: order sheet, packing list, invoice, inspection and testing reports etc., - Assortment and its types. Documents recording and maintenance – Claims and reasons for claims - Factory audits – Buyer's and its types – Export – Import – Buyer's code of conducts						
Unit:4	Scope Of Advertising				12-- hours	
Advertising- scope, importance, types, merits & demerits; sales promotion, personal selling.						

Retail management. Export associations – Apparel Export Promotion Council – Journals and magazines related to apparel and textiles –Trade shows and Fairs – Participation in trade shows – Advantages of trade shows and fairs - Apparel & Textile Trade shows and fairs in India.

Unit:5	Visual Merchandising	12-- hours
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Visual merchandising, Visual display - Fashion communication – Visual / 3D visual –Elements of visual merchandising, Comparison of Visual Merchandising with Fashion Merchandising Visual merchandising as a communication tool, presentations in visual merchandising, Software used in merchandising, Merchandise Planning Software, buy ease software.

	Total Lecture hours	60-- hours
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Text Book(s)

- | | |
|---|--|
| 1 | Apparel Merchandising, Robin Mathew, Book Enclave Publishers, Jaipur, 2008. |
| 2 | Inside the Fashion Business, Mc Millan Publishing Co, 7 th Edition, 2004. |
| 3 | Fashion Merchandising, Elian Stone, McGraw-Hill Publication, 2004. |

Reference Books

- | | |
|----|---|
| 1 | Apparel Merchandising, An integrated Approach, Krishnakumar, M, Abishek Publications, 2010. |
| 2 | Apparel Merchandising, Jerry A & Rosenau, Fairchild Publications, London, 2007. |
| 3. | Apparel Production Management, Dr.K.Prabha Kumari & D.Anita Rachel .,Karangal Publication,ISBN:978-81-93623-99-2, 2018. |

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

- | | |
|---|---|
| 1 | https://textilelearner.blogspot.com/2013/10/role-of-merchandiser-in-apparel-industry.html |
| 2 | https://clothingindustry.blogspot.com/2017/12/merchandiser-merchandising-garment.html |
| 3 | https://www.onlineclothingstudy.com/2015/05/apparel-merchandising-notes.html |

Course Designed By: Mrs.D.Anita Rachel

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	M	M	S	S	S	S	S
CO2	M	M	S	M	M	S	S	S	S	S
CO3	M	M	S	M	M	S	S	S	S	S
CO4	S	S	S	S	M	S	S	S	S	S
CO5	M	M	S	M	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	53C	TOTAL QUALITY MANAGEMENT	L	T	P	C
Core		Paper XII	4	-	-	3
Pre-requisite		Basic Knowledge in Quality Management	Syllabus Version		2020 - 2021	
Course Objectives:						
To Facilitate the understanding of Quality Management principles and process.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the Quality Functions and Quality Planning's.					K1
2	Understand the Statistical Quality Control tools.					K2
3	Apply the tools and techniques of quality management to manufacturing and services processes.					K3
4	Analyze the Control charts.					K4
5	Remember the ISO norms and its standards.					K1
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Quality				12 -- hours	
Quality – Evolution of Quality management – Quality Function and Quality Planning – Basic concepts of Total Quality Management (TQM) – Principles of TQM – Important Phases of TQM – Quality Trilogy – Four pillars of TQM – PDCA cycle & PDSA cycle – Kaizan concept – 5“S Philosophy – Quality Circles.						
Unit:2	Statistical Quality Control				12 -- hours	
Statistical Quality Control (SQC) : Definition – SQC techniques – Frequency distributions: Discrete and Continuous – Measures of Central tendency: Mean, Median & Mode – Measures of dispersion: Range, Mean Range, Mean Deviation, Percentage Mean Deviation, Standard Deviation, and Coefficient of Variation – Normal distribution – Binomial distribution – Poisson distribution.						
Unit:3	Control Charts				12-- hours	
Control charts: concepts and uses – Control limits – Control charts for Variables and Attributes: X Charts – R chart – P chart – NP chart – C chart – Acceptance sampling – Types of sampling plans: Single, Double and Multiple Sampling plans – OC curves – AQL and LTPD – Sampling errors and sampling risks – Producer's risk and Consumer's risk.						
Unit:4	ISO Standards				12-- hours	
ISO 9000 Standards: Meaning & Definition – ISO 9000 family of standards – Elements of ISO – Benefits of ISO 9000 System – Study on ISO 9001:2000 Guidelines and Standard Clauses – Implementation Procedures and requirements for ISO 9001:2000 system – Quality Manual and its contents – Accreditation and Certification agencies – Quality audit – Types of quality audit – Audit procedure – Requirements and characteristic of a Quality auditor.						

Unit:5		Environmental Management System	12-- hours
Environmental Management System (EMS) – Meaning & Definition – Elements of EMS – Benefits of EMS – Environmental Policies – Implementation of ISO 14000 – Study on other management systems: SA8000, OHSAS 18000, WRAP.			
		Total Lecture hours	60-- hours
Text Book(s)			
1	Statistical Methods, Dr. S.P.Gupta,Vikas Publication, 2012.		
2	Quality Control Handbook, J.M. Juran, McGraw Hill Publications, 2007.		
3	Statistic, V.K.Kapoor, Sultan Chand & Sons Publications, 2017.		
Reference Books			
1	Total Quality Management – Bhaskar, S - Anuradha Publications, Kumbakonam,2011 .		
2	Total Quality Management – Shridhara Bhat, K -, Himalaya Publishing Corporation New Delhi, 2009.		
3.	Handbook of Total Quality Management - Armstrong , Jaico Publications, New delhi, 2009.		
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]			
1	https://asq.org/quality-resources/total-quality-management		
2	https://www.investopedia.com/terms/t/total-quality-management-tqm.asp		
3	https://managementhelp.org/quality/total-quality-management.html		
Course Designed By: Dr.K.Prabha Kumari			

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	L	L	M	M	S	L	M	M	S
CO2	M	L	L	L	M	S	L	M	M	S
CO3	L	L	M	L	M	S	L	M	M	S
CO4	M	M	L	L	M	S	L	M	M	S
CO5	L	L	L	L	M	S	L	M	M	S

