**B.Sc. Garment Designing & Production**

Syllabus

AFFILIATED COLLEGES

**Program Code:26N**

**2020 – 2021 onwards**



**BHARATHIAR UNIVERSITY**

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

**World Ranking: Times -801-1000,Shanghai -901-1000, URAP - 982)**

**Coimbatore - 641 046, Tamil Nadu, India**



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| **Program Educational Objectives (PEOs)** | |
| The **B. Sc. Garment Designing & Production** program describe accomplishments that  graduates are expected to attain within five to seven years after graduation | |
| PEO1 | **Garment Designing Ethos:** To bring the conceptual and methodological approaches of Garment Designing to bear on the challenges they take on,  abstracting design elements, recognizing sources of uncertainty, and applying appropriate models, techniques and evaluations to develop their products. |
| PEO2 | **Application of Production Skill:** To provide the students with a solid foundation in Production, Planning and Industrial Engineering principle required to develop  problem solving ability and give effective solution to the garment industry. |
| PEO3 | **Diversification:** To promote among student graduates the ability to gain  multidisciplinary knowledge through projects and industrial training, leading to a sustainable competitive edge in R&D and meeting societal needs. |
| PEO4 | **Projects:** To implant group work and team management skills with clear  coordination, promote knowledge transfer and deliver a varied complex projects. |
| PEO5 | **Teamwork:** To prepare the graduates for a successful career with effective communication skills, teamwork skills and work with values that meet the  diversified needs of industry, academia and research. |
| PEO6 | **Self Learning:** To develop self-learning ability of graduate by inculcating the  attitude about continuous learn, innovate and contribute to creation of new ideas for the benefit of the society at large. |
| PEO7 | **Entrepreneurs:** To encourage the graduate’s qualities of leadership for  technology innovation and entrepreneurship. |
| PEO8 | **Ethics and Social Relevance:** To sensitize students towards issues of social relevance, openness to other international cultures and to introduce them to  professional ethics and practice. |
| PEO9 | **Versatility:** To build up abilities and talents leading to creativity and productivity in fields and professions beyond the regular Garment Designing & Production  curriculum. |
| PEO10 | **Performance Indicator**: To achieve at least 85% of the graduates employed in careers such as Product development executives, Industrial Engineers, Production Executives, Sample Designers, Chief Executive Officers, Entrepreneurs’ in 5 to 7  years time. |



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| **Program Specific Outcomes (PSOs)** | |
| After the successful completion of B.Sc. Garment Designing and Production program, the  students are expected to | |
| PSO1 | Understand the organization and structure of the global textile/apparel complex. |
| PSO2 | Understand the raw materials and their process which are required to make ready  to wear apparels. |
| PSO3 | Develop garment products for specific target markets to meet expectations for cost  and quality (materials, performance, and aesthetics). |
| PSO4 | Evaluate the properties and performance of materials in garment products. |
| PSO5 | Apply the creative design process both aesthetic and technical performance and  evaluate outcomes. |
| PSO6 | Apply technical knowledge and skills in pattern making, fit assessment, materials  selection, and assembly processes to meet customer demand. |
| PSO7 | Analyze factors affecting human resource management issues, production planning, scheduling, and inventory control relative to business goals and  professional development. |
| PSO8 | Analyze the various production methods appropriate to products, quality, cost, and  equipment. |
| PSO9 | Apply technology and work measurement to increase productivity, decrease costs,  and shorten delivery time. |
| PSO10 | Study about the market assessment and consumer factors that influence apparel and  textile merchandising. |



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| **Program Outcomes (POs)** | |
| On successful completion of the B.Sc. Garment Designing & Production program | |
| PO1 | To gain basic knowledge of various sector of textile industry |
| PO2 | To attain thorough knowledge about the concepts involved such as material  selection, process etc in garment designing and production techniques |
| PO3 | To understand and applications of intellectual, trade and manufacturing concepts  for apparel sector where and when it is required |
| PO4 | Facilitates to Identify, formulate and analyze the complex situations to arrive acceptable solutions by applying domain specific knowledge, acquired through the  programme. |
| PO5 | Understand the impact of the professional solutions in societal and environmental  contexts, and demonstrate the knowledge of, and need for sustainable development. |
| PO6 | Commit to professional ethics and responsibilities in the associated disciplines. |
| PO7 | Acquire various technical skills relevant to the programme. |
| PO8 | Function effectively as an individual or as a member or leader in teams and in  multidisciplinary settings. |

# BHARATHIAR UNIVERSITY : : COIMBATORE 641 046

**B. Sc. Garment Designing & Production - Curriculum**

*(For the students admitted during the academic year 2020 – 21 onwards)*

**SCHEME OF EXAMINATION-Revised for Naan mudhalvan**

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| **Course Code** | **Title of the Course** | **Credits** | **Hours** | | **Duration** | | **Maximum Marks** | | |
| **Theory** | **Practical** | **CIA** | **ESE** | **Total** |
| **FIRST SEMESTER** | | | | | | | | | |
| 11T/F/  H/M | Language I | 4 | 6 | - | 3 | | 25 | 75 | 100 |
| 12E | English I | 4 | 6 | - | 3 | | 25 | 75 | 100 |
| 13A | Core Paper I - Basic Textile  Studies | 3 | 4 | - | 3 | | 20 | 55 | 75 |
| 13B | Core Paper II - Fashion Design  Concept and Methodology | 3 | 4 | - | 3 | | 20 | 55 | 75 |
| 13P | Core Practical I - Fashion and Art  Design | 4 | - | 4 | 3 | | 40 | 60 | 100 |
| 1AP | Allied Practical - I Computer  Application | 4 | - | 4 | 3 | | 40 | 60 | 100 |
| 1FA | Environmental Studies # | 2 | 2 | - | 3 | | - | 50 | 50 |
| **Total** | | 24 | 30 | | - | | 170 | 430 | 600 |
| **SECOND SEMESTER** | | | | | | | | | |
| 21T/F/  H/M | Language II | 4 | 6 | - | 3 | | 25 | 75 | 100 |
| 22E | English II | 4 | 6 | - | 3 | | 25 | 75 | 100 |
| 23A | Core Paper III - Woven Fabric  Manufacturing Studies | 3 | 4 | - | 3 | | 20 | 55 | 75 |
| 23B | Core Paper IV - Apparel  Manufacturing Technology I | 3 | 4 | - | 3 | | 20 | 55 | 75 |
| 23P | Core Practical II - Woven Fabric  Analysis & Textile CAD | 4 | - | 4 | 3 | | 40 | 60 | 100 |
| 2AP | Allied practical II - Basic Apparel  Production | 4 | - | 4 | 3 | | 40 | 60 | 100 |
| 2FB | Value Education – Human Rights  # | 2 | 2 | - | 3 | | - | 50 | 50 |
| **Total** | | 24 | 30 | | - | | 170 | 430 | 600 |
| **THIRD SEMESTER** | | | | | | | | | |
| 33A | Core Paper V - Textile Coloration  Techniques | 3 | 4 | - | | 3 | 20 | 55 | 75 |
| 33B | Core Paper - VI - Knit Fabric  Manufacturing Studies | 4 | 4 | - | | 3 | 25 | 75 | 100 |
| 33C | Core Paper VII - Apparel  Manufacturing Technology II | 4 | 4 | - | | 3 | 25 | 75 | 100 |
| 33P | Core Practical III - Pattern Making  and Grading of Knits | 4 | - | 6 | | 3 | 40 | 60 | 100 |
| 3AP | Allied Practical III - Knit fabric  analysis | 4 | - | 6 | | 3 | 40 | 60 | 100 |



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| 3ZP | Skill Based Subject I- Textile  Coloration Techniques | 3 | - | 4 | 3 | 30 | 45 | 75 |
| 3FA/B/ C/D | Tamil@ / Advanced Tamil # (OR) Non-major elective-I (Yoga for Human Excellence)# / Women’s  Rights#/Constitution of India# | 2 | 2 | - | 3 | - | 50 | 50 |
| **Total** | | 24 | 30 | | - | 180 | 420 | 600 |
| **FOURTH SEMESTER** | | | | | | | | |
| 43A | Core Paper VIII - Apparel Merchandising and Trade  Documentation | 3 | 4 | - | 3 | 20 | 55 | 75 |
| 43B | Core Paper IX - Apparel Testing  and Quality control | 4 | 5 | - | 3 | 25 | 75 | 100 |
| 43C | Core Paper X - Apparel costing  Techniques | 4 | 4 | - | 3 | 25 | 75 | 100 |
| 43P | Core Practical IV - Garment  Construction Knits | 4 | - | 5 | 3 | 40 | 60 | 100 |
| 4AP | Allied Practical IV - Apparel  Testing and Quality Control | 4 | - | 5 | 3 | 40 | 60 | 100 |
| 4ZP | Skill Based Subject II - Computer  Aided Pattern Designing | 3 | - | 5 | 3 | 30 | 45 | 75 |
| 4FA/B/ C | Tamil@/Advanced Tamil # (OR) Non-major elective -II (General  Awareness #) | 2 | 2 | - | 3 | - | 50 | 50 |
| **Total** | | 24 | 30 | | - | 180 | 420 | 600 |
| **FIFTH SEMESTER** | | | | | | | | |
| 53A | Core Paper XI - Apparel Industrial  Engineering –I | 3 | 5 | - | 3 | 20 | 55 | 75 |
| 53B | Core Paper XII - Total Quality  Management | 3 | 4 | - | 3 | 20 | 55 | 75 |
| 53C | Core Paper XIII - Technical Textile  and Functional Apparel | 3 | 4 | - | 3 | 20 | 55 | 75 |
| 53P | Core Practical V - Computer Aided  Fashion Art | 4 | - | 6 | 3 | 40 | 60 | 100 |
| 5EP/Q/  R | Elective Paper I | 4 | - | 6 | 3 | 40 | 60 | 100 |
| 5ZP | Skill Based Subject III - Design  Process and Product development I | 3 | - | 5 | 3 | 30 | 45 | 75 |
| 57V | Internship Viva Voce # | 2 | - | - | - | - | - | 50 |
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| **Total** | | 22 | 30 | | - | 170 | 330 | 550 |
| **SIXTH SEMESTER** | | | | | | | | |
| 63A | Core Paper XIV - Apparel  Industrial Engineering –II | 3 | 6 | - | 3 | 20 | 55 | 75 |
| 63B | Core Paper XV – ERP | 3 | 4 | - | 3 | 20 | 55 | 75 |
| 63C | Core Paper XVI - Entrepreneurship and Small  Business Development | 3 | 4 | - | 3 | 20 | 55 | 75 |
| 6EP/Q/  R | Elective Paper II | 4 | - | 6 | 3 | 40 | 60 | 100 |

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| 6EA/B/  C | Elective Paper III | 4 | 5 | - | 3 | 25 | 75 | 100 |
| 6ZP | Skill Based Subject IV - Project  and Viva Voce\* | 3 | - | 5 | 3 | - | 75 | 75 |
| 67V | Extension Activities @ | 2 | - | - | - | 50 | - | 50 |
|  | Naan Mudhalvan skill course-Employability readiness-Naandi/Unnati/Quest/Izapy/IBM  SkillsBuilt | - | - | - | - | - | - | - |
| **Total** | | 22 | 30 | | - | 175 | 375 | 550 |
| **Grand Total** | | 140 | - | - | - | - | - | 3500 |
| UGC – SWAYAM / MOOCS / NPTEL Additional Credit ( Optional ) | | | | | | | | |

Note:

@ No University Examinations. Only Continuous Internal Assessment (CIA) # No Continuous Internal Assessment (CIA). Only University Examinations.

