# B.Sc. Apparel Manufacturing and Merchandising

## Syllabus

## AFFILIATED COLLEGES

## Program Code: 26P

**2025 – 2026 onwards**

**BHARATHIAR UNIVERSITY**

**(A State University, Accredited with "A++" Grade by NAAC, Ranked 21st among Indian Universities by MHRD-NIRF)**

**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 (CBCS PATTERN)**
(For the students admitted from the academic year **2025-2026** 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 | 25 | 75 | 100 | 4 |
| II | English I | 6 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper I - Textile Fibres and Yarns | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper II - Knitting Technology | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Practical I - Knitting Technology Practical | 4 | 3 | 20 | 30 | 50 | 2 |
| III | Allied Paper I - Computer Application Practical | 4 | 3 | 20 | 30 | 50 | 2 |
| IV | Environmental Studies * | 2 | 3 | - | 50 | 50 | 2 |
| **Total** | | **30** | | **140** | **410** | **550** | **22** |
| | **Semester II** | | | | | | |
| I | Language II | 6 | 3 | 25 | 75 | 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 | 25 | 75 | 100 | 4 |
| III | Core Paper IV - Pattern Making and Grading | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Practical II - Pattern Making | 5 | 3 | 20 | 30 | 50 | 2 |
| III | Allied Paper II - Woven Fabric Analysis and Designing Practical | 3 | 3 | 20 | 30 | 50 | 2 |
| IV | Value Education – Human Rights* | 2 | 3 | - | 50 | 50 | 2 |
| **Total** | | **30** | | **165** | **385** | **550** | **22** |
| | **Semester III** | | | | | | |
| I | Language III | 6 | 3 | 25 | 75 | 100 | 4 |
| II | English III | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper V – Apparel manufacturing technology | 4 | 3 | 20 | 55 | 75 | 3 |
| III | Core Paper VI - Textile Wet Processing | 4 | 3 | 20 | 55 | 75 | 3 |
| III | Allied Paper III - Textile Wet Processing- Practical | 4 | 4 | 30 | 45 | 75 | 3 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| III | Skill based Subject I – Garment Construction I Practical | 4 | 3 | 30 | 45 | 75 | 3 |
| IV | Tamil** / Advanced Tamil* (OR) Nonmajor elective - I (Yoga for Human Excellence)* / Women's Rights* | 2 | 3 | - | 50 | 50 | 1 |
| V | Health and wellness | 2 | 3 | 100 | - | 100 | 1 |
| **Total** | | **30** | | **250** | **400** | **650** | **22** |
| | **Semester IV** | | | | | | |
| I | Language IV | 6 | 3 | 25 | 75 | 100 | 4 |
| II | English IV | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper VII - Textile Testing and Quality Assurance | 4 | 3 | 20 | 55 | 75 | 4 |
| III | Core Paper VIII - Apparel Merchandising I | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Allied Paper IV - Textile Testing Practical | 3 | 4 | 20 | 30 | 50 | 2 |
| IV | Skill based Subject II – Garment Construction II Practical | 5 | 4 | 20 | 30 | 50 | 2 |
| IV | Tamil**/Advanced Tamil* (OR) Nonmajor elective -II (General Awareness*) | 2 | 3 | - | 50 | 50 | 2 |
| IV | 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** | | **160** | **415** | **575** | **24** |
| | **Semester V** | | | | | | |
| III | Core Paper IX - Apparel Production Management | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper X - Apparel Merchandising II | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper XI - Total Quality Management | 4 | 3 | 20 | 55 | 75 | 3 |
| III | Core Paper XII - Garment Costing | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Practical III- Export Sampling and Product Development Project # | 5 | 4 | 25 | 75 | 100 | 4 |
| III | Elective I | 4 | 3 | 20 | 55 | 75 | 4 |
| IV | Skill Based Subject III - Computer Aided Designing Practical | 5 | - | 20 | 30 | 50 | 2 |
| **Total** | | **30** | **-** | **160** | **440** | **600** | **25** |

| | Semester VI | | | | | | |
|---|---|---|---|---|---|---|---|
| III | Core Paper XIII - International Trade and Documentation | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper XIV - Apparel Retailing | 4 | 3 | 25 | 75 | 100 | 4 |
| III | Core Paper XV - Entrepreneurship and Small Business Development | 4 | 3 | 20 | 55 | 75 | 3 |
| III | Elective II | 4 | 3 | 20 | 55 | 75 | 4 |
| III | Elective III | 4 | 3 | 20 | 55 | 75 | 4 |
| IV | Skill based Subject IV – Project | 10 | - | 25 | 75 | 100 | 4 |
| V | Extension Activities ** | - | - | - | 50 | 50 | 2 |
| IV | Naan Mudhalvan Skill Course : Emmployability readiness-Naandi / Unmati/ Quest / Izapy / IBM Skill Build | - | - | - | - | - | - |
| | **Total** | **30** | **-** | **135** | **440** | **575** | **25** |
| | **Grand Total** | **180** | | **1010** | **2490** | **3500** | **140** |