*S-Strong; M-Medium; L-Low

pricing, conversion Cost pricing, differential Cost pricing ,variable Cost pricing, direct Cost pricing derivation of Cost of apparel products-woven/knits		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Cost Accounting, S.P.Jain and KL. Narang, Kalyani Publishers,New Delhi.Edn.2005.	
2	Cost Accounting, R.S.N. Pillai and V. Bagavathi, Publishers, S. Chand and Company Ltd., New Delhi.Edn.2004.	
3	Apparel Costing, A functional Approach – Krishnakumar, M, Abishek Publications, Chandigarh, 2012.	
Reference Books		
1	Garment Manufacturing Technology,Rajkishore Nayak, Rajiv Padhye,Woodhead Publication, 2015.	
2	Apparel Costing,Andrea Kennedy,Andrea Reyes,Francesco Venezia, Bloom Bury Publication, 2020.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.textiletoday.com.bd/fashion-merchandising-garment-Costing/	
2	https://www.fibre2fashion.com/industry-article/7159/garment-Costing-techniques	
3	https://textilecalculation.blogspot.com/2014/11/calculation-of-garment-Costing.html	
Course Designed By: Mr.V.Rajendran		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	S	S	S	S	M
CO2	M	M	M	M	M	S	S	S	S	M
CO3	M	M	M	M	L	S	S	S	S	M
CO4	M	L	L	L	L	S	S	S	S	M
CO5	M	M	M	M	M	S	S	S	S	M

*S-Strong; M-Medium; L-Low

Course Code	53P	COMPUTER AIDED DESIGNING	L	T	P	C
Core	Practical VI		-	-	5	3
Pre-requisite	Basic Knowledge in CAD		Syllabus Version		2020 – 2021	
Course Objectives:						
The student should be made to:						
<ul style="list-style-type: none"> To train the students in CAD used for pattern making of garments. Be exposed to presentation and visualization tools. 						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember practical experience on pattern making of different wears and maker planning and optimization.					K1
2	Understand the CAD Operations.					K2
3	Apply good programming design methods for program development.					K3
4	Analyze the tools in the computer.					K4
5	Understand Fit analysis of the given pattern.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Experiments			75 -- hours			
CAD software is used to practice the following on the styles mentioned,						
<ol style="list-style-type: none"> Create Pattern on computer screen, adding details to patterns. Saving, extracting & editing patterns from stock library of Patterns. Grading patterns on different size scale. Making Marker plan for cutting fabrics. Estimating lay length and calculating marker efficiency. Fit analysis of the given pattern. 						
Styles						
<ol style="list-style-type: none"> Men's Basic T Shirt Raglan with Pocket Men's Polo T Shirt Men's Trouser Men's T-Shirt with hood Men's Inner Garment – Vests RN / RNS Briefs Ladies Skirt Women's Nightwear Kid's Wear – Romper Kid's Wear – A Line frock Children's Suits and Pyjama 						

	Total Lecture hours	75 -- hours
Text Book(s)		
1	Pattern Cutting for Clothing Using CAD – How to use Lectra Modaris Pattern cutting Software,Woodland Publishing Ltd, 2012.	
2	Advances in Apparel Production, Catherine Fairhurst, Woodhead Publications, 2008.	
Reference Books		
1	CAD/CAM, Mikell P.Groover, E- Book, Pearson Publications, 1983.	
2	Apparel Production Management, Dr.K.Prabha Kumari and D.Anita Rachel .,Karangal Publication,ISBN:978-81-93623-99-2, 2018	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.techopedia.com/definition/2063/computer-aided-design-cad	
2	https://www.inc.com/encyclopedia/computer-aided-design-cad-and-computer-aided-cam.html	
3	https://www.autodesk.com/solutions/cad-software	
Course Designed By: P.Sanakarakarthikeyan		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	M	M	M	L	L	S	S	M	S
CO2	L	M	M	M	M	L	S	S	M	S
CO3	L	M	M	M	L	L	S	S	M	S
CO4	M	M	M	M	L	L	S	S	M	S
CO5	L	M	M	M	M	L	S	S	M	S


*S-Strong; M-Medium; L-Low

Course Code	5ZV	EXPORT SAMPLING AND PRODUCT DEVELOPMENT PROJECT	L	T	P	C
Skilled Based Subject	Skilled Based Subject III		-	-	5	3
Pre-requisite	Basic Knowledge in Apparel Product Development		Syllabus Version		2020 - 2021	
Course Objectives:						
To train the students in Export sampling and apparel product development includes sourcing of fabrics and designing of apparel.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember practical experience on Yarn and Fabrics					K1
2	Understand and Source the fabric and design the apparel for specific end uses.					K2
3	Apply good programming design methods for program development.					K3
4	Analyze the Sewing process and finish the apparel for specific end uses.					K4
5	Understand Export sampling and apparel product development					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
EXPERIMENTS						
75 -- hours						
Export Order or Export Enquiry will be given and asked to Design the Samples as per the Specification given below and also they have to prepare a Report containing the following details for the Viva Presentation.						
1. Yarn Details & Composition						
2. Yarn Consumption per Garment						
3. Fabric Details – Design, GSM, Machine Etc.,						
4. Size Details						
5. Factory Cost of Garment						
(Totally 6 Export Orders & 6 Export Enquiries Related to Following Styles Shall Be Given)						
(Men's Basic T Shirt / Men's Crew Neck Shirt / Men's Polo T Shirt / Men's High Neck Shirt / Men's Boxer Short / Men's Bermuda Short / Men's Trouser / Men's Full Arm Shirt / Men's V – Neck Shirt / Men's Collar Neck Shirt / Men's Inner Garment – Vests Rn / Rns / Men's Under Garment: Briefs With Inner Waist Band or Outer Waist Band of Various Models - Trunk Type. / Ladies Skirt With Pleats / Ladies Blouse / Ladies Basic Bodice / Women's Nighties / Kid's Wear of Various Styles / Children's Suits And Pyjama)						
Total Lecture hours						
75 -- hours						
Text Book(s)						
1	The Impact of Globization in a developing Market, A.Anthony, Mary Joseph.T, Published by SMEs in Indian Textile, 2010.					
2	Analysing Sample Production Processes in the Apparel Industry and a Model Proposal,					

	Published by Magic world of textiles, 2012.
Reference Books	
1	Apparel Merchandising by R. Rathinamoorthy and R. Surjit, Woodhead Ltd publication, 2017.
2	Advances in Apparel Production, Dr Catherine Fairhurst, Woodhead Publishing Series in Textiles, 2008.
3	Related Articles, Journals and Magazines.
4	Review of Tech-Pack and Order sheets.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://www.fibre2fashion.com/industry-article/6969/sampling-in-garment-exports-and-its-importance
2	https://clothingindustry.blogspot.com/2018/09/sampling-process-apparel-industry.html
3	http://textilemerchandising.com/garments-sampling-process/
Course Designed By: Mr.D.Anita Rachel	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low