\* For Project Work 80% Marks and Viva Voce 20% Mark

# Additional Credit Course

Earning Additional credit course is not mandatory for Programme Completion. Prescribed courses under UGC – SWAYAM/ MOOCS/ NPTEL will be available for the affiliated colleges, as an optional.

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| List of Elective papers (Colleges can choose any one of the paper as Electives) | | | |
| Elective –I | A | 5EP | Pattern Making and Garment Construction of Woven |
| B | 5EQ | Draping |
| C | 5ER | Surface Ornamentation |
| Elective –II | A | 6EP | Design Process and Product Development II |
| B | 6EQ | Advanced Fashion Illustration |
| C | 6ER | Advanced CAD |
| Elective –III | A | 6EA | Fashion Merchandising |
| B | 6EB | Apparel Retailing |
| C | 6EC | Brand Management |



First Semester



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| **Course code** | | **13A** | **BASIC TEXTILE STUDIES** | **L** | **T** | | **P** | **C** | |
| **Core** | | | **Paper I** | **-** | **3** | | **-** | **3** | |
| **Pre-requisite** | | | **Basic science knowledge** | **Syllabus Version** | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Impart the knowledge of fibers, and their sources. 2. Help the students to understand the identification and properties of fibers. 3. Provide students with the knowledge of yarn manufacturing and their properties. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand the knowledge about textile fibers and their manufacturing process | | | | | | | | K2 |
| CO 2 | Understand about the textile yarn and its manufacturing process | | | | | | | | K2 |
| CO 3 | Apply the domain knowledge to identify the textile fibers and yarn | | | | | | | | K3 |
| CO 4 | Analyze the various structural properties of textile fibers | | | | | | | | K4 |
| CO 5 | Evaluate the quality of fibers and yarn | | | | | | | | K5 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Unit:1** | | **Textile Fibers – Cellulose Fibers** | | | | **12 hours** | | | |
| Textile fibers: Classification – General properties – Identification of textile fibers - Polymer – Terminologies – Polymerization types - Types of polymers – Methods of filament spinning.  Cotton: Grading of cotton - Properties of cotton fiber - Production, morphological structure end uses. Jute: Introduction - Production Process - Properties - End uses. Flax: Introduction Production Process –Properties - End uses. | | | | | | | | | |
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| **Unit:2** | | **Natural Protein Fibers** | | | | **12 hours** | | | |
| Wool: Producing countries - Grading - Fiber morphology – Chemical structure & composition  - Properties - End Uses – Study of Woolen and Worsted Yarns - Brief study on specialty hair fibers and uses.  Silk: Producing countries – production of silk fiber. Chemical composition – Properties - End uses. . Brief study on wild silk varieties. | | | | | | | | | |
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| **Unit:3** | | **Man Made Fibers** | | | **12 hours** | | | | |
| Introduction – Rayon fibers -Manufacturing sequence of viscose fiber - Viscose fiber properties - Introduction of Modal, Llyocell & Bamboo fibers and uses. Manufacturing &  Properties of Polyester, Nylon, Acrylic and Spandex fibers. | | | | | | | | | |
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| **Unit:4** | | **Yarn manufacturing** | | | **12 hours** | | | | |
| Introduction to yarn classification – Staple spinning systems – Production sequence for cotton yarn – Comparison of carded and combed yarn – Yarn winding – Study of yarn quality  parameters – Various yarn package defects – yarn numbering. | | | | | | | | | |
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| **Unit:5** | | **Latest Trends in Fibers and Yarn** | | | | **12 hours** | | | |
| Introduction to blended textile. Classification of Sewing threads & applications. Introduction to organic cotton & specialty natural fibers such as, banana, pineapple, spider Silk – Brief  study about OE & Air jet spinning. Introduction to fibers and yarns used in technical textiles. | | | | | | | | | |



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|  | | **Total Lecture hours** | **60 -- hours** |
| **Text Book(s)** | | | |
| 1 | Hand book of textile fibers, J.Gordon Cook, Woodhead Publications, 1984. | | |
| 2 | The Technology of Short Staple Spinning, W. Klein, North Carolina State University,  1987. | | |
| 3 | Manufactured Fiber Technology, V.B. Gupta & V.K. Kothari, Springer science &  Business Media,1997. | | |
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| **Reference Books** | | | |
| 1 | Physical Properties of Textile Fibres, W.E. Morton & J.W.S. Hearle, Woodhead  Publications, 2008. | | |
| 2 | New Spinning Technology, W.Klien, Textile Institute, 1993. | | |
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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://nptel.ac.in/courses/116/102/116102026/> | | | |
| <https://onlinecourses.swayam2.ac.in/cec19_te01/preview> | | | |
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| Course Designed By: P.Murugan | | | |

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



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| **Course code** | | **13B** | **FASHION DESIGN CONCEPT &**  **METHODOLOGY** | **L** | **T** | | **P** | | **C** | |
| **Core** | | | **Paper II** | **-** | **3** | | **-** | | **3** | |
| **Pre-requisite** | | | **Basic Knowledge in fashion and**  **designs** | **Syllabus Version** | | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Impart the knowledge of fashion and their concept of evolution. 2. Help the students to understand the principle and elements of design. 3. Provide students with the knowledge of design development according to the fashion trends. | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | Understand about the fashion, design and its evolution | | | | | | | | | K2 |
| CO 2 | Understand about elements and principles of design applicable for fashion  product manufacturing | | | | | | | | | K3 |
| CO 3 | Analyze about the various facts to identify the fashion trends | | | | | | | | | K4 |
| CO 4 | Apply the domain knowledge to develop design concepts | | | | | | | | | K3 |
| CO 5 | Apply the domain knowledge to develop samples using available materials | | | | | | | | | K3 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
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| **Unit:1** | | **Introduction to Fashion** | | | | | **12 hours** | | | |
| Fashion Definition – Fashion terminologies – Classification of fashion – Fashion cycle – Factors influencing in fashion – Role and responsibilities of a fashion designers – Types of  fashion designers. | | | | | | | | | | |
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| **Unit:2** | | **Elements of design** | | | | | **12 hours** | | | |
| Introduction to design – Types of design – Elements and their importance in a design – Line – Types – Application of line in a garment –Influence of line in various illusion - Shape – Types  – Importance of shape in garment design – Texture – Determinants of texture – Effect of texture on color & physical proportion | | | | | | | | | | |
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| **Unit:3** | | **Color & Color theory** | | | | **12 hours** | | | | |
| Introduction to color theories – Dimensions of color – Color systems – Warm and cool colors  – color schemes – Application of color in fashion design – Visual impact of color in a garment – Importance of color psychology | | | | | | | | | | |
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| **Unit:4** | | **Principles of design** | | | | **12 hours** | | | | |
| Importance of principles of design in fashion – Balance and its types – Proportion and its application in garment design – Emphasis – Creating emphasis in a garment using various techniques – Harmony and its impact in garment design – Rhythm – Application of rhythm in  garment design | | | | | | | | | | |
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| **Unit:5** | | **Introduction to Fashion Style Details and Various**  **Garments** | | | **12 hours** | | | | | |
| Importance of details in apparel design – Various types of neck, collar & sleeve – Different  types of waist & hem lines – Types of plackets, Pockets- Garments for men, women and kids | | | | | | | | | | |



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| – Unisex garments – Intimate , active and functional garments | | | |
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|  | | **Total Lecture hours** | **60 -- hours** |
| **Text Book(s)** | | | |
| 1 | Elements of Fashion and Apparel Design, G.J.Sumathi, New Age International private  Ltd, New Delhi , 2002. | | |
| 2 | Fashion Source Book, Kathryn Mckelvey & Janine Munslow, Blackwell Publication,  2006. | | |
| 3 | Encyclopaedia of Fashion Details, Patric John Ireland, Prentice Hall, NewJ, 1988. | | |
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| **Reference Books** | | | |
| 1 | Apparel Making in Fashion Design, Injoo Kim & Mykyung Uh, Fairchild Publications,  New York, 1988. | | |
| 2 | A Complete Guide to Fashion Designing, Jenny Davis, Bharat Bhushan Abhishek  Publication, 2006. | | |
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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/145> | | | |
| <https://munsell.com/color-blog/modern-traditional-color-theory-part-1/> | | | |
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| Course Designed By: B.Jeyanthy | | | |

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



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| **Course code** | | | **13P** | **FASHION & ART DESIGN** | **L** | **T** | **P** | **C** |
| **Core** | | | | **Practical I** | **-** | **-** | **4** | **4** |
| **Pre-requisite** | | | | **Practical Knowledge on drawing** | **Syllabus Version** | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Understand the fundamental and principles of design 2. Practice different illustration techniques 3. Provide self employment as a illustrator. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | | Understand motif designs, layouts, repeats, textures for textile and garment  substrate using various techniques , | | | | | | K2 |
| CO2 | | Create motif designs, layouts, repeats for textile and garment substrate using  and apply color | | | | | | K6 |
| CO3 | | Understand about head theories, flat sketches for garments and accessories | | | | | | K2 |
| CO4 | | Create flat sketches for garments and fashion accessories | | | | | | K6 |
| CO5 | | Create 8 head theory figure for fashion | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
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| **Part A** | | | | | | **20 hours** | | |
| 1. Object drawing and perspective drawing 2. Various shading methods 3. Techniques of Enlarging & Reducing the motifs 4. Motifs layouts - Non directional, One directional, Two directional, All over packed, All over set and All over tossed. 5. Techniques of repeats: Straight, box, half drop, five star and random Plaids, Checks and Stripes 6. Colour chart preparation, Colour theory and colour harmonies | | | | | | | | |
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| **Part B** | | | | | | **40 hours** | | |
| 1. Art of creating textures.- Pleats, Tucks, Smocking & Quilting 2. Practice to draw Flat Sketches for Basic Men’s , Women’s & Kid’s Garments 3. Proportion study –8 head theory – sticks, block, & flesh figures for men & women. 4. Practice to draw the accessories.- Footwear& Handbags. | | | | | | | | |
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| **Text Book(s)** | | | | | | | | |
| 1 | Fashion Illustration Techniques: A Super Reference Book for Beginners , [Zeshu](https://www.amazon.co.uk/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Zeshu%2BTakamura&text=Zeshu%2BTakamura&sort=relevancerank&search-alias=books-uk)  [Takamura,](https://www.amazon.co.uk/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Zeshu%2BTakamura&text=Zeshu%2BTakamura&sort=relevancerank&search-alias=books-uk) Rockport Publishers, 2012. | | | | | | | |
| 2 | Fashion Illustration & Design: Methods & Techniques for Achieving Professional  Designs, Manuela Brambatti , Promopress Publications, 2017. | | | | | | | |
| 3 | Fashion Flats and Technical Drawing , Bina Abling & Felis Dacosta , Bloomsbury  publications, 2017. | | | | | | | |
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| **Reference Books** | | | | | | | | |
| 1 | Fashion Sketch Books , Bina Abling , Bloomsbury publications,2012. | | | | | | | |
| 2 | Fashion Source Book, Kathryn Mc Kelvey, Wiley Blackwell Publications,1996. | | | | | | | |