**CIA** – Continuous Internal Assessment
**CEE** – Comprehensive External Examination
* No Continuous Internal Assessment (CIA). Only University Examinations.
** No University Examinations. Only Continuous Internal Assessment (CIA)
@University semester examination will be conducted for 50 marks and the marks will be converted to 25 marks
# Naan Mudhalvan course :CEE will be assessed by industry for 25 marks and CIA will be done by the course teacher

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 | 100 | 25 | 50 | 25 |
| Skill based Subject IV – Project | 100 | 25 | 50 | 25 |

| 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 | Technical Textiles for Apparel Merchandisers |
| | C | Apparel Brand Management. |

| 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 | 2025 – 2026 | | |

**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 | | 2025 – 2026 | |

**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 – O p e n 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 | 2 |
| Pre-requisite | | Basic Knowledge in Fabrics | Syllabus Version | | 2025 – 2026 | |

**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:**<br>A) Course and Wale density B) Loop length C) Areal Density (GSM)<br>D) Tightness factor E) Technical Graph F) Cam Order<br>G) Needle Order<br>**(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 | 2 |
| Pre-requisite | | Basic Knowledge in Computer | Syllabus Version | | 2025 – 2026 | |

**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 |
|---|---|---|

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. |

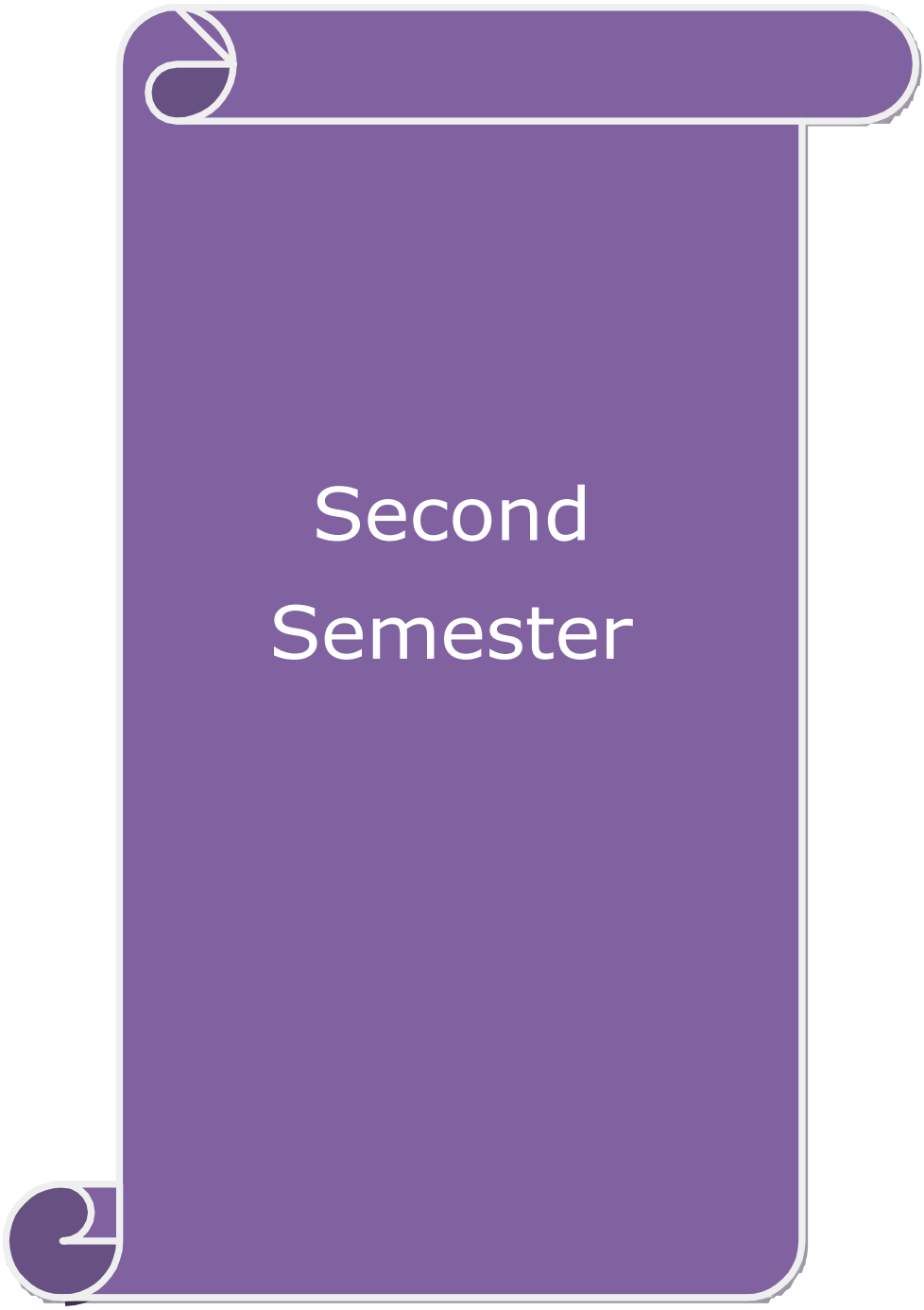
**Reference Books**

| | |
|---|---|
| 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.pdf |
| 3 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 | 2025 – 2026 | | |