Sixth Semester

Course Code	63A	INTERNATIONAL TRADE AND DOCUMENTATION	L	T	P	C
Core		Paper XIV	4	-	-	3
Pre-requisite		Basic Knowledge in International trade.	Syllabus Version		2020 - 2021	
Course Objectives:						
To study the Trade procedures and documentation formalities are a critical part of International Business Management. This subject aims at imparting knowledge of trade procedures and documentation formalities.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember and evaluate and justify the various documents for processing export and import orders.					K1
2	Understand the implications of foreign trade policy.					K2
3	Apply the legal implications in the area of exports and imports.					K3
4	Analyze and assess the various terms and conditions of export finance.					K4
5	Understand the imparting knowledge of trade procedures and documentation formalities.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Firm Establishment				10 -- hours	
Firm establishment: introduction – export promotion councils and their role – registration Formalities - RCMC –IE code – RBI code – garment classification and categories for various countries – quota – quota distribution methods – quota transfer.						
Unit:2	Foreign Trade Documents				14 -- hours	
Foreign trade documents: need, rationale and types of documents relating to goods – invoice – packing note and list – certificate of origin – certificate relating to shipments – mate receipt – shipping bill – cart ticket – certificate of measurement – bill of lading – air way bill – documents relating to payment – letter of credit – types of L/C - bill of exchange – letter of hypothecation – bank certificate for payment – document relating to inspection – certificate of inspection – GP and other forms.						
Unit:3	Import Procedure				12-- hours	
Import procedure : import license – procedure for import license – import trade control regulation procedure – special schemes – replenishment license – advance license – split up license – spares for after sales service license – code number – bill of entry.						
Unit:4	Shipment And Customs				12-- hours	
Shipment and customs: Preshipment inspection and quality control – foreign exchange formalities –						

Preshipment documents - documentation terms - excise and customs clearance of export cargo – shipment of goods and port procedures – customs clearance of import cargo. Post – Shipment formalities and procedures – claiming duty drawback and other benefits.

Unit:5	Payment And Deliveries	12-- hours
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Payment and deliveries: terms of delivery – INCO terms – EXW – FCA – FOB – CFR – CIF – CPT – DAF – DDP – DDU. Terms of payment – open account – cheque – cash payment against documents – bank payment against documents (LC) – security and Cost of various payment terms – Assessing the risk in payment – role of ECGC and standard policy.

	Total Lecture hours	60-- hours
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Text Book(s)

- | | |
|---|---|
| 1 | International Trade and Documentation, Edward G Hinkelman, Publisher: World Trade Press 2001. |
| 2 | Streamline Your Export Paper Work, Bose. A., Published by International Trade Form, Oct Dec 1965. |
| 3 | Export and Import Management, Aseem Kumar, Excel Publications, 2007. |

Reference Books

- | | |
|---|---|
| 1 | Export Import Procedures and Documentation, Thomas E. Johnson and Donna L. Bade, Harper Collins Publishers, 2010. |
| 2 | Hand Book Of Import And Export Procedures, by Ajay Srivastava, Published by Govt. Of India: 2015. |

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

- | | |
|---|---|
| 1 | https://www.businessmanagementideas.com/international-trade/list-of-documents-used-in-international-trade-business/17403 |
| 2 | http://ebooks.lpude.in/management/mba/term |
| 3 | https://tradelogistics.co.za/wp-content/uploads/2016/09/Documents-used-in-International-Trade.pdf |

Course Designed By: Dr.N.Sivakumar

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	L	M	M	M	S	S	S
CO2	M	M	M	M	M	M	M	S	S	S
CO3	M	M	M	M	M	M	M	S	S	S
CO4	M	M	M	M	M	M	M	S	S	S
CO5	M	M	M	L	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	63B	APPAREL RETAILING	L	T	P	C
Core		Paper XV	4	-	-	4
Pre-requisite		Basic Knowledge in Apparel Markets	Syllabus Version		2020 - 2021	
Course Objectives:						
To Introduce students to the concept of Retail, Retailing strategies and legal issues of Retail sector in Apparel Industries.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember and have knowledge on Retail Management, types of retailing, strategies and retail management.					K1
2	Understand the Customers and to reach the Market Targets.					K2
3	Apply the Retailing strategies.					K3
4	Analyze the Retail operations.					K4
5	Analyze the Retail Brands and Branding.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1		Retail & Retailing	12 -- hours			
Retail & Retailing – Meaning & definition – Scope of apparel retailing – Retailing terminologies – Types of retailers and retail formats – Global retailing scenario – Retailing scenario in India – Functions of retailers.						
Unit:2		Retail Strategies	12 -- hours			
Retail strategies : Operational excellence , Product differentiation, Customer intimacy – Growth strategies – Market expansion strategies – Store planning – Location planning – Store design – Store design & retailing image mix – Space mix – Effective retail space management – Store layout – Floor space management						
Unit:3		Retail Merchandising	12-- hours			
Retail merchandising – Merchandise planning – Merchandise hierarchy – Buying function – Category management – Mark up & Mark down – Shrinkage in merchandising management – Gross margin return on inventory – Supply chain management in apparel retailing – ERP in apparel industry.						
Unit:4		Retail Operations	12-- hours			
Retail operations – Significant areas – Store operating parameters related to customers, stocks, space, employee, finance – Managing retail personnel – Manpower planning – Types of employees in retail – Remuneration structure – Visual Merchandising (VM): Definition & Meaning – VM Techniques – Elements of VM – Functions of a Visual Merchandiser.						

Unit:5	Retail Brands	12-- hours
Retail Brands and Branding – Functions of brands – Types of brands – Branding strategies – Store brands or private labels – Store brands Vs National brands – Famous apparel retail brands – Packaging – Functions of packaging – Kinds of packaging – Requisites of good package – Customer service management in retail – Service management model.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Retail Management – Functional Principles & Practices”, Jaico Books Publications, Gibson G. Vedamani, 2012 .	
2	Art of Retailing, Arun Mahabharata, Lotus Book Publication Press, New Delhi, 2008.	
3	Fundamentals of Retailing – Madan, Tata McGraw Hill Education, New Delhi, 2009.	
Reference Books		
1	Retailing Management, Levy, McGraw Hill Education, Diamond Publications, Delhi, 2018	
2	Fashion Retailing, Dimitri Koumb’s,Bloombury Publiser,2014.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.marketresearchreports.com/apparel-retailing	
2	https://smallbusiness.chron.com/analysis-retail-apparel-industry-70514.html	
3	https://www.marketresearch.com/Consumer-Goods-c1596/Consumer-Goods-Retailing-c80/Apparel-Retailing-c1093/	
Course Designed By: Mr.V.Rajendran		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	L	M	M	M	S	S	S	S	M
CO2	M	L	M	M	M	S	S	S	S	M
CO3	M	M	M	L	L	S	S	S	S	M
CO4	M	L	L	L	L	S	S	S	S	M
CO5	M	M	M	M	M	S	S	S	S	M