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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) |
| <https://www.youtube.com/watch?v=_uUNMHFSsBk> |
| <https://youtu.be/SSzQZzpGDl0> |
| <https://youtu.be/dy_wyqAS8wE> |
|  |
| Course Designed By : R.Sneha |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | S | S | S | S |
| **CO2** | S | S | S | S | S | S | S | S |
| **CO3** | S | M | M | S | M | S | S | S |
| **CO4** | S | M | M | S | M | S | S | S |
| **CO5** | S | M | M | M | M | S | S | S |



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| Experience | HRA | DA | LIC | PF |
| 5 Years & Above | 30% | 15% | 3% | 700 |
| Less than 5 Years | 15% | 5% | 3% | 700 |

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| **Course code** | | | **1AP** | **COMPUTER APPLICATION** | **L** | **T** | | | **P** | **C** |
| **Allied** | | | | **Practical - I** | **-** | **-** | | | **4** | **4** |
| **Pre-requisite** | | | | **Basic knowledge about computer**  **operating tools** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of Office software. 2. Understand the different presentation and visualization tools of Ms-Office 3. Understand the problem solving techniques and flow charts of Ms-Office | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | | Understand the Ms-Office tools and their application | | | | | | | | K2 |
| CO 2 | | create the document formats by applying the domain Knowledge | | | | | | | | K6 |
| CO 3 | | Create Excel statement and charts | | | | | | | | K6 |
| CO 4 | | Understand about the HTML program and their application | | | | | | | | K2 |
| CO 5 | | Create web pages with hyperlinks linking all pages | | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
|  | | | | | | | | | | |
| **Part A** | | | **MS-Office** | | | | | **45 hours** | | |
| 1. Prepare an interview call letter using mail merge in MS word 2. Design the given advertisement using MS word. Apply various fonts and pictures. 3. Create line, bar and pie charts for the given data using MS Excel. 4. Prepare students mark statement with the following fields Roll No, Name, Sub1,Sub2, Sub3, Sub4, Sub5. Calculate Total, Average, Result and Grade. Apply Conditional formatting. 5. Prepare employee salary list with fields Employee No, Employee Name, Experience, Basic Pay, HRA,DA,LIC,PF. Calculate Gross salary & Net Salary based on the following conditions 6. Prepare a power point presentation about a product. Apply animation and slide timing. 7. Create an Email ID and use various mail features. | | | | | | | | | | |
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| **Part B** | | | **HTML** | | | | | **15 hours** | | |
| **1.** Design five web pages with hyperlinks linking all pages | | | | | | | | | | |
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|  | | | **Total Lecture hours** | | | | **60 -- hours** | | | |
| **Text Book(s)** | | | | | | | | | | |
| 1 | Word for Beginners, M.L. Humphrey, M.L. Humphrey publications, 2019. | | | | | | | | | |
| 2 | Microsoft Word 2019 Step by Step, Joan Lambert, Microsoft Press, 2019. | | | | | | | | | |
| 3 | Practical Techniques in Microsoft Word, Neibuer & R.Alan, Sybex Inc.,U.S. Sybex,1986 | | | | | | | | | |
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| **Reference Books** | |
| 1 | Exploring Microsoft Word, Mary Anne Poatsy, Lynn Hogan & Linda Lau, Pearson  Publications, 2019. |
| 2 | Benchmark Series: Microsoft Excel 2019 Levels 1&2, Audrey Roggen kamp, Ian Rutkowsky & Nita Rutkosky, Paradigm Education Solutions publications, 2019 |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| [https://www.microsoft.com/en-in/p/swayam/9nblggh4xxml?activetab=pivot:overviewtab](https://www.microsoft.com/en-in/p/swayam/9nblggh4xxml?activetab=pivot%3Aoverviewtab) | |
| <https://onlinecourses.swayam2.ac.in/cec20_cs05/preview> | |
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| Course Designed By : P.Murugan | |

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



Second Semester



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| **Course code** | | **23A** | **WOVEN FABRIC MANUFACTURING STUDIES** | **L** | **T** | | **P** | | **C** | |
| **Core** | | | **Paper III** | **-** | **3** | | **-** | | **3** | |
| **Pre-requisite** | | | **Basic knowledge about textile fibre**  **and yarn** | **Syllabus Version** | | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Understand the knowledge about Preparatory process of weaving. 2. Helps the student to learn tappet, dobby and jacquard loom mechanisms. 3. Facilitates student’s skill in the field of Woven fabric designs. | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | Understand about the weaving preparatory process | | | | | | | | | K2 |
| CO 2 | Understand about the different looming mechanism | | | | | | | | | K2 |
| CO 3 | Apply the domain knowledge to identify the woven fabric structure | | | | | | | | | K3 |
| CO 4 | Analyze about the various structural properties of woven fabrics | | | | | | | | | K4 |
| CO 5 | Create new designs for tappet, dobby & Jacquard looms | | | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
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| **Unit:1** | | **Winding Process** | | | | **10 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. | | | | | | | | | | |
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| **Unit:2** | | **Warping & Sizing Process** | | | | **12 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. | | | | | | | | | | |
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| **Unit:3** | | **Tappet Loom Mechanism** | | | **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. | | | | | | | | | | |
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| **Unit:4** | | **Weave Diagram** | | | **14 hours** | | | | | |
| Introduction to weaves – Weave diagram – Plain weave & derivatives – Twill weave &  derivatives – Satin & sateen weaves – Ordinary and Brighten Honey Comb; Huck-a-Back; Mock Leno; extra warp and extra weft figuring – single and double colour. | | | | | | | | | | |



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| **Unit:5** | | **Dobby & Jacquard loom Mechanism** | **12 hours** |
| Objects of dobby & jacquard mechanisms – Types of dobby & jacquard – Study of negative & positive dobbies – Study of single cylinder & double cylinder jacquard mechanisms. Shuttle less looms: Introduction - Advantages - Types of shuttle less looms: projectile, rapier,  air jet, water jet and multiphase weaving. | | | |
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|  | | **Total Lecture hours** | **60 hours** |
| **Text Book(s)** | | | |
| 1 | Fabric Structure and Design, N.Gokarneshan, New Age International Publishers, New  Delhi, 2008. | | |
| 2 | Handbook of Weaving, Sabit Adanur, CRC Press, 2000. | | |
| 3 | Fabric Forming, B.Hasmukhrai, SSM ITT Co operative stores Ltd, Komarapalayam,  1996. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Principles of Weaving, R.Marks, & A.T.C. Robinson, The Textile Institute, 1976 | | |
| 2 | Design of Woven Fabrics, I.Blinov & S.Belay, MIR Publishers, Moscow, 1988 | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://nptel.ac.in/courses/116/102/116102005/> | | | |
| <https://nptel.ac.in/courses/116/102/116102017/> | | | |
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| Course Designed By : T.Sathishkumar | | | |

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



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| **Course code** | | **23B** | **APPAREL MANUFACTURING TECHNOLOGY I** | **L** | **T** | | | **P** | **C** |
| **Core** | | | **Paper IV** | **-** | **3** | | | **-** | **3** |
| **Pre-requisite** | | | **Basic knowledge about cutting**  **and sewing tools and equipments** | **Syllabus Version** | | | | **2020-2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the preparatory process of sewing process. 2. Help the students to understand the working principles of various sewing machines. 3. Enhance the student’s knowledge in garment finishing equipments. | | | | | | | | | |
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| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand about preparatory process and equipments for sewing ie spreading  & cutting | | | | | | | | K2 |
| CO 2 | Understand the SNLS, DNLS, O/L & F/L machine working mechanisms. | | | | | | | | K2 |
| CO 3 | Analyze the spreading and cutting methods for one way or two way printed  fabric and speciality textile materials | | | | | | | | K4 |
| CO 4 | Apply the domain knowledge to identify the right choice of the machine and  work aids for the specific style developments | | | | | | | | K3 |
| CO 5 | Analyze the possible defects related to sewing and cutting process | | | | | | | | K4 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Unit:1** | | **Spreading Machines** | | | | | **12 hours** | | |
| Types of Fabric Packages. Types of Fabrics – One Way – Two Way Fabrics – Their effect on spreading. Methods of Fabric spreading. Spreading equipments - manual, semi automatic and fully automatic machines. Marker planning, Marker efficiency, Factors affecting marker  efficiency. Marker duplicating methods – Computer aided marker making. | | | | | | | | | |
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| **Unit:2** | | **Cutting Machines** | | | | | **12 hours** | | |
| Introduction to cutting machines. Types and functions of cutting machines – straight knife, round knife, band knife cutting machines, die, laser, plasma, water jet and ultra sonic cutting  machines; notches, drills and thread markers &Computerized cutting machines. Common defects in cutting and their remedies. | | | | | | | | | |
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| **Unit:3** | | **Sewing Machines** | | | | **12 hours** | | | |
| Introduction to sewing Needles: Types, size, selection and their application - Basic parts of sewing machines – primary and auxiliary parts and their functions .Classification of sewing machine and its functions –SNLS, DNLS, over lock, flat lock. Sewing machine bed types- Description and application of each bed –Flat bed -Cylinder bed -Post bed. Special  attachments in sewing machines – guides, folders, stackers, trimmers, ziggers. | | | | | | | | | |
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| **Unit:4** | | **Special Purpose Sewing Machines** | | | | **12 hours** | | | |
| Introduction to different special purpose sewing machines. Basic working of Feed of Arm,  Button Hole sewing, button sewing, Bar tack, blind stitch machines. Embroidery sewing | | | | | | | | | |