**Course Objectives:**

The main objective of this course is to enable the students to understand

- 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 Sehwartz, 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 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in Garments | Syllabus Version | 2025 – 2026 | | |

**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. | K3 |

**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 | Patterm 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 | 2 |
| Pre-requisite | | Basic Knowledge in Patterns | Syllabus Version | | 2025 – 2026 | |

**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 | Patterm 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 | Patterm 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 | 2 |
| Pre-requisite | | Basic Knowledge in Fabric structures. | Syllabus Version | | 2025 – 2026 | |

**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 |
|---|---|---|

To analyse the following particulars of woven fabrics

(i) Woven structural analysis**:** Design, draft, peg plan, denting plan.

(ii) Warp particulars**:** Material of warp - ends per length - count, direction of twist, Crimp percentage, cover factor, warp pattern.

(iii) Weft particulars**:** Material of weft - picks per unit length- count, direction of twist, twist per length, Crimp percentage, cover factor and warp pattern.

(iv) Fabric particulars**:** Total Cover factor, Weight of fabric and thickness.

(v) Loom requirements: Shedding mechanism, heald count, and count.

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 |
|---|---|---|

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 Sehwartz, 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

# Third Semester

| Course Code | 33A | Apparel Manufacturing Technology | L | T | P | C |
|---|---|---|---|---|---|---|
| Core | Paper V | | - | 4 | - | 3 |
| Pre-requisite | Basic knowledge in apparel production processes | | Syllabus Version | 2025-26 | | |

**Course Objectives:**

The main objectives of this course are to:

1. To familiarize students with the fundamental machinery and equipment used in apparel production.
2. To provide an overview of the garment industry and its structure.
3. To understand the operational processes of various departments within the garment industry.

**Expected Course Outcomes:**

On the successful completion of the course, student will be able to:

| | | |
|---|---|---|
| CO1 | Describe the various machineries and process involved in fabric spreading and cutting. | K1 |
| CO2 | Generalize the types of garment production machineries and its application methods. | K2 |
| CO3 | Summarize the sewing machines and its special attachments for higher production. | K3 |
| CO4 | Explain the special machines and its functions in Garment Industry. | K4 |
| CO5 | Identify garment finishing machineries and its working principles. | K5 |

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

| Unit:1 | Apparel Manufacturing & Cutting Process | 12 hours |
|---|---|---|

Introduction to garment industry process details. Spreading machine: Types and working Procedures. Cutting machines: Types of cutting machines and its application – Detailed study on band knife, straight knife, drills & notches

| Unit:2 | Classification of Garment Manufacturing Machines | 12 hours |
|---|---|---|

Classification of garment manufacturing machines & applications. Studies on different sewing Machine – Lockstitch machine (chain stitch formation) - Features of advanced lock stitching machines. Over lock machine – Classification - Three thread over-lock machine – Stitch forming elements. Brief study on double needle lock stitch machine, flat lock machines.

| Unit:3 | Sewing Machine and its Details | 12 hours |
|---|---|---|

Sewing machine shapes - Sewing machine bed types-Description and application of each bed – Flat bed - Cylinder bed - Post bed – Applications. Feed mechanisms – Types - Drop feed – Compound feed-Unison feed–Drop and variable top feed – Differential bottom and variable top feed.

| Unit:4 | Machine Parts | 12 hours |
|---|---|---|

Requirements – Guides – Types (edge & curve guide) - Compensating foot - Specialized presser Foot – Stitching jig- hem folders - Slack feeding and elastication – Cutting aids (threads, elastic and tapes) - Stacker. Simple automatics - Button hole – Button sew – Bar tack machine - Label sewers. Types and parts of machine needles – Needle sizes – Details of stand, table and motor for sewing machines..

| Unit:5 | Garment Finishing Process | 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 | Introduction to Clothing Manufacture, Gerry Cooklin, Publication by Blackwell Science Ltd, England 1991.. |
| 4 | Shaeffer Clair “Sewing for apparel Industry” Prentice Hall, New Jersey2001. |
| 5 | Apparel Manufacturing Process”, Kunz. |
| 6 | Clothing Construction and Wardrobe Planning, Dora.S.Lewis, Mabel Goode Bowers and Marietta Kettunen, Publication by The Macmillan Company, New York, 1955. |
| **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 | | 2025 – 2026 | |

**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, Guoqiang Chen, 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 | - | - | 6 | 3 |
| Pre-requisite | | Basic Knowledge in Stitches and Seams. | Syllabus Version | | 2025 – 2026 | |

**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:

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.