*S-Strong; M-Medium; L-Low

Course Code	63C	ENTREPRENEURSHIP AND SMALL BUSINESS DEVELOPMENT	L	T	P	C
Core	Paper XVI		4	-	-	3
Pre-requisite	Basic Knowledge in Entrepreneurial Career		Syllabus Version		2020 - 2021	
Course Objectives:						
Study of this subject provides an understanding of the scope of an entrepreneur, key areas of development, financial assistance by the institutions, methods of taxation and tax benefits.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the entrepreneurial skills essential for the successful launch and scaling-up of an enterprise.					K1
2	Understand the scope of an entrepreneur.					K2
3	Apply the key areas of development of a new concern.					K3
4	Analyze a person for entrepreneurial career.					K4
5	Analyze the Business Projects.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Entrepreneurship				12 -- hours	
Entrepreneurship: Concept and Definitions; Entrepreneurship and Economic Development; Classification and Types of Entrepreneurs; Entrepreneurial Competencies; Factor Affecting Entrepreneurial Growth – Economic, Non-Economic Factors; EDP Programmes; Entrepreneurial Training; Traits/Qualities of an Entrepreneurs; Entrepreneur; Manager Vs. Entrepreneur.						
Unit:2	Entrepreneurial Opportunity				12 -- hours	
Opportunity / Identification and Product Selection: Entrepreneurial Opportunity Search and Identification; Criteria to Select a Product; Conducting Feasibility Studies; Project Finalization; Sources of Information.						
Unit:3	Enterprises				12-- hours	
Small Enterprises and Enterprise Launching Formalities : Definition of Small Scale; Rationale; Objective; Scope; Role of SSI in Economic Development of India; SSI; Registration; NOC from Pollution Board; Machinery and Equipment Selection; Project Report Preparation; Specimen of Project Report; Project Planning and Scheduling using Networking Techniques of PERT / CPM; Methods of Project Appraisal.						
Unit:4	Management Of Small Business				12-- hours	
Role of Support Institutions and Management of Small Business : Director of Industries; DIC; SIDO; SIDBI; Small Industries Development Corporation (SIDC); SISI; NSIC; NISBUD; State Financial Corporation SIC; Marketing Management; Production Management; Finance Management; Human Resource Management; Export Marketing; Case Studies.						

Unit:5	Incentives And Subsidies	12-- hours
Incentives and subsidies – Subsidised services – subsidy for market. Transport – seed capital Assistance – Taxation benefits to SSI role of entrepreneur in export promotion and import substitution.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Small-Scale Industries and Entrepreneurship, Desai, Vasant, Himalaya Publishing House, Delhi, 2003	
2	Entrepreneurship Management, Kaulgud, Aruna, Vikas Publishing House, Delhi, 2003	
3	Entrepreneurship Ideas in Action. Cynthia, L , Publishing House Thomson Asia P v t and Greene Ltd.,Singapore , 2004.	
4	Entrepreneurship Development by Dr.K.Prabha Kumari, Kongunadu Publication ISBN: 978-93-8770-09-7, 2017.	
Reference Books		
1	Entrepreneurial Success: A Psychological Study, Chandra, Ravi, Sterling Publication Pvt.Ltd., New Delhi, 2003.	
2	Entrepreneurship Development: An Analytical Study, Balaraju, Theduri Akansha Publishing House, Uttam Nagar, New Delhi, 2004.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.researchgate.net/publication/259843889	
2	https://study.com/directory/category/Business/Entrepreneurship_and_Small_Business_Development.html	
3	https://ncert.nic.in/textbook/pdf/kebs109.pdf	
Course Designed By: P.Sanakarakarthikeyan		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	M	M	S
CO2	M	M	M	M	M	M	M	M	M	S
CO3	M	M	M	M	M	M	M	M	M	S
CO4	M	M	M	M	M	M	M	M	M	S
CO5	M	M	M	M	M	M	M	M	M	S

*S-Strong; M-Medium; L-Low

Course Code	6ZV	PROJECT	L	T	P	C
Skill Based Subject		Skill Based Subject IV	-	-	10	3
Pre-requisite		Basic Knowledge in To Develop new Research and Apparel Product	Syllabus Version		2020 - 2021	
Course Objectives:						
To Train the students in develop a Research Projects and Articles.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember practical experience in Project Management in all textile areas.					K1
2	Understand how to develop new Research and Apparel Product					K2
3	Apply good programming design methods for program development.					K3
4	Analyze the new concepts of investigate in the Projects.					K4
5	Understand the Research methods.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Project Guidelines						
150 -- hours						
Students have to undertake project in the areas of Spinning / Knitting / Weaving/ Wet Processing / Garment Manufacturing Industry /Apparel Production Management / Technical Textiles / Fashion Marketing / Merchandising Techniques / Inspection and Quality Control / Study on Apparel Costing / Textile Management / Textile Study projects and Case Studies related to Apparels Industries. A Team consisting of Internal & External Experts will evaluate the Project Report. The Viva-Voce will be conducted.						
Total Lecture hours						
150-- hours						
Text Book(s)						
1	Research Methodology Methods and Techniques, Kothari C.R., Published by Wishwa Prakashan,2004.					
2	Research Methodology, R.P.Misra, Publisher, Concept Publishing Company Pvt. Limited, 2016					
3	Research Methodology by Dr.N.Aumugam, Saras Publication, 2018.					
Reference Books						
1	Review of Research Interviewing, Elliot G Mishler, Published by Context & Narrative, 1990.					
2	Fundamental of Research Methodology & Statistics, Yogesh Kumar Singh, New Age Publication, 2006.					
3.	Related Reviews in Articles, Journals and Magazines.					

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://www.researchgate.net/publication/316023695
2	https://link.springer.com/article/10.1186/s40691-015-0039-4
3	https://clothingindustry.blogspot.com/2018/09/product-development-process-apparel.html
Course Designed By: Mrs.D.Anita Rachel	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low





Elective Courses

Course Code	5EA	FASHION AND APPAREL MARKETING	L	T	P	C
Elective		Paper I A	4	-	-	4
Pre-requisite		Basic Knowledge in Marketing	Syllabus Version		2020 - 2021	
Course Objectives:						
The main objectives of this course are to: To Impart knowledge on principles marketing, marketing research. Domestic and international market.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the factors affecting domestic and international market.					K1
2	Understand on Principles of marketing.					K2
3	Apply the latest fashion trends in Apparels.					K3
4	Analyze the consumer behaviours.					K4
5	Understand the Apparel Marketing Strategies.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1						
Introduction to Marketing			12-- hours			
Meaning and classification of marketing, Fashion marketing, fashion market – size and structure, marketing environment – micro and macro marketing environment, trends in marketing environment.						
Unit:2						
Marketing Function			12-- hours			
Marketing function – assembling, standardization and grading and packaging, product planning and development, importance of fashion products, nature of fashion products. The fashion industry and new product development, product-mix and range planning, fashion and related cycles.						
Unit:3						
Fashion Advertising			12-- hours			
Fashion advertising and preparation of advertising for apparel market, advertising media used in Apparel market – advantages and limitations, advertising department – structure and functions, advertising agencies- structure and functions. Advertising budget.						
Unit:4						
Fashion Sales and Promotion			12-- hours			
Fashion sales promotional programmed for apparel marketing, communication in promotion, personal selling, point of purchase, sales promotion – objectives and methods, Marketing research – definition, scope and process – areas of research.						