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| machines. Latest developments in sewing machines. Sewing machine maintenance. | | | |
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| **Unit:5** | | **Finishing Machines** | **12 hours** |
| Introduction to Fusing – principles, fusing machines and its working principle; Pressing - Principles and classification of pressing. Garment folding-types Packaging-types, materials, method and equipments. Selection of packaging design. Packaging-Types of package forms-  Types of packaging materials. | | | |
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|  | | **Total Lecture hours** | **60 hours** |
| **Text Book(s)** | | | |
| 1 | The Technology of Clothing Manufacture, Harold Carr & Barbara latham, Black well  Sciences, 1996 | | |
| 2 | Apparel Manufacturing Handbook, Jacob Solinger, Van Nostrand Reinhold Company,  1980. | | |
| 3 | Apparel Manufacturing Sewn Product Analysis, Ruth E. Glock & Grace I. Kunz, Pearson  Prentice Hall, 2005. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Sewing for the Apparel Industry, Shaeffer Claire, Prentice Hall, New Jersey, 2001. | | |
| 2 | A New Look at Apparel Mechanization, Technical Advisory Committee of AAMA,  1978. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://youtu.be/CWpbfn93Lyw> | | | |
| <https://youtu.be/3zvhniTWhpY> | | | |
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| Course Designed By : S.Geetharani | | | |

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



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| **Course code** | | | **23P** | **WOVEN FABRIC ANALYSIS AND TEXTILE CAD** | **L** | **T** | | **P** | **C** | |
| **Core** | | | | **Practical II** | **-** | **-** | | **4** | **4** | |
| **Pre-requisite** | | | | **Basic knowledge about woven fabric** | **Syllabus**  **Version** | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Understand the fundamental and principles of weave patterns 2. Practice different weave designs and develop draft and peg plan 3.Practice to develop weave designs using software | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | | Understand about the constructional parameters of fabric. | | | | | | | | K2 |
| CO 2 | | Analyze different structures of woven fabrics | | | | | | | | K4 |
| CO 3 | | Apply the draft and peg-plan which are required to convert the design into  fabric | | | | | | | | K3 |
| CO 4 | | Create design, draft and peg plan for weaving the fabrics | | | | | | | | K6 |
| CO 5 | | Create various weave designs using software | | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
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| **Part A** | | | | | | | **40 hours** | | | |
| 1. Woven structural analysis –Plain, Twill, Satin, Sateen, Honeycomb, Huck-A - Back, Extra thread figuring fabrics**:** Design, draft, peg plan, denting plan. 2. Warp particulars**:** Material of warp - ends per length - count, direction of twist, Crimp percentage, cover factor, warp pattern. 3. Weft particulars**:** Material of weft - picks per unit length- count, direction of twist, twist per length, Crimp percentage, cover factor and warp pattern. 4. Fabric particulars**:** Total Cover factor, Weight of fabric and thickness. 5. Loom requirements: Shedding mechanism, heald count, and count. | | | | | | | | | | |
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| **Part B** | | | | | | | **20 hours** | | | |
| 1. Basics of Raster and vector images, types, image formats and colour concepts. 2. Development of dobby designs(part –I) based on interactiveness of weave. 3. Development of dobby designs (part –II) based on interactiveness 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. | | | | | | | | | | |
| **Text Book(s)** | | | | | | | | | | |
| 1 | Fabric Structure and Design, N.Gokarneshan, New Age International Publishers, New  Delhi, 2008. | | | | | | | | | |



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| 2 | Handbook of Weaving, Sabit Adanur, CRC Press, 2000. |
| 3 | Fabric Forming, B.Hasmukhrai, SSM ITT Co operative stores Ltd, Komarapalayam,  1996. |
|  | |
| **Reference Books** | |
| 1 | Principles of Weaving, R.Marks, A.T.C. Robinson, The Textile Institute, 1976 |
| 2 | Design of Woven Fabrics, I.Blinov & S.Belay, MIR Publishers, Moscow,1988 |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://nptel.ac.in/courses/116/102/116102005/> | |
| <https://nptel.ac.in/courses/116/102/116102017/> | |
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| Course Designed By : P.Murugan | |

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



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| **Course code** | | | **2AP** | **BASIC APPAREL PRODUCTION** | **L** | **T** | | **P** | | **C** |
| **Allied** | | | | **Practical II** | **-** | **-** | | **4** | | **4** |
| **Pre-requisite** | | | | **Basic knowledge about sewing**  **machine & Tools** | **Syllabus Version** | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of sewing. 2. Understand and practice the pattern development for various garment components. 3. Understand and practice of various stitches, seams , seam finishes and basic bodice development | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | | Understand about the Threading and pedalling procedure of various stitching  machine ie SNLS, F/L & O/L | | | | | | | K2 | |
| CO 2 | | Apply the domain Knowledge and develop cloth sample | | | | | | | K3 | |
| CO 3 | | Create the decorative edge finished sample using F/L & O/L machines | | | | | | | K6 | |
| CO 4 | | Create patterns for various garment component parts | | | | | | | K6 | |
| CO 5 | | Create the sample for various garment component parts | | | | | | | K6 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
|  | | | | | | | | | | |
| **Part A** | | | **Basic Stitching Practice** | | | | **15 hours** | | | |
| 1. Threading practice in SNLS, Over lock & Flat lock 2. Pedaling control practice in SNLS both Paper & Cloth 3. Straight & Wavy edge serging practice using over lock machine 4. Fold & Top Stitch Practice using Flat lock machine | | | | | | | | | | |
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| **Part B** | | | **Seams & Components Developments** | | | | **45 hours** | | | |
| 1. Seams – super imposed, lapped, bound and flat. 2. Basic Seam Finishes - Facing , Binding Bias facing 3. Fullness - darts, pleats, gathers and godets. 4. Collars – flat, roll, standing and shirt. 5. Pockets- patch, bound and side seam. 6. Yokes – simple, with fullness, releasing fullness, partial and midriff. 7. Plackets – one piece, two piece, and tailors. 8. Sleeves and Cuffs – set in, with bodice and sleeveless; cuffs: basic, two piece, and contoured 9. Basic Bodice Construction | | | | | | | | | | |
|  | | | **Total Lecture hours** | | | **60 -- hours** | | | | |
| **Text Book(s)** | | | | | | | | | | |
| 1 | The Technology of Clothing Manufacture, Harold Carr & Barbara latham, Black well  Sciences, 1996 | | | | | | | | | |
| 2 | Apparel Manufacturing Handbook, Jacob Solinger, Van Nostrand Reinhold Company,  1980 | | | | | | | | | |
| 3 | Apparel Manufacturing Sewn Product Analysis, Ruth E. Glock & Grace I. Kunz, Pearson  Prentice Hall, 2005. | | | | | | | | | |



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| **Reference Books** | |
| 1 | Shaeffer Claire, Sewing for the Apparel Industry, Prentice Hall, New Jersey, 2001. |
| 2 | A New Look at Apparel Mechanization, Technical Advisory Committee of AAMA,  1978. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://youtu.be/HgFhBrykiro> | |
| <https://youtu.be/Ax6JDDP_6O8> | |
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| Course Designed By : S.Geetharani | |

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



Third Semester



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| **Course code** | | **33A** | **TEXTILE COLORATION**  **TECHNIQUES** | **L** | **T** | | | **P** | | **C** |
| **Core** | | | **Paper V** | **-** | **3** | | | **-** | | **3** |
| **Pre-requisite** | | | **Basic knowledge about science** | **Syllabus**  **Version** | | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the preparatory process of wet processing. 2. Help the students to understand the working principles of various dyeing, printing and finishing machines. 3. Enhance the students knowledge in dyeing, printing & finishing process sequences and after treatments. | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | Understand the terms and terminologies related to processing sector | | | | | | | | K2 | |
| CO2 | Understand the various dyes ,dyeing and printing process followed in the  processing sector | | | | | | | | K2 | |
| CO3 | Apply the domain knowledge to find out the right choice of dyes and  process for natural and synthetic textile substrate | | | | | | | | K3 | |
| CO4 | Analyze the various printing styles and methods to find out the right choice  for the natural and synthetic textile substrate | | | | | | | | K4 | |
| CO5 | Understand the various textile finishing and their process techniques and  latest technologies | | | | | | | | K2 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
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| **Unit:1** | | **Introduction to coloration** | | | | | **12 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. Preparatory process: singeing – objectives – types of singeing, desizing – objectives –methods, and scouring – objectives –methods. Bleaching –objectives - types of bleaching agents – Hydrogen Peroxide bleaching process – optical whiteners. Mercerizing –objectives - types. | | | | | | | | | | |
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| **Unit:2** | | **Dyeing** | | | | | **12 hours** | | | |
| Dyeing: Terminology related to dyeing process - classification of dyes –Dyeing of cotton with reactive and Vat dyes- –Dyeing of synthetic textiles using disperse and acid dyes. Dyeing of Wool & silk textiles & blended textile materials - after treatments – types & principles of  different dyeing machines: winch – soft flow Jigger –- cheese and HTHP machines – merits & demerits. | | | | | | | | | | |
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| **Unit:3** | | **Printing** | | | | **12 hours** | | | | |
| Printing - methods of printing – screen preparation. Styles of printing – direct, resist, discharge, transfer. Print paste ingredients –after treatments. Pigment printing. Garment printing techniques – Fancy printing techniques: flock, Hi Density, Foil, Plastisol, foam,  khadi – burnout printing. Digital printing. | | | | | | | | | | |
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| **Unit:4** | | **Finishing** | **12 hours** |
| Finishing: objectives of finishing – temporary and permanent finishes. Chemical finish: wrinkle free – softeners – anti microbial – fire retardant. Mechanical finish: calendaring –  raising – shearing, Compacting Bio polishing. Stone washing-Application of enzymes in textile processing. | | | |
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| **Unit:5** | | **Effluent Treatment** | **12 hours** |
| Pollution - Brief study about ETP- Eco friendly processing techniques - Pollution - Treatment  of Textile Effluents. Eco Labels & Norms. Introduction to computer colour matching system. | | | |
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|  | | **Total Lecture hours** | **60 hours** |
| **Text Book(s)** | | | |
| 1 | Technology of Textile Processing , V.A.Shenai , Sevak Publications ,1979 | | |
| 2 | Technology of Bleaching and Dyeing of Textile Fibres, R.R.Chakravarthy & S.S.Trivedi,  Mahajan Book Publishers, 1979. | | |
| 3 | Dyeing and chemical technology of textile fibres, E.R.Trotman, Charles Griffin &  Co,1985 | | |
|  | | | |
| **Reference Books** | | | |
| 1 | The Bleaching and Dyeing of Cotton Material, R.S. Prayag, Weavers Service, 1983 | | |
| 2 | Chemical Processing of Synthetic Fibres and Blends, K.V.Datye & A.A.Vaidhay, John  Wiley & Sons, New York.,1982 | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://nptel.ac.in/courses/116/102/116102052/> | | | |
| <https://nptel.ac.in/courses/116/104/116104046/> | | | |
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| Course Designed By : B.Jeyanthy | | | |