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_texmch.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 III | - | - | 6 | 3 |
| Pre-requisite | | Basic Knowledge in Dyeing and Printing. | Syllabus Version | | 2025 – 2026 | |

**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 | | 2025 – 2026 | |

**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 Publising 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 VIII | 4 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in Apparel | Syllabus Version | 2025 – 2026 | | |

**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 – Concepts of „Six Rights" – Organization structure of an apparel industry – Classification of Exporters, Classification of buyers, Export merchandising and retail merchandising – Company profile and its contents. 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:2 | BOM,Costing, and Consumption Planning | 12 -- hours |
|---|---|---|

Bill of Material (BOM): Definition and importance in garment production, Procedure and method for preparing a well-structured BOM for each style, Specification of raw materials, trims, components, and accessories, Quantity estimation techniques for each part required to produce the final product, Primary Costing: Concept and methodology of initial (primary) costing derived from sampling, Basic elements of costing: material, labor, overheads, Tools used for cost estimation in the pre-productionstage,Consumption Identification: Identification of appropriate personnel for estimating material consumption, Methods for calculating fabric, trims, and accessories consumption, Role of sample room and technical staff in consumption planning

| Unit:3 | Production Monitoring, Follow-up Procedures & TNA | 12-- hours |
|---|---|---|

Follow-Up and Monitoring Procedures: Responsibilities of patternmakers, tailors, and technical teams in pre-production, Establishing monitoring checkpoints and procedures for quality assurance, Coordination with the Industrial Engineering (IE) Department, Calculation and application of Standard Allowed Minute (SAM) values for garment operations,TNA (Time and Action) Calendar: Importance of TNA calendar in ensuring timely production and delivery, Step-by-step method for preparing a TNA calendar, Fixing estimated dates for each activity post sample confirmation, Integrating buyer requirements and internal workflow into the TNA.

| Unit:4 | Prototype Preparation | 14-- hours |
|---|---|---|

Procedure of check the specification sheet prepared in accordance with standard format. Preparation, coordination and confirmation of pattern cutting, detailed drawings and mini-markers. Preparation, coordination and confirmation of patterns developed are according to the

| | | |
|---|---|---|
| shrinkage report, tested and received. Procedure and method of checking of assembled garments according to specifications sheet and accepted garment assembly techniques. Prototype test report – Procedure and method of Prototype sent for test report either according to company norms or as per the buyers standards requested. | | |
| | | |
| **Unit:5** | **Merchandise Plan** | **12-- hours** |
| Buyer approval process - Preparation, coordination and confirmation Prototype checked with design team and sent to buyer for approval and accordingly changes done if any and confirmed for production. Size sets approved internally. P.O (Purchase Order) & P.I (Performa Invoice) - Procedure and Method of raise and receive P.O (Purchase Order) & P.I (Performa Invoice) after confirmation on the costing to buyer and vendor. Approval and updating of work sheets - Procedure and method of approval and updating of all the work sheets, like the trims sheet, fabric sheet, consumption sheet (fabric and thread) this also includes in tech-pack, if any. Procedure and method of actual TNA updating that sent for approval | | |
| | **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, 7th Edition, 2004. |
| 3 | Fashion Merchandising, Elian Stone, Glencoe/McGraw-Hill School Publication, 2004. |
| 4 | Grace I kunz, Merchandising: Theory, Practice and Principles |
| 5 | Harry B. Watton (1992.). New Product Planning, Prentice Hall Inc. |
| 6 | John Donnellan, Merchandise Buying and Management. |

| **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: Mr.K.Balamurugan

| **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 II | - | - | 5 | 2 |
| Pre-requisite | | Basic Knowledge in Stitches and Seams | Syllabus Version | | 2025 – 2026 | |

**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 R aglan 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 | - | - | 5 | 2 |
| Pre-requisite | | Basic Knowledge in Textile testing | Syllabus Version | | 2025 – 2026 | |