Unit:5	Pricing Policies	12-- hours
Pricing policies and strategies for apparel products, Importance of price policies, Functions and factors influencing pricing – internal and external, pricing strategies for new products, methods of setting prices.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Marketing – R S N P illai and Bhagavathi, Published by S Chand and company ltd, New Delhi, 1987.	
2	Fashion Business, Dr.K.Prabha Kumari & D.Anita Rachel .,Abhishek Publications. ISBN: 978-81-8247-68-4, 2018.	
3	Marketing Management,Dr B K Chatterjee Jaico, Juice Publishing house, Bombay 1982.	
4.	Principles of Marketing, Backman T N, Munard H H and Davidson W R , Ronald Press Company, New York, 1970.	
Reference Books		
1	Marketing Principles and methods, Philip C F and Duncon, Irwin Publications,	
2	Fashion Marketing, Mike Easey, Published by Black well Science Ltd, 1995.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	http://content.inflibnet.ac.in/data-server/eacharya-documents/56b0853a8ae36ca7bfe81449 .	
2	https://www.referralcandy.com/blog/fashion-marketing-examples/	
3	https://www.brandignity.com/fashion-clothing-marketing-services/	
Course Designed By: Mrs.D.Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	L	L	L	L	L	S	S	S	S
CO2	M	L	M	M	L	M	S	S	S	S
CO3	L	L	L	L	L	M	S	S	S	S
CO4	M	L	L	M	L	L	S	S	S	S
CO5	L	M	M	M	L	M	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	5EB	BUSINESS COMMUNICATION	L	T	P	C
Elective	Paper 1 B		4	-	-	4
Pre-requisite	Basic Knowledge in English		Syllabus Version	2020 – 2021		
Course Objectives:						
<p>The main objectives of this course are to:</p> <p>To make learners acquire listening and speaking skills in both formal and informal contexts.</p> <p>To help them develop their reading skills by familiarizing them with different types of reading strategies.</p>						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember and to speak convincingly.					K1
2	Understand and express their opinions clearly.					K2
3	Apply and initiate a discussion, negotiate, and argue using appropriate communicative strategies.					K3
4	Analyze reading skills by familiarizing them with different types of reading strategies.					K4
5	Apply effective communication in business.					K3
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Meaning Of Communication				12-- hours	
Meaning of communication – Importance of effective communication in business – Objectives of communication - Media – Types – Principles, Process and Barriers - Methods to reduce barriers. Role of English Language in business communication - The sentence – Types – Verbs – Main and auxiliary – Agreement of verb and subject – Use of articles and prepositions – “WH” question and „yes“ or „no“ type questions - Punctuation and use of capital letters – Common errors- words often confused – Antonyms- Synonyms. .						
Unit:2	Functions Of A Business Letter				12-- hours	
Functions of a business letter - Foreign words used in correspondence – The layout planning – Enquiries and replies – Orders and execution – Credit and status enquiries.						
Unit:3	Complaints				12-- hours	
Complaints – Collection letters – Circular – Sales letters - Bank and insurance correspondence – Import and export correspondence - Agency correspondence – Correspondence of a company secretary.						
Unit:4	Memos and Forms Of Messages				12-- hours	
Memos and forms of messages – Office correspondence – Telegrams – E-mail – Fax – Interview Letters – Testimonials – Appointments – Confirmation – Resignation – Report writing.						

Unit:5	Agenda and Minutes Of Meeting	12-- hours
Agenda and minutes of meeting – Advertisement – Speech making – Interviews- Information technology of the future - Telex - Teleconferencing - Fax-Internet – Multimedia.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Essentials of Business communication, Sultan & Chand Publisher, Rajendra paul, Korlahalli.J.S, 2001.	
2	Developing Communication Skills, Krishna Mohan, Laxmi Publications, 2009.	
Reference Books		
1	A Remedial English Grammar for Foreign Students, F.T.Wood, Published by Macmilan, 2014.	
2	Basic business communication, Lesikar & Flatiley, Jaico Publications, Chennai, 2004.	
3	Business communication Strategies, Matha Kutty & Monipally, TBH Publications, Coimbatore, 2004.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.nextiva.com/blog/what-is-business-communication.html	
2	https://blog.smarp.com/11-reasons-why-business-communication-is-crucial-for-companys-success	
3	https://www.managementstudyguide.com/business_communication.html	
Course Designed By: Mrs.D.Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	S	S	S
CO2	M	M	M	M	M	M	M	S	S	S
CO3	M	M	M	M	M	M	M	S	S	S
CO4	M	M	M	M	M	M	M	S	S	S
CO5	M	M	M	M	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	5EC	CLOTHING CARE	L	T	P	C
Elective		Paper I C	4	-	-	4
Pre-requisite		Basic Knowledge in Textiles	Syllabus Version		2020 – 2021	
Course Objectives:						
The main objectives of this course are to: To Educate the students in techniques and machinery for dyeing and finishing of garments and to impart knowledge on different garment care techniques.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the Dyeing techniques for apparel and its Finishing Process.					K1
2	Understand the Machinery and equipments for garment care.					K2
3	Apply the different finishes on garments.					K3
4	Analyze the Care and its Maintenance of Textiles.					K4
5	Analyze the Garment care after washing Process.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create						
Unit:1	Finishing Equipments				12-- hours	
Finishing Equipments: Study of finishing room equipments - steam iron - steam busters - vacuum ironing tables - form finishing equipments - trouser toppler, shirt press, collar/cuff press, form finisher for jackets and coats - study of boiler and related equipment for finishing room; fusing machines for interlinings; water treatment plant -soft water -hard water - methods of softening water.						
Unit:2	Laundry Equipment				12-- hours	
Laundry equipment and reagents: Study of laundry equipment and laundry reagents - soaps - detergents - cleaning action of soaps, indigenous cleaning agents - rita nut - shikakai - green gram - bran solution – study of modern and industrial cleaning agents.						
Unit:3	Stiffening Agents				12-- hours	
Stiffening Agents: Study of stiffening agents –purpose of stiffening-classification of stiffening agents preparation and uses of stiffeners- natural and commercial starches - preparation of starch for use - bleaching agents - blueing and tinting agents and their application – optical whiteners.						
Unit:4	Principles of Laundering				12-- hours	
Stain Removal: Principles of laundering - stain removal - various solvents for stain removing blood, tea, rust; oil/grease etc. – different methods of washing - application of friction by hand rubbing - scribing - tumble wash.						