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



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| **Course code** | | **33B** | **KNIT FABRIC**  **MANUFACTURING STUDIES** | **L** | **T** | | | **P** | **C** |
| **Core** | | | **Paper VI** | **-** | **4** | | | **-** | **4** |
| **Pre-requisite** | | | **Basic skill about textile fiber and**  **yarn** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the various knitting terms and machines. 2. Help the students to understand the working principles of various knitting machines. 3. Enhance the students knowledge in Warp, Weft, Flat and Jacquard knit design developments. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand the general knitting terms and their representations | | | | | | | | K2 |
| CO2 | Understand about the various knit structure formation | | | | | | | | K2 |
| CO3 | Understand about various knitting machines and its working mechanism | | | | | | | | K2 |
| CO4 | Apply the domain knowledge to develop knit designs | | | | | | | | K4 |
| CO5 | Analyze the various structures of knit fabrics | | | | | | | | K5 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Unit:1** | | **Introduction to Knitting** | | | | | **12 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. | | | | | | | | | |
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| **Unit:2** | | **Weft Knit Stitches** | | | | | **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. | | | | | | | | | |
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| **Unit:3** | | **Jacquard Knitting** | | | | **12 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. | | | | | | | | | |
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| **Unit:4** | | **Flat knitting** | | | | **12 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  knit wears. | | | | | | | | | |
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| **Unit:5** | | **Warp Knitting** | | **12 hours** |
| Introduction to warp knitting – Warp knitting terminologies – Open lap and closed lap. Basic lapping variations - Detailed study of knitting elements of Tricot and Raschel machines. Knitting action of Tricot and Raschel machines. Comparison of Tricot and Raschel machine.  Study of standard two bar warp knit structures and their properties – Lock knit, Satin, Reverse lock knit, Loop raised, Sharkskin and Queens Cord. | | | | |
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|  | | **Total Lecture hours** | | **60 hours** |
| **Text Book(s)** | | | | |
| 1 | Knitting Technology, D.B. Ajgaonkar, Universal Publishing Corpration, 2006. | | | |
| 2 | Knitting Technology, David.J.Spencer, Pergoman Press, 2014. | | | |
| 3 | Circular knitting technology, Chandrasekara Iyer, Meisenbach Bamberg publications,  1992. | | | |
|  | | | | |
| **Reference Books** | | | | |
| 1 | Flat Knitting, | | Dr.Samuel Raz , Meisenbach Bamberg publications,1991 | |
| 2 | Warp Knitting Technology, Dr.S.Raz, Verlag Meilland Textiberichte publications,1987. | | | |
|  | | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | | |
| <https://nptel.ac.in/courses/116/102/116102056/> | | | | |
| <https://nptel.ac.in/courses/116/102/116102008/> | | | | |
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| Course Designed By : Dr.C.B.SenthilKumar | | | | |

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



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| **Course code** | | **33C** | **APPAREL MANUFACTURING TECHNOLOGY II** | **L** | **T** | | **P** | | **C** |
| **Core** | | | **Paper VII** | **-** | **4** | | **-** | | **4** |
| **Pre-requisite** | | | **Basic Knowledge about garment**  **components making procedures** | **Syllabus Version** | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the fundamentals of pattern making. 2. Help the students to understand the stitches, seams and fullness used for apparel making. 3. Enhance the student’s knowledge in making of garment components. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand the knowledge about basics of pattern making and its tools | | | | | | | K2 | |
| CO2 | Understand the concept of grading and measurement | | | | | | | K2 | |
| CO3 | Analyze about the various stitches and seam classes | | | | | | | K4 | |
| CO4 | Analyze about the fullness and its variations applicable to garment | | | | | | | K4 | |
| CO5 | Create the various garment component parts | | | | | | | K6 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Unit:1** | | **Fundamentals of Pattern making Techniques** | | | | **10 hours** | | | |
| Concepts of pattern Making - Different types of pattern making - Principles for pattern drafting – pattern making tools - Concepts of Pattern Grading and its types. Normal figures measurements and its importance – Sequence of taking body measurements – Recording of  measurements - Standardization of body measurements for children and adults. | | | | | | | | | |
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| **Unit:2** | | **Stitches, Seams & Fullness** | | | | **14 hours** | | | |
| **Stitches & Seams:** Definition, stitch classes - Federal classifications, stitch parameters, factors to be considered in the selection of stitches. Stitching defects. Definition, Types of seams – Federal classifications, factors to be considered in the selection of seam, seam finishes and seam defects. **Fullness:** Dart & its types –Tucks and its variations – Pleats and  its variations - Flare, godets, gathers, shirring, single, double frills and flounces. | | | | | | | | | |
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| **Unit:3** | | **Neckline Finishes, Sleeves & Hemming Techniques** | | | **12 hours** | | | | |
| **Neckline Finishes:** Preparation of bias strip, bias facing, bias binding, fitted facing and French binding.  **Sleeves:** Types and construction of sleeves -plain, puffs, gathered, bell, bishop, circular, kimono, leg-o-mutton, Magyar sleeves and Raglan sleeves.  **Hemming Techniques:** Definition, types -machine stitched hem and hand-stitched hem. | | | | | | | | | |
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| **Unit:4** | | **Yokes & Collars** | | | **12 hours** | | | | |
| **Yokes:** Definition –Selection of yoke design, Types and construction of yoke -Simple yoke – yokes with or without fullness, midriff yokes, panel yokes, partial yokes.  **Collars:** Classification of collars, Types of collars–flat collars (Peter Pan collar, scalloped, flared, puritan collar, sailor collar) convertible collar, shirt collar with stand, Mandarin collar, shawl collar. | | | | | | | | | |
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| **Unit:5** | | **Pockets & Plackets** | **12 hours** |
| **Pockets**: Types–patch pocket –creating variations, set in pocket-bound pocket, welt pocket, pocket in a seam-front hip pocket, Attaching flap to a patch pocket.  **Plackets**: Inconspicuous plackets -continuous bound placket, two piece placket, zipper placket –slot seam & lapped seam. Conspicuous plackets -Tailored placket, fly opening – button and buttonhole method, Zipper method.  **Fasteners**: Types - Button and buttonholes, Hooks and Eye, Snap buttons, Velcro, Eyelets, Cords and Rivets. | | | |
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|  | | **Total Lecture hours** | **60 hours** |
| **Text Book(s)** | | | |
| 1 | Apparel Manufacturing - Sewn Product Analysis, Ruth.E.Glock, Grace.I.Kunz, Pearson  Prentice Hall, 2005. | | |
| 2 | Practical Clothing Construction, Mary Mathews, Cosmic Press, Madras,1986. | | |
| 3 | Sewing for the Apparel Industry, Claire Shaeffer, Prentice Hall Inc, New Jersey, 2001. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Garment Technology for Fashion Designers, Gerry Cooklin, Blackwell Science Ltd.,  2001. | | |
| 2 | System of Cutting , Zarapkar, Navneet publications, Bombay, 2017. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://youtu.be/HgFhBrykiro> | | | |
| <https://youtu.be/Ax6JDDP_6O8> | | | |
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| Course Designed By : S.Geetharani | | | |

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



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| **Course code** | | **33P** | **PATTERN MAKING AND GRADING OF KNITS** | **L** | **T** | | **P** | **C** |
| **Core** | | | **Practical III** | **-** | **-** | | **4** | **4** |
| **Pre-requisite** | | | **Basic knowledge about pattern making tools and properties of textile**  **fabric** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of Pattern making & Grading. 2. Understand and practice the pattern development for various Knitted Garment Styles for Kids. 3. Understand and practice the pattern development for various Knitted Garment Styles for adults. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Remember the pattern terms and making tools | | | | | | | K1 |
| CO2 | Understand the pattern and grading techniques | | | | | | | K2 |
| CO3 | Analyze the domain Knowledge and develop paper pattern | | | | | | | K4 |
| CO4 | Create patterns for the various knitted garment styles for kids | | | | | | | K6 |
| CO5 | Create patterns for the various knitted garment styles for Adults | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
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| **Part A** | | **Draft the pattern and grade the following garments for Kids** | | | | **30 hours** | | |
| 1. Rompers 2. Knitted frock 3. Kids bloomer 4. Overall with full sleeve | | | | | | | | |
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| **Part B** | | **Draft the pattern, grade and grade the following Women** | | | | **30 hours** | | |
| 1. High neck T shirt with full sleeve 2. Kimono sleeve T shirt 3. V Neck T shirt 4. Legging 5. Night pajama set | | | | | | | | |
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| **Part C** | | **Draft pattern and grade the following Men’s wear** | | | | **30 hours** | | |
| 1. Basic T shirt 2. Raglan T shirt with full sleeve 3. Polo T shirt with short sleeve 4. Hooded T shirt with front pocket 5. Bermuda with side pocket 6. Vest RN 7. Briefs, Trunks 8. Track pant | | | | | | | | |
|  | | **Total Lecture hours** | | | **90 -- hours** | | | |



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| **Text Book(s)** | |
| 1 | Design and Pattern Making for Stretch Fabrics, Richardson, Fairchild book publications,  2008. |
| 2 | Singer Sewing with Knits, Singer, Random House Canada, 1992. |
| 3 | The stretch and sew guide to sewing on knits, Ann Person ,KP Books,1994. |
|  | |
| **Reference Books** | |
| 1 | Professional Pattern Making for Designers, Jack Harford, Fairchild Publishers, 2003. |
| 2 | The Theory of Garment Pattern Making, [W. H. Hulme](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=W.%2BH.%2BHulme&search-alias=stripbooks), Read Books Publishers, 2011. |
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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://www.textileschool.com/344/pattern-grading-in-garment-manufacturing/> | |
| <https://textilelearner.blogspot.com/2014/03/methods-of-garment-pattern-grading.html> | |
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| Course Designed By : B.Jeyanthy | |