**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 |
|---|---|---|

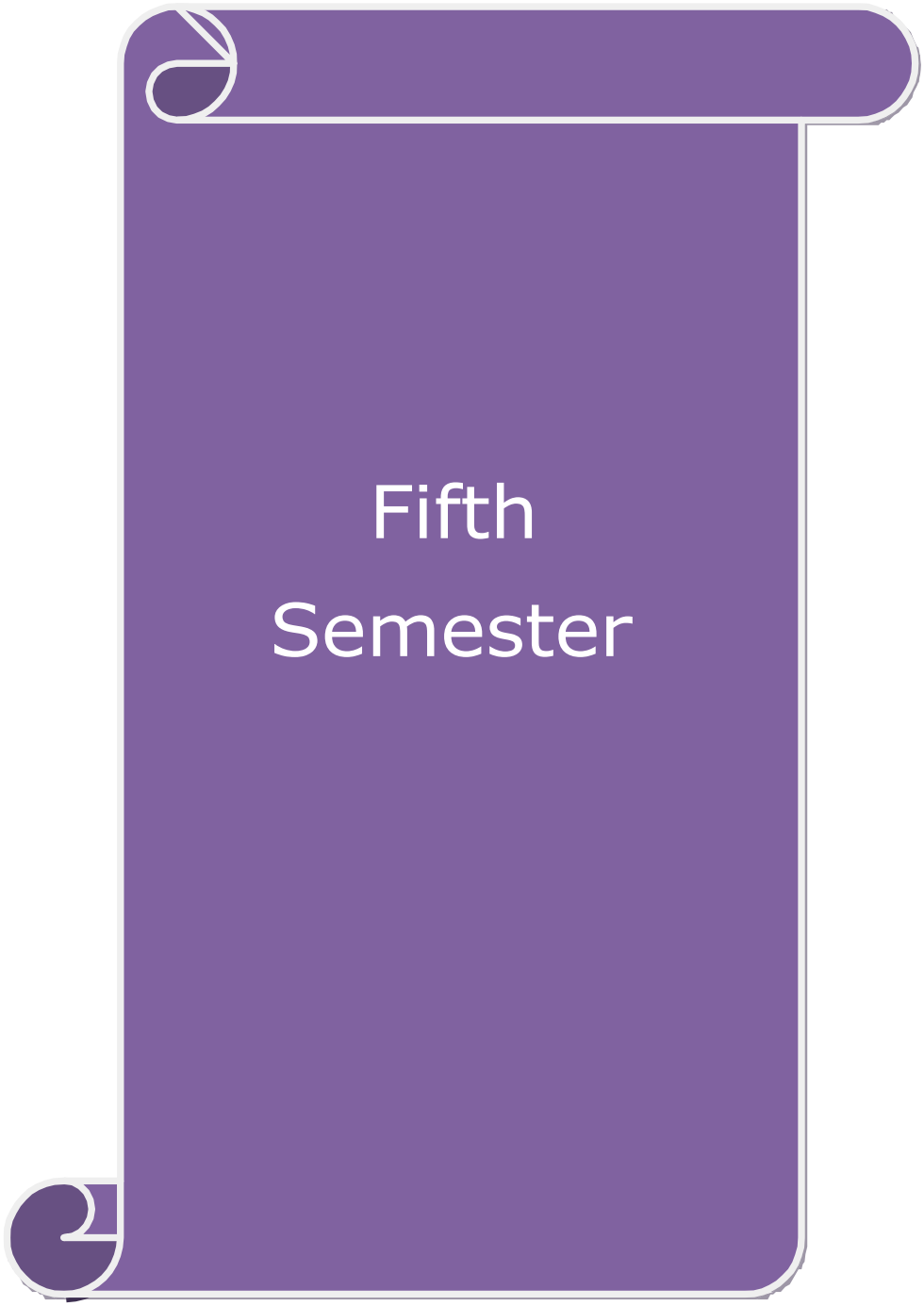
**Text Book(s)**

| | |
|---|---|
| 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 Publising 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


Fifth
Semester

| Course Code | 53A | APPAREL PRODUCTION MANAGEMENT | L | T | P | C |
|---|---|---|---|---|---|---|
| Core | | Paper IX | 4 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in Apparel Goods | Syllabus Version | 2025 – 2026 | | |

**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 - F l o w 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 X | 4 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in Merchandise | Syllabus Version | | 2025 – 2026 | |

**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** |
| 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** |

| **Text Book(s)** | |
|---|---|
| 1 | Apparel Merchandising, Robin Mathew, Book Enclave Publishers, Jaipur, 2008. |
| 2 | Inside the Fashion Business, Mc Millan Publishing Co, 7th 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 XI | 4 | - | - | 3 |
| Pre-requisite | | Basic Knowledge in Quality Management | Syllabus Version | 2025 – 2026 | | |

**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

| Course Code | 53D | GARMENT COSTING | L | T | P | C |
|---|---|---|---|---|---|---|
| Core | | Paper XII | 4 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in Costing | Syllabus Version | 2025 – 2026 | | |

**Course Objectives:**

To Facilitate better understanding of apparel Costing and Budgeting.