Unit:5		Washing Machine	12-- hours
Washing Machine And Care Labels: Study of different types of house hold/industrial washing Machines- rotary -swirling - pressure - tumble wash etc; the various systems of care labelling- washing instruction. Bleaching instruction-drying instruction-ironing instruction-dry cleaning instruction. Placement of labels on garments.			
		Total Lecture hours	60-- hours
Text Book(s)			
1	Fundamentals of Textile and Their Care, Dantyagi S., Published by Oriental Longmans Ltd, New Delhi, 1996.		
2	Household Textiles and Laundry Work, Denlkar, Published by Atma Ram and Sons, Delhi, 1993.		
3	Fabric Care, Neomi D’Souza, New Age International Publisher, 1998.		
Reference Books			
1	Laundry and Clothing Care, Davis, Drama Book Publishers, 1995.		
2	Clothing: Choice, Care, Mary Schenck Woolman, Cost Kessinger Publishing, 2004.		
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]			
1	https://www.coats.com/en/Information-Hub/Care-Labels		
2	https://www.ezibuy.com/shop/nz/clothing-care		
3	https://www.arcadiagroup.co.uk/fashion-footprint/product/our-products/clothing-care-guide		
Course Designed By: Mrs.D.Anita Rachel			

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	S	L	M	M	S	S	S
CO2	M	M	M	S	L	M	M	S	S	S
CO3	M	M	M	S	L	M	M	S	S	S
CO4	M	M	M	S	L	M	M	S	S	S
CO5	M	M	M	S	L	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	6EA	RESEARCH METHODS	L	T	P	C
Elective	Paper II A		4	-	-	4
Pre-requisite	Basic Knowledge in Statistical tools in problems.		Syllabus Version	2020 - 2021		
Course Objectives:						
This Course aims at providing the required skill to apply the statistical tools in problems.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the fundamental knowledge of the concepts of probability.					K1
2	Understand and to have knowledge of standard distributions this can describe real life phenomenon.					K2
3	Apply the statistical tools in problems.					K3
4	Analyze the sampling distributions and statistical techniques used in management problems.					K4
5	Analyze the Research data's and its Sample size.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Introduction to Research Methods				12 -- hours	
Introduction to Business Research - Research – Definition – Importance – Advantages and Limitations. The Research Process – Problem Identification and Definition – Hypothesis Formulation-Research Proposal- Ethical issues in Research.						
Unit:2	Research Design				12 -- hours	
Scaling Techniques and Sampling -Scaling Techniques and Attitude Measurement- Online Data Sources and Research. - Sample types - Sample size and sampling errors Sample Design: Defining the Universe and Sampling Unit- Sampling Frame- Sample Design - Probability and Non-probability Sampling Methods - Sample Size Determination.						
Unit:3	Data Collection And Processing				12-- hours	
Data Collection and Processing-Data collection –methods -Primary and Secondary Data- Data collection - tools Questionnaire- Questionnaire Designing and Testing; Interview Schedule ; Observation Methods; Qualitative Research - Data Collection and Survey Errors – Data Processing -Editing, Coding, Tabulation.						
Unit:4	Data Analysis				12-- hours	
Data Analysis and Statistical Tests-Data Analysis – Test of Significance – Statistical tests - Parametric and Non – Parametric -Analysis of Variance - Z test, T test - Chi-square test .Correlation and regression.						

Unit:5	Interpretation And Report Writing	12-- hours
Interpretation, Report Preparation and Presentation-Interpretation and report writing - steps in writing reports - layout of report- types and Principles of report writing - Graphical representation of results.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Business Research Methods, Donald, R. Cooper and Parmela, S. Schindler, Published by Tata McGraw Hill, 2003.	
2	Research Methodology Methods and Techniques, Kothari C.R, Published by Wishwa Prakashan,2004.	
3	Marketing Research, Malhotra, Naresh K, Published by Pearson Education Pvt. Ltd.,4th Edition, 2004.	
Reference Books		
1	Statistics for Management, PHI, Delhi, Richard, I Levin, Published by PHI, Delhi, 2003.	
2	Management Research Methodology, Krishnaswamy, K.N., Published by Pearson Education, Delhi, 2006.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.alzheimer-europe.org/Research/Understanding-dementia-research/Types-of-research/Research-methods	
2	https://www.scribbr.com/category/methodology/	
3	https://guides.lib.vt.edu/researchmethods/design-method	
Course Designed By: Dr.K.Prabha Kumari		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	S	S	S
CO2	M	M	M	M	M	M	M	S	S	S
CO3	M	M	M	M	M	M	M	S	S	S
CO4	M	M	M	M	M	M	M	S	S	S
CO5	M	M	M	M	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	6EB	INDUSTRIAL ENGINEERING TECHNIQUES	L	T	P	C
Elective		Paper II B	4	-	-	4
Pre-requisite		Basic Knowledge in Garment industry.	Syllabus Version	2020 - 2021		
Course Objectives:						
The main objectives of this course are to:						
<ul style="list-style-type: none"> To enable the students to learn about Basics of Industrial Engineering. To study Different tools of industrial engineering and its application in apparel Industry. 						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the following methodologies in apparel industry.					K1
2	Understand the Method study, work measurement.					K2
3	Apply the Layout study and line balancing.					K3
4	Analyze the Statistical process control.					K4
5	Analyze the Operations Research Techniques.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create						
Unit:1						
Introduction to Industrial Engineering			12-- hours			
Introduction: Definition, purpose, available techniques, Aspects, physical facilities & operating facilities, scientific management, resources productivity. Work Study: Definition, objectives, Techniques, method study, work measurement, Purpose of work study, steps, and different phases.						
Unit:2						
Method Study			12-- hours			
Method Study: Definition, Steps, Selection of problems, Collection of facts and consideration about objectives, Recording techniques, Elements of a process analysis, Operation process chart, Different process charts, Critical examination.						
Unit:3						
Work Measurement			12-- hours			
Work Measurement :Definition ,Uses, Techniques, Time Study, Measuring Instruments, Elements in time study, factors, alignment chart, Performance rating methods, observed time & normal time , allowances, Standard time, Work sampling Predetermined Motion Time study, Motion time data for assembly operations, Work factor system, method time measurement.						
Unit:4						
Job Evaluation			12-- hours			
Job Evaluation: definition, Aspects, Uses, different methods of job, Ranking system, Grade description system, point method, Factor comparison method. Wage Incentive Plans: Unit of measurement, Various methods, Characteristics of wage, Incentive schemes, relationship between productivity, wages & Cost. Different wage incentive plans, relationship between indirect labour, direct labour & total plant productivity. Plant Maintenance: Introduction, Systems						

of maintenance, break down, Planned, Corrective and Preventive maintenance, maintenance schedule.

Unit:5	Operations Research	12-- hours
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Operations Research: Introduction, concept of optimization, methods of operations research, linear programming, distribution methods, Assignment models, queuing theory, Sequencing problems, Network Analysis, Game theory, Replacement analysis, depreciation.