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



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| **Course code** | | **3AP** | **KNIT FABRIC ANALYSIS** | **L** | **T** | | **P** | **C** |
| **Allied paper** | | | **Practical III** | **-** | **-** | | **4** | **4** |
| **Pre-requisite** | | | **Basic knowledge of knit fabric**  **manufacturing concepts** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the different types of cam setting used in knitting machines. 2. Understand and practice the cam arrangements for various knit structures 3. Develop cloth sample and analyze the quality parameters of fabrics | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Understand about the different cam settings of various knitting machines | | | | | | | K2 |
| CO2 | Apply the domain Knowledge and develop cam arrangement for various knit  structures | | | | | | | K3 |
| CO3 | Create the Knit fabric patterns for Single Jersey and its derivatives | | | | | | | K6 |
| CO4 | Produce the Knit fabric patterns for Double Jersey and its derivatives | | | | | | | K6 |
| CO5 | Generate the Knit fabric patterns for Mini Jacquard and Auto striper designs | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
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|  | |  | | | | **90 hours** | | |
| 1. Draft the different cam diagrams used in conventional knitting machine. 2. Draw the various cams in advanced knitting machine along with different type of stitches. 3. Determine the knitted fabric GSM using various methods. 4. Development of the following samples: 5. Plain 6. Pique 7. Pearl 8. Lacoste 9. Twill 10. Cross miss 11. Two thread fleece 12. Mini jacquard design 13. Auto striper 14. Rib waffle 15. Flat back rib 16. Interlock 17. Ottoman rib 18. Electronic Jacquard motif   5. Analyze the given knitted fabric sample for the following particulars:   1. Course and Wale Density 2. Loop length 3. Areal Density (GSM) 4. Tightness Factor 5. Technical graph 6. Cam order 7. Needle order | | | | | | | | |



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|  | | **Total Lecture hours** | **90 -- hours** |
| **Text Book(s)** | | | |
| 1 | Knitting Technology, D.B. Ajgaonkar, Universal Publishing Corpration,2006. | | |
| 2 | Knitting Technology, David .J.Spencer, Pergoman Press, 2014. | | |
| 3 | Circular knitting technology, Chandrasekara Iyer, Meisenbach Bamberg publications,  1992. | | |
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| **Reference Books** | | | |
| 1 | Flat Knitting, Dr.Samuel Raz, Meisenbach Bamberg publications,1991 | | |
| 2 | Warp Knitting Technology, Dr.S.Raz, Verlag Meilland Textiberichte publications,1987. | | |
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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://nptel.ac.in/courses/116/102/116102056/> | | | |
| <https://nptel.ac.in/courses/116/102/116102008/> | | | |
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| Course Designed By : Dr.P.P.Gopalakrishnan | | | |

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



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| **Course code** | | | **3ZP** | **TEXTILE COLORATION TECHNIQUES - PRACTICAL** | **L** | **T** | | | **P** | **C** |
| **Skill Based Subject** | | | | **Skill Based Subject I** | **-** | **-** | | | **3** | **3** |
| **Pre-requisite** | | | | **Knowledge about dyeing and**  **printing process sequences** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of wet processing techniques. 2. Understand and practice the coloration techniques 3. Understand and practice of various fancy effects using resist style of dyeing | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | | Understand about the fundamentals of wet processing techniques | | | | | | | | K2 |
| CO2 | | Apply the domain Knowledge and develop the cloth sample for dyeing and  printing | | | | | | | | K3 |
| CO3 | | Create the dyed sample using natural and synthetic fibers | | | | | | | | K6 |
| CO4 | | Create the printed sample using natural and synthetic fibers | | | | | | | | K6 |
| CO5 | | Create the sample using tie and dye and batik techniques | | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | |  | | | | | **60 hours** | | |
| 1. Estimation of water hardness by EDTA method. 2. Combined Scouring & Bleaching of grey cotton knitted fabrics and estimation of loss percentage. 3. Dye the given cotton sample with natural dyes. 4. Dye the given cotton sample with hot brand reactive dyes & H-E dyes. 5. Dye the given Silk material with acid / basic dyes. 6. Dye the given Acrylic material with basic dyes. 7. Dye the given polyester sample using carriers. 8. Dye the given fabric for the given pattern using Tie & Dye Technique. 9. Develop a batik motif and print on the given sample. 10. Prepare the print paste with pigment colour and print on the given fabric. 11. Print the given fabric with reactive dyes by discharge Style. 12. Prepare the print paste with reactive dyes and print on the given fabric by discharge style | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | **Total Lecture hours** | | | | **60 -- hours** | | | |
| **Text Book(s)** | | | | | | | | | | |
| 1 | Textile Coloration and printing, Warren .S. Perkins, Carolina Academic Press, 1996 | | | | | | | | | |
| 2 | Technology of Bleaching and Dyeing of Textile Fibres, R.R. Chakravarthy &  S.STrivedi, Mahajan Book Publishers, 1979. | | | | | | | | | |
| 3 | Dyeing and chemical technology of textile fibres, E.R.Trotman, Charles Griffin &  Co,1985 | | | | | | | | | |
|  | | | | | | | | | | |
| **Reference Books** | | | | | | | | | | |
| 1 | The Bleaching and Dyeing of Cotton Material, R.S. Prayag, Weavers Service, 1983 | | | | | | | | | |
| 2 | Chemical Processing of Synthetic Fibres and Blends, K.V.Datye & A.A.Vaidhay, John  Wiley & Sons, New York.,1982 | | | | | | | | | |



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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) |
| <https://nptel.ac.in/courses/116/102/116102052/> |
| <https://nptel.ac.in/courses/116/104/116104046/> |
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| Course Designed By: B.Jeyanthy |

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



Fourth Semester



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| **Course code** | | **43A** | **APPAREL MERCHANDISING**  **AND TRADE DOCUMENTATION** | **L** | **T** | | | **P** | **C** |
| **Core** | | | **Paper VIII** | **-** | **3** | | | **-** | **3** |
| **Pre-requisite** | | | **Basic Knowledge about various**  **departments and their role in an apparel business** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the apparel merchandising concepts. 2. Help the students to understand the process flow and merchandising procedures of apparel sector. 3. Enhance the student’s knowledge in export procedures. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand about the merchandising concepts | | | | | | | | K2 |
| CO2 | Understand about the various process in garment sector | | | | | | | | K2 |
| CO3 | Apply the domain knowledge to give right merchandising solution in various  activities of apparel sector | | | | | | | | K3 |
| CO4 | Understand the export procedures required for apparel business | | | | | | | | K4 |
| CO5 | Apply the EXIM knowledge for maintain proper trade documentation policies | | | | | | | | K5 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Unit:1** | | **Merchandising Concepts** | | | | **12 hours** | | | |
| Merchandising: Introduction, Meaning- Apparel Merchandising – Concepts of “Six Rights – Organisation structure of an apparel industry – Classification of Exporters - Rating or Grading of export houses – Classification of buyers – Export merchandising and retail merchandising  – Company profile and its contents. 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. | | | | | | | | | |
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| **Unit:2** | | **Process Flow of Garment Sector** | | | | **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. | | | | | | | | | |
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| **Unit:3** | | **Inspection and Approval Procedures** | | | | | **12 hours** | | |
| Inspection and its types – Testing – Check points before cutting - Pilot run or trial run and its importance – Approvals - Types of approvals – Shipping marks – Final inspection procedures  – Self, Second and Third party inspection - Effective expedition procedures. | | | | | | | | | |
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| **Unit:4** | | **Export Documents** | | | | | **12 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 – Buyers code of conducts. | | | | | | | | | |



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| **Unit:5** | | **Export Procedures** | **12 hours** |
| Export Procedures - Import/Export Documentation – FOB, C&F, CIF-–Shipping mark– Certificate of Origin- - Letter of Credit - Bill of Lading – Export License- Packing list – Commercial Invoice. Pre-shipment & post-shipment finance, insurance, payment instruments,  foreign exchange regulations, common errors in export documentation. | | | |
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|  | | **Total Lecture hours** | **60 hours** |
| **Text Book(s)** | | | |
| 1 | Apparel Merchandising-An integrated Approach, M. Krishnakumar, Abishek  Publications, 2010. | | |
| 2 | Apparel Merchandising, A. Jeremy, David L.Wilson, & Roseau, Fairchild Publications,  2014. | | |
| 3 | Export Import Handbook, Ajay Srivastava, Business Data info Publishing Co. Pvt. Ltd,  2015. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Apparel Merchandising, Robin Mathew, Book Enclave Publishers, 2008. | | |
| 2 | Inside the Fashion Business, Kitty G. Dickerson, Pearson Publications, 2002. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://garmentsmerchandising.com/> | | | |
| <https://www.fibre2fashion.com/industry-article/5743/merchandising-in-an-apparel-industry> | | | |
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| Course Designed By : Dr. M.Krishnakumar | | | |

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



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| **Course code** | | | **43B** | **APPAREL TESTING & QUALITY CONTROL** | **L** | **T** | | | **P** | **C** |
| **Core** | | | | **Paper IX** | **-** | **4** | | | **-** | **4** |
| **Pre-requisite** | | | | **Basic knowledge of textile fiber,**  **yarn , fabric and their properties** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the raw materials and garment testing methods. 2. Help the students to understand the working principles of various testing equipments. 3. Enhance the students knowledge in inspection procedures and quality control techniques. | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | | Understand about the various raw materials used in apparel and their testing  procedure | | | | | | | | K2 |
| CO2 | | Understand the working principles of various testing equipments | | | | | | | | K2 |
| CO3 | | Understand about various types of inspection procedures | | | | | | | | K2 |
| CO4 | | Analyze the various structural properties of fabrics and garments | | | | | | | | K4 |
| CO5 | | Analyze about the quality control techniques | | | | | | | | K4 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
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| **Unit:1** | | | **Yarn And Fabric Quality Evaluation** | | | | | **15 hours** | | |
| Yarn testing - linear density, twist and tensile strength. Fabric testing - tensile, tear & bursting  strength, abrasion resistance, pilling, drapability, stiffness and crease recovery testing. Yarn and fabric faults – causes and remedies. | | | | | | | | | | |
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| **Unit:2** | | | **Apparel Testing** | | | | | **15 hours** | | |
| Seam strength testing, dimensional stability, spirality, snap/button pull strength testing and  zipper testing, evaluation of interlining quality. Wash care labelling | | | | | | | | | | |
|  | | | | | | | | | | |
| **Unit:3** | | | **Raw material And In-Process Inspection** | | | | **15 hours** | | | |
| Inspection – importance, functions. Fabric inspection systems- 4 point system &10 point system. Quality parameters and their control in pattern making, cutting and sewing. Packing  quality, Quality control of trims and accessories, instrumental shade sorting. | | | | | | | | | | |
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| **Unit:4** | | | **Final Inspection** | | | | **15 hours** | | | |
| Acceptable Quality Level (AQL) standards- sampling plans, levels, Garment defects, final inspection procedure, tolerances and quality specifications for finished garment – shirt, pant,  T-shit and women’s skirt . | | | | | | | | | | |
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| **Unit:5** | | | **Quality Control** | | | **15 hours** | | | | |
| Total quality management, statistical process control, seven tools - cause and effect diagrams, check sheet, control chart, flow chart, histogram, Pareto chart and scatter diagram. ISO-9001  implementation in apparel industry. | | | | | | | | | | |
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|  | | | **Total Lecture hours** | | | **75 hours** | | | | |
| **Text Book(s)** | | | | | | | | | | |
| 1 | Physical Testing of Textiles, B.P.Saville, Wood head Publishing Ltd, 1999. | | | | | | | | | |