**Expected Course Outcomes:**

On the successful completion of the course, student will be able to:

| | | |
|---|---|---|
| 1 | Remember the Cost accounting and Cost elements. | K1 |
| 2 | Understand the Cost elements involved in fabric and apparel Costing. | K2 |
| 3 | Apply the Ascertaining apparel product standard that maximise quality while balancing Cost restrictions. | K3 |
| 4 | Analyze the principles of Costing the Garments. | K4 |
| 5 | Remember all the Cost of the raw materials and accessories, knitting fabrics, processing and finishing of fabrics, sewing, and packing of garments, transport, and conveyance, shipping, overheads, banking charges and commissions | K2 |

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

| Unit:1 | Principles of Costing | 12 -- hours |
|---|---|---|

Principles of Costing - requirements of good Costing system - Cost unit - types of Costs - Elements of Cost - direct material Cost - direct expenses - direct wages - indirect materials - indirect expenses - indirect labour - overheads - - prime Cost - work Cost - Cost of production - total Cost. INCO terms & its relationship with Costing.

| Unit:2 | Budgeting | 12 -- hours |
|---|---|---|

Budgeting: The budgeting process: Budgeting principles for the apparel industry- Fixed vs. variable budget - Master budget-limitations of budgets- any justification effort -Planned Vs Actual Cost.

| Unit:3 | Estimation of Cost | 12-- hours |
|---|---|---|

Cost estimation of yarn, knitted fabric, dyeing, printing & finishing. Woven Fabric Costing: Fabric types, yarn consumption, weaving price Cost estimation for cutting, stitching, checking, packing, forwarding, shipping, and insurance.

| Unit:4 | Estimation of Factory Cost | 12-- hours |
|---|---|---|

Estimation of factory Cost for Woven & Knitted - vest, briefs , shorts, t-shirts, pajamas, children's wear, ladies wear, Woven Shirt, Woven Tops & Bottom. Various factors to be considered in Costing for domestic products & international products.

| Unit:5 | Pricing of Apparel Products | 12-- hours |
|---|---|---|

Determining Pricing of apparel products: Price elasticity of demand and supply, sample Costing- marginal revenue and marginal Cost, Cost plus pricing methods;, Full Cost

| | | |
|---|---|---|
| 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, Chandigargh, 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 |
|---|---|---|---|---|---|---|
| Skill based subject | | Practical III | - | - | 5 | 2 |
| Pre-requisite | | Basic Knowledge in CAD | Syllabus Version | | 2025 – 2026 | |

**Course Objectives:**

The student should be made to:

- 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,

1. Create Pattern on computer screen, adding details to patterns.
2. Saving, extracting & editing patterns from stock library of Patterns.
3. Grading patterns on different size scale.
4. Making Marker plan for cutting fabrics.
5. Estimating lay length and calculating marker efficiency.
6. Fit analysis of the given pattern.

Styles

1. Men’s Basic T Shirt
2. Raglan with Pocket
3. Men’s Polo T Shirt
4. Men’s Trouser
5. Men’s T-Shirt with hood
6. Men’s Inner Garment – Vests RN / RNS
7. Briefs
8. Ladies Skirt
9. Women’s Nightwear
10. Kid’s Wear – Romber
11. Kid’s Wear – A Line frock
12. 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 Itd, 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 |
|---|---|---|---|---|---|---|
| Core Practical | | Practical III | - | - | 5 | 4 |
| Pre-requisite | | Basic Knowledge in Apparel Product Development | Syllabus Version | | 2025 – 2026 | |