	Total Lecture hours	60-- hours
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Text Book(s)

- | | |
|---|---|
| 1 | Industrial Engineering and Management by O. P. Khanna, Khanna Publications, 2018 |
| 2 | Textile Mill Management by Ormerod, Published by Nodal Centre for Upgradation of Textile Education (NCUTE), 2018. |
| 3 | Engineering Economics, Kleinfeld, Published by Wiley. 1992. |

Reference Books

- | | |
|---|--|
| 1 | Industrial Engineering in Apparel Manufacturing, Prof. Prabir Jana, Edition: 1st
Publisher: Apparel Resources Pvt. Ltd, 2018. |
| 2 | Industrial Engineering in Apparel Production, V.Ramesh Babu, Woodhead Publications, 2012 |

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

- | | |
|---|---|
| 1 | https://textilelearner.blogspot.com/2013/09/tools-and-techniques-of-industrial.html |
| 2 | http://nraoiekc.blogspot.com/2012/03/industrial-engineering-principles.html |
| 3 | https://www.researchgate.net/publication/263065558_Industrial_Engineering_Techniques_and_Applications |

Course Designed By: Mrs.D.Anita Rachel

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	L	L	L	M	M	S	S	S	S
CO2	L	L	M	L	M	M	S	S	S	S
CO3	M	L	L	M	M	M	S	S	S	S
CO4	L	L	L	L	M	M	S	S	S	S
CO5	M	L	M	M	M	M	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	6EC	ECO TEXTILES	L	T	P	C
Elective		Paper II C	4	-	-	4
Pre-requisite		Basic Knowledge in Environment and Textiles	Syllabus Version		2020-2021	
Course Objectives:						
The main objectives of this course are to: To make the student acquire sound knowledge of the material characteristics required for ECO clothing. To acquaint student of the mechanism, chemistry and evaluation of chemical finishes for the ECO textiles.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember Environmental problems associated with textile processes.					K1
2	Understand the materials, mechanism, chemistry and evaluation of ECO garments.					K2
3	Apply Organic Products to fabricate Green Textiles.					K3
4	Analyze the Eco-Management Systems.					K4
5	Remember Eco-Standard Specifications.					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
Unit:1	Eco Textiles				12-- hours	
Introduction: Need for eco-friendly processing. Pesticides in fibres / yarns. Heavy metals, Formaldehyde and Pentachlorophenol in textiles. Eco Standards And Eco-Labels: Introduction. M.S.T., OTN100, COMITEXTIL and Ecomark scheme of India. Criteria for an eco-label based on the life cycle. .						
Unit:2	Eco-Friendly Processing				12-- hours	
Eco-Friendly Processing: Environmental problems associated with textile processes. Approach to eco-friendly processing – fibre origin, eco- friendly production, processing and clothing production. Study about organic cotton processing. Study about Natural dyes & Dyeing.						
Unit:3	Eco- Management				12-- hours	
Eco-Management: Introduction. Preparation of Ecology Policy Statement. Organization. Systematic review of orders. Purchase policy. Assessment of suppliers. Testing, Calibration and Checking procedures. Documentation.						
Unit:4	Eco- Audit				12-- hours	
Eco- Audit: introduction. Product audit and production audit in textile industry. Auditing parameters. Certification and Labelling of Eco-Friendly Textiles: introduction. Organizations. Relationship between Eco-labelling and Eco-management & Auditing schemes. Legislation and controls on packaging and packaging waste.						

Unit:5	Eco-Standard	12-- hours
Testing of Textiles to Eco-Standard Specifications: Introduction. Test methods for testing the Banned chemicals – free formaldehyde, pesticides, pentachlorophenol, heavy metals, Azo dyes containing aromatic amines& Benzedrine and halogenic carriers.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Eco Textiles, The Textile Institute, Miraftab M and Horrocks A R, Woodhead Publication Limited, Cambridge, 2007.	
2	Eco parameters: Present Status, Susanna Benny and Janakiraman K.P., Mill Control Report o.15 , Published by The South India Textile Research Association, Coimbatore,1998.	
Reference Books		
1	The Gazette of India, Extraordinary, Part II section 3, subsection 11 No 193, Ministry of Environment and Forests, Published by Government of India, 1997.	
2	Oko-tex Standard 100, International Association for Research and Testing in the field of Textile Ecology (Oko- tex), Zurich, Switzerland, January, 1997.	
3	Eco Textiles, Miraftab, M, Horrocks, A. Richard, Elisver Publisher, 2007.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.textileschool.com/368/what-is-eco-textiles/	
2	https://textilelearner.blogspot.com/2014/09/ecotextile-application-or-uses-of-ecotextile.html	
3	https://www.fibre2fashion.com/industry-article/76/eco-friendly-textiles	
Course Designed By: Mrs.D.Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	S	L	S	L	L	L	S
CO2	M	M	M	S	L	S	L	L	L	S
CO3	M	M	M	S	M	S	L	L	M	S
CO4	M	M	M	S	L	S	L	L	L	S
CO5	M	M	M	S	L	S	L	M	L	S

*S-Strong; M-Medium; L-Low

etc; Export documentation, retailing; Methods of communicating with consumers.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	ERP in Apparel Industry, D. Anita Rachel, Kongunadu Publications India Pvt Ltd, ISBN: 978-93-86770-19-6, 2017.	
2	ERP Demystified, Alexis Leon, Published by Tata McGraw Hill, New Delhi, 2000	
3	Apparel Manufacturing, Sewn Product Analysis, Glock Ruth E. and Kunz Grace I., Blackwell Scientific Publications, 1996.	
4.	Concepts in Enterprise Resource Planning, Joseph A. Brady, Ellen F. Monk, Bret Wagner, Published by Thompson Course Technology, USA, 2001	
Reference Books		
1	Enterprise Resource Planning Concepts and Practice, Garg Vinod Kumar and Venkitakrishnan N. K., Published by PHI, New Delhi, 2003.	
2	Enterprise Resource Planning, Theory & Practice, Rahul Altekar , V., Published by Printice Hall of India, New Delhi, 2005.	
3	Enterprise Resource Planning, Leon , V., Diamond Publications, New Delhi, 2018.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.fibre2fashion.com/industry-article/1534/benefits-of-erp-software-in-garment-and-apparel-industry	
2	https://www.fdm4.com/solutions/erp/apparel/	
3	https://www.deskera.com/erp-software-for-apparel-textile-industries/	
Course Designed By: Mrs.D.Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	6EE	INTIMATE APPAREL MANUFACTURING TECHNIQUES	L	T	P	C
Elective		Paper III B	4	-	-	4
Pre-requisite		Basic Knowledge in Apparel	Syllabus Version		2020 - 2021	
Course Objectives:						
The main objectives of this course are to: To Acquaint student on the design, material, accessories and sewing aspects of intimate garments.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember design and develop intimate apparels.					K1
2	Understand the comfort and security.					K2
3	Apply the Sewing aspects and its techniques of intimate garments.					K3
4	Analyze the pattern drafting of Intimate Apparel Manufacturing Techniques.					K4
5	Analyze to achieve the required drape and silhouette using appropriate ease allowance.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create						
Unit:1	Intimate Apparels				12-- hours	
Intimate apparels – Definition, classification, materials-fibre, fabric and accessories; physical and Physiological requirements of intimate apparels.						
Unit:2	Men's Intimate Apparel				12-- hours	
Design analysis, measurements, pattern drafting of men's intimate apparel – Long johns, tank top, tanga, boy shorts, knickers, bikini underwear, thong, boxer briefs, boxer shorts and jock strap.						
Unit:3	Women's Intimate Apparel				12-- hours	
Design analysis, measurements, pattern drafting of women's intimate apparel – waist petticoats, Panties, camisoles, tube top, shape wear, bikini and bra.						
Unit:4	Intimate Apparel Accessories				12-- hours	
Intimate apparel accessories - Bra wire, hook and eye tape, ring and slider, buckle, plastic bone, Elastics and sewing threads.						
Unit:5	Sewing of Intimate Apparels				12-- hours	
Sewing of intimate apparels - seams, stitches, machines; lamination; moulding and welding Technique.						
			Total Lecture hours		60-- hours	
Text Book(s)						