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| 2 | Managing Quality in the Apparel Industry, Pradip V Mehta, New age international  publishers, 1998. |
| 3 | Quality Assurance for Textiles and Apparel, Sara J. Kadolph, Fairchild publications,  2007. |
|  | |
| **Reference Books** | |
| 1 | Testing and Quality Management, V.K.Kothari, IAFL Publications, 1999 |
| 2 | Principles of Textile Testing, J.E.Booth, CBS Publishers & Distributors Pvt Ltd, 2018. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://nptel.ac.in/courses/116/102/116102029/> | |
| <https://nptel.ac.in/courses/116/102/116102049/> | |
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| Course Designed By : Dr.K.J. Sivagnanam | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | S | S | S | S |
| **CO2** | S | S | S | S | S | S | S | S |
| **CO3** | M | M | M | M | S | S | S | S |
| **CO4** | S | M | M | M | M | S | S | S |
| CO5 | S | M | M | M | M | S | S | S |



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| **Course code** | | **43C** | **APPAREL COSTING TECHNIQUES** | **L** | **T** | | | **P** | | **C** |
| **Core** | | | **Paper X** | **-** | **4** | | | **-** | | **4** |
| **Pre-requisite** | | | **Basic mathematical skill and**  **knowledge about raw material cost** | **Syllabus Version** | | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the elements of costing. 2. Help the students to understand the budgeting for apparel sectors and cost estimation of various process. 3. Enhance the students knowledge in achieving manufacturing cost and pricing techniques . | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | Understand about the elements and principles of costing | | | | | | | | K2 | |
| CO2 | Understand about the budgeting process of an apparel sector | | | | | | | | K2 | |
| CO3 | Apply the domain knowledge to estimate the various process cost | | | | | | | | K3 | |
| CO4 | Analyze the various process cost to determine the manufacturing cost | | | | | | | | K4 | |
| CO5 | Apply the domain knowledge to estimate the price for retail product | | | | | | | | K3 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
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| **Unit:1** | | **Costing Principles for apparel sector** | | | | | **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 labor - overheads - - prime cost - work cost - cost of production - total cost. INCO terms & its relationship with costing | | | | | | | | | | |
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| **Unit:2** | | **Budgeting for apparel sector** | | | | | **12 hours** | | | |
| Budgeting: The budgeting process: Budgeting principles for the apparel industry- Fixed vs Variable budget - Master budget-laminations of budgets- any justification effort -Planned Vs  Actual Cost. | | | | | | | | | | |
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| **Unit:3** | | **Cost estimation for various process** | | | | **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. | | | | | | | | | | |
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| **Unit:4** | | **Manufacturing 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. | | | | | | | | | | |
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| **Unit:5** | | **Pricing for 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** | | | | |



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| **Text Book(s)** | |
| 1 | Apparel Costing - A functional Approach, M.Krishnakumar, Abishek Publications,  2011. |
| 2 | Cost Accounting, R.S.N. Pillai & V. Bagavathi S, Chand and Company Ltd, 2008. |
| 3 | Cost Accounting, S.P.Jain & KL.Narang, Kalyani Publishers, 2014. |
|  | |
| **Reference Books** | |
| 1 | Apparel Costing, Andrea Kennedy & Andrea Reyes, Abishek Publications, 2020. |
| 2 | Costing for the Fashion Industry, [Michael Jeffrey,](https://www.bloomsbury.com/uk/author/michael-jeffrey) Nathalie Evans**,** Berg Publishers, 2011. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://www.onlineclothingstudy.com/2019/05/garment-costing-and-pricing-strategies.html> | |
| <https://www.textileschool.com/181/garment-costing/> | |
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| Course Designed By : Dr.M.Krishnakumar | |

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



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| **Course code** | | | **43P** | **GARMENT CONSTRUCTION KNITS** | **L** | **T** | | **P** | **C** |
| **Core** | | | | **Practical IV** | **-** | **-** | | **4** | **4** |
| **Pre-requisite** | | | | **Pattern making, Cutting and**  **Sewing process sequence** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of sewing. 2. Understand and practice to stitch various garment styles for kids. 3. Understand and practice to stitch various garment styles for adults. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| 1 | | Understand various stitches ,seam formation and component parts for knitwear | | | | | | | K2 |
| 2 | | Apply the domain Knowledge during the development of knitwear samples | | | | | | | K3 |
| 3 | | Create various knitted garment sample for kids wear | | | | | | | K6 |
| 4 | | Create the various knitted garment samples for Men and Women wears | | | | | | | K6 |
| 5 | | Evaluate the knitted sample for its fit and quality of construction | | | | | | | K5 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
|  | | | | | | | | | |
| **Part A** | | | **Construct the Following Kids Wear** | | | | | **15 hours** | |
| 1. Knitted frock 2. Kids bloomer 3. Overall with full sleeve | | | | | | | | | |
|  | | | | | | | | | |
| **Part B** | | | **Construct the Following Women’s Wear** | | | | | **30 hours** | |
| 1. High neck T shirt with full sleeve 2. Kimono sleeve T shirt 3. Legging 4. Night pajama set | | | | | | | | | |
|  | | | | | | | | | |
| **Part C** | | | **Construct the following Men’s Wear** | | | | | **30 hours** | |
| 1. Basic T shirt 2. Raglan T shirt with full sleeve 3. Polo T shirt with short sleeve 4. Hooded T shirt with front pocket 5. Bermuda with side pocket 6. Briefs 7. Track pant | | | | | | | | | |
|  | | | **Total Lecture hours** | | | | **75 -- hours** | | |
| **Text Book(s)** | | | | | | | | | |
| 1 | Design and Pattern Making for Stretch Fabrics, Richardson, Fairchild book, 2008. | | | | | | | | |
| 2 | Singer Sewing with Knits, Singer, Kalyani Publication, 1992. | | | | | | | | |
| 3 | The Stretch and Sew Guide to Sewing on Knits , Ann Person, Pearson Publication, 2000. | | | | | | | | |
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| **Reference Books** | | | | | | | | | |
| 1 | Clothing Construction, Clara M Brown, Read Books Publishers, 2011. | | | | | | | | |



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| 2 | Garment Construction: A complete course on making clothing for fit and fashion, Peg  couch, Fox chapel Publishing, 2015. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://youtu.be/4_FRV8flGi0> | |
| <https://www.sciencedirect.com/topics/engineering/garment-construction> | |
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| Course Designed By :B.Jeyanthy | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | S | S | S | S |
| **CO2** | S | S | S | S | S | S | S | S |
| **CO3** | M | S | S | S | L | S | S | S |
| **CO4** | M | S | S | S | L | S | S | S |
| **CO5** | M | S | S | S | L | S | S | S |



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| **Course code** | | | **4AP** | **APPAREL TESTING & QUALITY CONTROL** | **L** | **T** | | **P** | **C** |
| **Allied** | | | | **Practical IV** | **-** | **-** | | **4** | **4** |
| **Pre-requisite** | | | | **Knowledge about quality**  **parameters of textile fiber, yarn and fabric** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of textile testing . 2. Understand and practice the various testing procedures from fiber to garments. 3. Understand and practice to handle various textile testing equipments. | | | | | | | | | |
|  | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | | Understand to handle the different textile testing equipments and  maintenances | | | | | | | K2 |
| CO2 | | Understand the domain Knowledge to operate the textile testing equipments | | | | | | | K3 |
| CO3 | | Evaluate the quality of fiber and yarn and record the findings | | | | | | | K5 |
| CO4 | | Evaluate the quality of fabric and record the findings | | | | | | | K5 |
| CO5 | | Evaluate the quality of garment and record the findings | | | | | | | K5 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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|  | | |  | | | | | **75 hours** | |
| 1. Determination of count of yarn using wrap reel & weighing scale. 2. Determination of lea strength & CSP using lea strength tester. 3. Determination of yarn count from fabric swatch using Beesley balance. 4. Determination of twist of single yarn using electronic twist tester. 5. Fabric Analysis for determining Weight, CPI, WPI, SL, CL & Yarn Count. 6. Identification of Fiber using microscope and by chemical test. 7. Analysis of Blend composition of given fabrics. 8. Determination of thickness of fabric using fabric thickness gauge. 9. Determination of CRA of fabric using crease recover tester. 10. Determination of Fabric Pilling Using ICI Pill Box 11. Determination of Fabric Bursting Strength. 12. Determination of color fastness of given sample to washing by using launderometer. 13. Determination of color fastness of given sample to rubbing by using crock meter 14. Determination of color fastness of given sample to perspiration by using perspirometer 15. Determination of dimensional stability % of a given fabric / garment to washing. | | | | | | | | | |
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|  | | | **Total Lecture hours** | | | | **75 - hours** | | |
| **Text Book(s)** | | | | | | | | | |
| 1 | General Principles of Testing, Bureau of Indian Standards, New look Publications, 2018. | | | | | | | | |
| 2 | AATCC Textile Testing Materials Educational Resources , AATCC Publications,  Atlanta, 2019. | | | | | | | | |
| 3 | Principles of Textile Testing, J.E.Booth, CBS Publishers & Distributors Pvt Ltd, 2018. | | | | | | | | |
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| **Reference Books** | |
| 1 | Testing and Quality Management, V.K,Kothari, IAFL Publications, 1999 |
| 2 | Textiles-Yarns, Fabrics, and General Test Methods (ANNUAL BOOK OF A S T M  STANDARDS VOLUME 0701), ASTM Intl, 1999. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://nptel.ac.in/courses/116/102/116102049/> | |
| <https://nptel.ac.in/courses/116/102/116102029/> | |
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| Course Designed By : T.Sathishkumar | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | S | S | S | S |
| **CO2** | S | S | S | S | S | S | S | S |
| **CO3** | M | S | S | S | L | S | S | S |
| **CO4** | M | S | S | S | L | S | S | S |
| CO5 | M | S | S | S | L | S | S | S |