**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 |
|---|---|---|

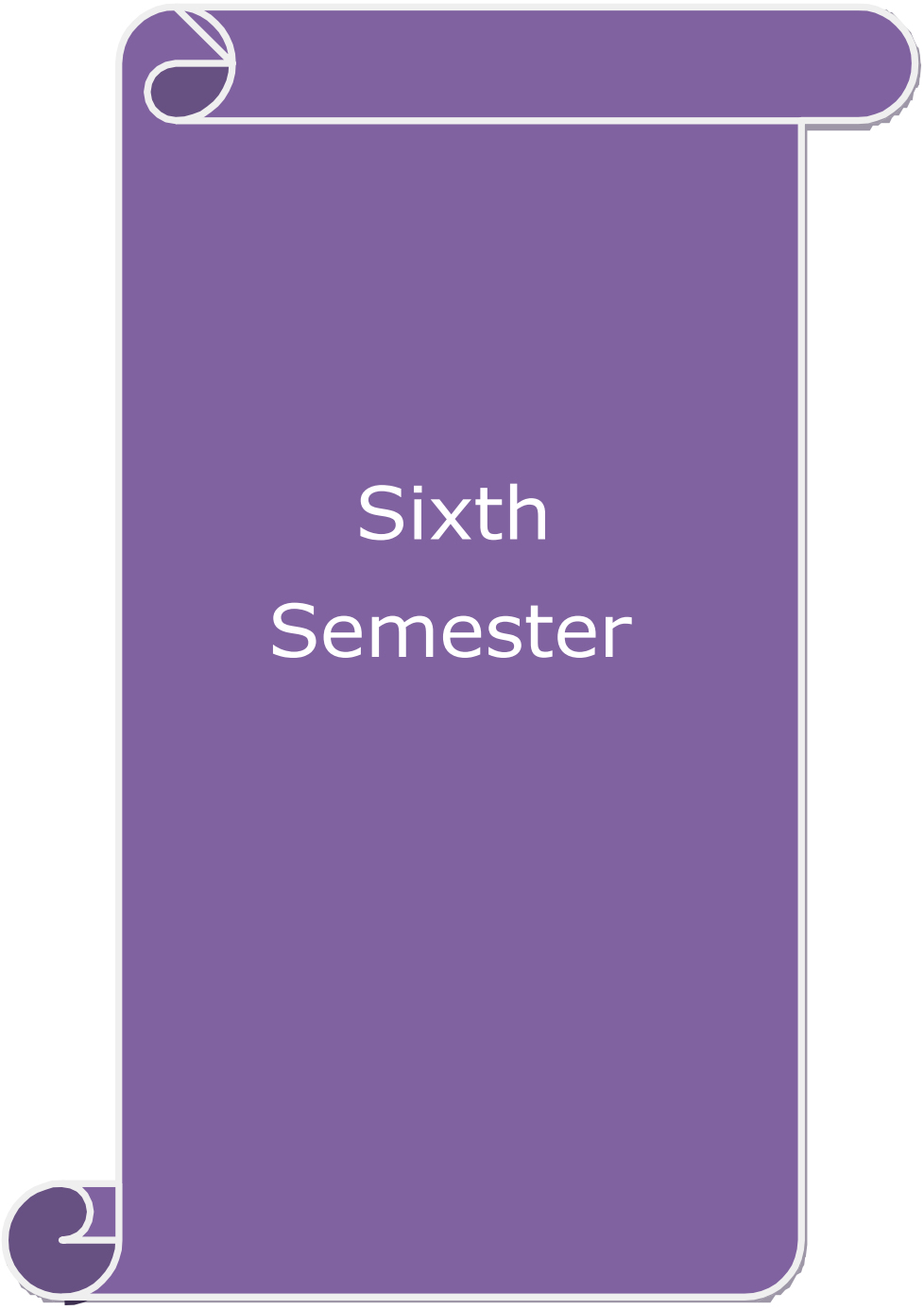
**Text Book(s)**

| | |
|---|---|
| 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 XIII | 4 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in International trade. | Syllabus Version | | 2025-2026 | |

**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 asses 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** |
| 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** |

**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 XIV | 4 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in Apparel Markets | Syllabus Version | | 2025-2026 | |

**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 XV | 4 | - | - | 3 |
| Pre-requisite | | Basic Knowledge in Entrepreneurial Career | Syllabus Version | 2025-2026 | | |

**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 – Subsidied 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 Akansh a 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 | 4 |
| Pre-requisite | | Basic Knowledge in To Develop new Research and Apparel Product | Syllabus Version | | 2025-2026 | |

**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 | 2025-2026 | | |

**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 | 2025-2026 | | |

**Course Objectives:**

The main objectives of this course are to:
To make learners acquire listening and speaking skills in both formal and informal contexts.
To help them develop their reading skills by familiarizing them with different types of reading strategies.

**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 | 2025-2026 | | |

**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 topper, 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 | 2025-26 | | |

**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 | | 2025-26 | |

**Course Objectives:**

The main objectives of this course are to:

- 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** |
| 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** |

| | |
|---|---|
| **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 | | 2025-26 | |

**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

| Course Code | 6ED | ERP IN APPAREL INDUSTRY | L | T | P | C |
|---|---|---|---|---|---|---|
| Elective | | Paper III A | 4 | - | - | 4 |
| Pre-requisite | | Basic Knowledge in Software's in Apparel Industry. | Syllabus Version | 2025-2026 | | |

**Course Objectives:**

The main objectives of this course are to:

To Automate the business functions, Enterprise Resource Planning (ERP) is Business Process Management Software.

**Expected Course Outcomes:**

On the successful completion of the course, student will be able to:

| | | |
|---|---|---|
| 1 | Remember the product and service improvement. | K1 |
| 2 | Understand the Enterprise Resource Planning and its Functions. | K2 |
| 3 | Apply growth of existing product lines. | K3 |
| 4 | Analyze the systems and supports new product development. | K4 |
| 5 | Understand the Modernize Business System and Processes. | K2 |

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

| Unit:1 | Introduction to ERP | 12-- hours |
|---|---|---|

Introduction: ERP: An Overview, enterprise – an overview, types of Enterprises, need for ERP, benefits of ERP, ERP and related technologies, Business Process Reengineering (BPR), Benefits of BPR. .

| Unit:2 | Implementation of ERP | 12-- hours |
|---|---|---|

Implementation of ERP: ERP implementation lifecycle, implementation methodology, hidden Costs, organizing the implementation, vendors, consultants and users, contracts with vendors, consultants and employees, project management and monitoring.

| Unit:3 | Business Modules | 12-- hours |
|---|---|---|

The Business Modules: Business modules in an ERP package - finance, manufacturing, human resources, plant maintenance, materials management, quality management, sales and distribution. Significance and advantages of each of the modules.