1	Pattern Cutting for Lingerie, Beach Wear and Leisure Wear, Ann Hagggar, Published by Black Well Science Limited, France, 2001.
2	Advance in Women's Intimate Technology edited by Winnle Yn, Published by Woodhead Ltd, 2017.
Reference Books	
1	Innovations and Technology of Womens Intimate Apparel", W.Yu, J. Fan, S.C. Harlock, S.P. Ng., Wood head Publishing Limited, England 2006.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://www.elsevier.com/books/advances-in-women-s-intimate-apparel-technology/man/978-1-78242-369-0
2	https://textilelearner.blogspot.com/2013/05/importance-of-comfort-in-intimate.html
3	https://www.fibre2fashion.com/industry-article/7084/machines-used-in-lingerie-making
Course Designed By: Mrs.D.Anita Rachel	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	L	S	S	S	S	S
CO2	M	M	M	M	L	S	S	S	S	S
CO3	M	M	M	M	L	S	S	S	S	S
CO4	M	M	M	M	L	S	S	S	S	S
CO5	M	M	M	M	L	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course Code	6EF	APPAREL BRAND MANAGEMENT	L	T	P	C
Elective	Paper III C		4	-	-	4
Pre-requisite	Basic Knowledge in Apparel Management		Syllabus Version		2020 - 2021	
Course Objectives:						
The main objectives of this course are to: To introduce students to the concept of brand, brand building, branding strategies and legal issues in brand management.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Remember the consumer behaviour, brand identity and brand equity management.					K1
2	Remember to the concept of brand, brand building, branding strategies and legal issues in brand management.					K1
3	Understand and builds loyal customers through positive brand associations and images or a strong awareness of the brand.					K2
4	Apply and Establish the brand loyalty in Apparel Sector.					K3
5	Analyze of marketing that uses techniques to increase the perceived value of a product line or brand over time.					K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create						
Unit:1	Introduction to Brand				12-- hours	
Introduction: Brand – introduction, functions, brand significance; branding – types and strategies international apparel brands - identification of perspectives and challenges to build brand- Indian garment brands and prospects of Indian brands.						
Unit:2	Brand Appraisal				12-- hours	
Brand Appraisal: Brand appraisal – Definition and methods - exploration, market, customer, Competition analysis, reasoning of brands importance and methods involved - ladder, emotional and rational, Brand mapping – circle, prism and triangle.						
Unit:3	Positioning				12-- hours	
Positioning: Positioning – definition, types – benefit, usage, features, users, price, value technology, tradition, perceptual map – product class and customer segment; positioning strategies – non functional values, brand loyalty and pyramid; positioning strategies of international garment retailers.						
Unit:4	Brand Identity				12-- hours	
Identity And Extension: Brand identity and articulation – name, colour, design, logo and symbols, brand service advertising and cross cultural influence; brand extension – need and types; labelling and licensing of apparel products – types, license agreement, and international						

property rights; need for developing brand names and labels for apparel manufactured and exported from India.		
Unit:5	Brand Measurement	12-- hours
Brand Measurement: Brand measurement- definition, need and methods – audit, track, brand overtime – managing brand image - need, concepts of management, forces affecting brand and maintenance of brand, Study on brands and brand management of Indian Garment.		
	Total Lecture hours	60-- hours
Text Book(s)		
1	Building Brand Value, Parameswaran M. G., Tata McGraw Hill Publishing Company Ltd, 2006.	
2	Brand Management –The Indian Context, Moorthy Y. L. R., Vikas Publication Pvt Ltd, 2007.	
3	Brand Management Text and Cases, Verma Harsh V., Published by Excel books, 2006.	
Reference Books		
1	Brand Management Text and Cases, Mathur U. C., Published by Macmillan India Ltd 2006.	
2	Branding – Vanauken, Jaico Books, Published by Delhi, 2010.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.polimoda.com/courses/master/fashion-brand-management	
2	http://textile.webhost.uoradea.ro/Annals	
3	https://www.istitutomarangoni.com/en/fashion-courses/postgraduate/masters-degrees-o-masters-courses/fashion-luxury-brand-management/	
Course Designed By: Mrs.D.Anita Rachel		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	L	S	S	S	S	S
CO2	M	M	M	M	L	S	S	S	S	S
CO3	M	M	M	M	L	S	S	S	S	S
CO4	M	M	M	M	L	S	S	S	S	S
CO5	M	M	M	M	L	S	S	S	S	S

*S-Strong; M-Medium; L-Low



Annexure

B.Sc. APPAREL MANUFACTURING AND MERCHANDISING

SYLLABUS

(With Effect from 2022 -2023 Batch Onwards)

Program Code: 26P



Bharathiar University

**(A State University, Accredited with “A” Grade by NAAC and
13th Rank among Indian Universities by MHRD-NIRF)**

Coimbatore 641 046, INDIA.

List of Elective papers (Colleges can choose any one of the paper as electives)			
Elective – I	A	5EA	Fashion and Apparel Marketing.
	B	5EB	Business Communication.
	C	5EC	Clothing Care.
Elective – II	A	6EA	Research Methods.
	B	6EB	Industrial Engineering Techniques.
	C	6EC	Eco Textiles.
Elective – III	A	6ED	ERP in Apparel Industry.
	B	6EE	Intimate Apparel Manufacturing Techniques.
	C	6EF	Apparel Brand Management.