| Unit:4 | ERP in Apparel Industry | 12-- hours |
|---|---|---|

ERP in apparel industry: Production resource planning – principles and management of and demand chain analysis– quick response strategy - material management for „Quick Response" – Just in Time (JIT) Technology"; Production planning, Costing and merchandising software.

| Unit:5 | Computer Applications | 12-- hours |
|---|---|---|

Computer Applications: Management Information System in garment industry – EDI in garment technology; Use of Computers in Designing, Pattern making, computerized production systems, communicating with vendors and buyers; Telephone, fax, video conferencing, intranet, internet,

| | | |
|---|---|---|
| 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 | Technical Textiles for Apparel Merchandisers | L | T | P | C |
|---|---|---|---|---|---|---|
| Elective | | Paper III B | 4 | - | - | 4 |
| Pre-requisite | | Basic knowledge about Textile science | Syllabus Version | 2025-26 | | |

**Course Objectives:**

The main objectives of this course are to:

1. Introduce the concept and scope of technical textiles in the context of apparel merchandising.
2. Familiarize students with high-performance fibers, fabric constructions, and their end-use applications.
3. Enable students to understand the role of technical textiles in performance wear, protective garments, and functional fashion.
4. Equip students to communicate product specifications, standards, and market demands effectively.
5. Encourage exploration of sustainable and smart textile innovations in merchandising strategies.

**Expected Course Outcomes:**

On the successful completion of the course, student will be able to:

| | | |
|---|---|---|
| 1 | Understand the role of high-performance fibres in functional apparel. | K1 |
| 2 | Differentiate between conventional and technical textiles based on functionality. | K2 |
| 3 | Interpret technical specifications for merchandising and sourcing. | K3 |
| 4 | Identify market trends, standards, and sustainable practices in technical textiles. | K4 |
| 5 | Evaluate applications of technical textiles in sportswear, protective clothing, and medical garments. | K5 |

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6**– Create

| Unit:1 | Introduction to Technical Textiles | 12 hours |
|---|---|---|

Definition, scope, and growth of technical textiles, Classification: Agrotech, Buildtech, Clothtech, Medtech, Protech, Sportech, Difference between conventional and functional textiles, Role of technical textiles in modern apparel and fashion industries.

| Unit:2 | High-Performance Fibers and Materials | 12 hours |
|---|---|---|

Overview of functional fibers used in technical textiles: Aramid, Nomex, Spandex, Carbon, Bamboo, and other advanced fibers, Key performance properties relevant to apparel applications: UV resistance, Moisture management, Flame resistance, Anti-microbial properties, Criteria for fiber selection based on apparel end-use, including activewear, protective wear, medical garments, and industrial clothing, Introduction to smart textiles, Relevance and trends in smart textiles for functional fashion and wearable's.

| Unit:3 | Technical Textiles in Apparel Applications | 12 hours |
|---|---|---|

Sportswear & Athleisure: Moisture wicking, compression garments, Protective Wear: Fire-resistant, bulletproof, chemical protection, Medical Apparel: Surgical gowns, compression socks, hygiene wear, Work wear & Uniforms: Durable and weather-protective clothing.

| Unit:4 | Merchandising and Market Relevance | 12 hours |
|---|---|---|

Product development using technical textiles, Specification sheets and communicating technical features, Consumer demand and branding of performance garments, Key buyers, export opportunities, and sourcing countries.

| Unit:5 | Standards, Certifications & Sustainability | 12 hours |
|---|---|---|

Global and Indian standards (ISO, ASTM, OEKO-TEX®, BIS),Eco-friendly and recycled technical textiles,Compliance and testing protocols (colorfastness, tensile strength, etc.),Current trends: Smart textiles, wearable tech, circular economy in performance wear.

| | |
|---|---|
| **Total Lecture hours** | **60 hours** |

**Text Books**

| | |
|---|---|
| 1 | Handbook of Technical Textiles – A.R. Horrocks & S.C. Anand |
| 2 | Technical Textiles and Their Applications – Dr. S. Grace Annapoorani |
| 3 | Smart Textiles for Designers – Rebeccah Pailes-Friedman |
| **Reference Books** | |
| 1 | Textiles for Protection – Richard A. Scott |
| 2 | Functional Textiles for Improved Performance, Protection and Health – N. Pan & G. Sun |
| 3 | Technical Textiles: Market and Trend – Textile Institute |
| **Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]** | |
| 1 | https://www.technicaltextile.net |
| 2 | https://textilelearner.blogspot.com |
| 3 | NPTEL – Functional Textiles and Smart Wearables |
| 4 | https://www.indiatechtextile.com (Ministry of Textiles) |
| **Course Designed By:**Mr.K.Balamurugan | |

| **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 | | 2025-2026 | |

**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 - laddering, 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