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| **Course code** | | | **4ZP** | **COMPUTER AIDED PATTERN DESIGNING - PRACTICAL** | **L** | **T** | | **P** | **C** |
| **Skill Based Subject** | | | | **Skill Based Subject II** | **-** | **-** | | **3** | **3** |
| **Pre-requisite** | | | | **Basic knowledge to operate computer tools and terms related to**  **garment patterns** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the basic concept about software . 2. Understand and practice to use various tools and techniques for pattern development. 3. Understand and practice to develop patterns for various garment styles (Kids, Men & Women) | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | | Understand about the tools and techniques of software | | | | | | | K2 |
| CO2 | | Apply the domain Knowledge and develop pattern on screen | | | | | | | K3 |
| CO3 | | Analyze the fit of the pattern on computer screen | | | | | | | K3 |
| CO4 | | Create the graded patterns for different size scale | | | | | | | K6 |
| CO5 | | Create the marker plan and find out the efficiency | | | | | | | K6 |
| **K1** - Remember; **K2** – Understand ; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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|  | | | | | | | | **75 hours** | |
| **CAD software is used to practice the following on the styles mentioned,**   * Create Pattern on computer screen, adding details to patterns. * Saving, extracting & editing patterns from stock library of Patterns. * Grading patterns on different size scale. * Making Marker plan for cutting fabrics. * Estimating lay length and calculating marker efficiency. * Fit analysis of the given pattern.   **Styles**   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. Brief 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 | Computer Aided Pattern Design Product Development , Alison Beazley, Terry Bond,  Wiley-Blackwell, 2003. | | | | | | | | |



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| 2 | Pattern Cutting for Clothing using CAD, M.Stott, Woodhead Publishing, 2012. |
| 3 | A Text Book Of Computer Aided Apparel Fashion Designing & Production Pattern  Making, Meenu Srivastava, Himanshu Publications,2011. |
|  | |
| **Reference Books** | |
| 1 | Automation in Garment Manufacturing, [Rajkishore Nayak](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Rajkishore%2BNayak&search-alias=stripbooks), Woodhead Publishing, 2017. |
| 2 | Computerized Patternmaking for Apparel Production, Laura Nugent, Fairchild Books,  2016 |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://youtu.be/n-tWecPMIQc> | |
| <https://youtu.be/YKbwio4ocIE> | |
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| Course Designed By : P.Murugan | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | S | S | S | S |
| **CO2** | S | S | S | S | S | S | S | S |
| **CO3** | M | S | S | S | M | S | S | S |
| **CO4** | M | S | S | S | S | S | S | S |
| CO5 | S | S | S | S | S | S | S | S |



Fifth Semester



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| **Course code** | | **53A** | **APPAREL INDUSTRIAL ENGINEERING I** | **L** | **T** | **P** | **C** |
| **Core** | | | **Paper XI** | **-** | **3** | **-** | **3** |
| **Pre-requisite** | | | **Knowledge about various process and techniques adopted in**  **garment production** | **Syllabus Version** | | **2020-2021** | |
| **Course Objectives:** | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about apparel production control and system. 2. Help the students to understand the apparel production planning and scheduling. 3. Enhance the students’ knowledge in material management for an apparel sector. | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | |
| CO1 | Understand the pre production functions and various production systems | | | | | | K2 |
| CO2 | Understand about the apparel production planning and scheduling process | | | | | | K2 |
| CO3 | Understand the knowledge of materials management process required for  apparel sector | | | | | | K2 |
| CO4 | Apply the breakdown analysis to find out right production system | | | | | | K3 |
| CO5 | Analyze the line balancing to determine the resource for a factory such as  material and man power | | | | | | K4 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | |
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| **Unit:1** | | **Production Control** | | | **15 hours** | | |
| Objective, relationship of production control to the functional areas of a manufacturing organization. Pre production functions – product acceptance, steps from prototype to production model, order requirements. Cut production analysis: Cut order planning – types of spreads, spreading methods, marker utilization, economic cut quantities. Control forms in  cutting department. | | | | | | | |
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| **Unit:2** | | **Production Systems** | | | **18 hours** | | |
| Production system – whole garment, department, progressive bundle, unit production and modular. Guidelines for choosing suitable production system. Garment breakdown analysis with machine & attachment details - Flow process grid construction, flow process grids for  production control. Control forms in production department. | | | | | | | |
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| **Unit:3** | | **Production Planning And Plant Loading** | | | **15 hours** | | |
| Production Planning - production concepts, production capacity, managing plant capacity – routing, loading; Plant loading: Line balancing techniques. Determination of machinery  requirements for a new factory, calculation of labour requirements, planning for multi style production – preparation of planning board. | | | | | | | |
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| **Unit:4** | | **Production Scheduling** | | | **12 hours** | | |
| Introduction. Principles of scheduling, scheduling charts, GANTT chart, backlog graph, | | | | | | | |



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| scheduling control techniques. Network representations - CPM and PERT charts. | | | | |
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| **Unit:5** | | **Materials Management** | | **15 hours** |
| Manufacturing Resources Planning (MRP), just in time production system (JIT), Optimised production technology (OPT), Economics order quantity (EOQ). Inventory control, various  Inventory modeling – Case studies. | | | | |
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| **Unit:6** | | **Contemporary Issues** | **2 hours** | |
| Expert lectures | | | | |
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|  | | **Total Lecture hours** | **77 hours** | |
| **Text Book(s)** | | | | |
| 1 | Industrial Engineering in Apparel Production, V. Ramesh Babu, Elsevier Science &  Technology, 2017 | | | |
| 2 | Apparel Manufacturing: Sewn Product Analysis, R.E. Glock & G.I.Kunz, Prentice Hall,  New York, 1995. | | | |
| 3 | Industrial Engineering Handbook, William K Hodson & Maynard’s, Mc Graw-Hill,  Inc., New York, 1992. | | | |
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| **Reference Books** | | | | |
| 1 | Materials Management in Clothing Production, David J Tyler, Prentice Hall, New  Jersey, 1991. | | | |
| 2 | Fashion design and Product development, Harold Carr, John Wiley and Sons Inc., New  York, 1991. | | | |
|  | | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | | |
| <https://youtu.be/tXNwpcFU5HQ> | | | | |
| <https://youtu.be/_ZqYZXMp-eY> | | | | |
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| Course Designed By : Arundhati Ghoshal | | | | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | M | M | S | S | S | S | S | S |
| **CO2** | M | S | S | S | S | S | L | S |
| **CO3** | S | S | S | S | M | S | L | S |
| **CO4** | S | S | M | S | M | S | S | S |
| CO5 | S | S | M | S | S | S | S | S |



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| **Course code** | | **53B** | **TOTAL QUALITY**  **MANAGEMENT** | **L** | **T** | | | **P** | **C** |
| **Core** | | | **Paper XII** | **-** | **3** | | | **-** | **3** |
| **Pre-requisite** | | | **Knowledge about quality terms** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the principles of TQM, statistical quality Control which are vital for apparel sector. 2. Help the students to understand the sampling plans and its risk factor for quality control process. 3. Enhance the student’s knowledge in ISO standards & EMS. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand about the concepts of TQM, 5s philosophy and quality circles used  in an apparel sector | | | | | | | | K2 |
| CO2 | Understand the knowledge about SQC used in apparel inspection process | | | | | | | | K2 |
| CO3 | Apply the domain knowledge to find out sampling plan and its risk factor | | | | | | | | K3 |
| CO4 | Analyze about the various ISO standards essential for an apparel industry | | | | | | | | K4 |
| CO5 | Apply the Environmental Management System in an apparel sector | | | | | | | | K4 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Unit:1** | | **Principles of TQM** | | | | | **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. | | | | | | | | | |
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| **Unit:2** | | **Introduction to 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, Coefficient of Variation – Normal distribution – Binomial distribution – Poisson  distribution. | | | | | | | | | |
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| **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 – Producers risk and Consumers risk. | | | | | | | | | |
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| **Unit:4** | | **ISO Standards** | | | | **12 hours** | | | |
| ISO 9000 Standards: Meaning & Definition – ISO 9000 family of standards – Elements of ISO – Benefits– Study on ISO 9001:2008 Guidelines and Standard Clauses – Implementation Procedures and requirements for ISO 9001:2008 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. | | | | | | | | | |



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| **Unit:5** | | **Environmental Management System (EMS)** | **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. | | | |
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|  | | **Total Lecture hours** | **60 hours** |
| **Text Book(s)** | | | |
| 1 | Total Quality Management, S.Bhaskar, Anuradha Publications, 2011. | | |
| 2 | Total Quality Management, K.Shridhara Bhat, Himalaya Publishing Corporation, 2010. | | |
| 3 | Handbook of Total Quality Management, Armstrong, Jaico Publications, 2001. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Statistical Methods, Dr. S.P.Gupta, Sultan Chand & Sons, 2011. | | |
| 2 | Quality Control Handbook, J.M,Juran, McGraw Hill Inc,1988. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://nptel.ac.in/courses/110/104/110104080/> | | | |
| <https://onlinecourses.swayam2.ac.in/imb19_mg22/preview> | | | |
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| Course Designed By : Dr.K.J.Sivagnanam | | | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | M | M | S | S | S | S | S | S |
| **CO2** | M | L | S | S | S | S | S | S |
| **CO3** | L | L | S | S | S | S | S | S |
| **CO4** | L | L | S | S | S | S | S | S |
| CO5 | L | L | S | S | S | S | S | S |



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| **Course code** | | **53C** | **TECHNICAL TEXTILE & FUNCTIONAL APPAREL** | **L** | **T** | | **P** | **C** |
| **Core** | | | **Paper XIII** | **-** | **3** | | **-** | **3** |
| **Pre-requisite** | | | **Knowledge about latest innovations**  **in textile and apparel sectors** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the technical fiber and yarn . 2. Help the students to understand the various application of technical textiles products. 3. Enhance the student’s knowledge in functional apparel design, production and utilization . | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Understand the knowledge about technical textile and their application | | | | | | | K2 |
| CO2 | Understand about the technical fiber, yarn and fabric manufacturing process | | | | | | | K2 |
| CO3 | Apply the domain knowledge to design the functional garments | | | | | | | K3 |
| CO4 | Analyze the various production parameters needed for making functional  garments | | | | | | | K4 |
| CO5 | Create the new concepts to develop performance oriented products | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
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| **Unit:1** | | **Introduction to technical textiles** | | | | | **12 hours** | |
| Introduction to Technical textiles, definition and scope of technical textiles, developments in  fibres-natural fibres, polyamide, polyester, viscose rayon, polyolefin, high performance fibres and glass and ceramics, Application of technical textiles. | | | | | | | | |
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| **Unit:2** | | **Functional apparels& medical textile** | | | | | **12 hours** | |
| Functional apparels: Design & engineering of functional clothing, requirements, smart characteristics: structural, aesthetic, functional, comfort and fit for clothing.  Medical textile: Materials used and classification. Requirements and application. Textiles for Healthcare and Hygiene products. | | | | | | | | |
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| **Unit:3** | | **Protective wear** | | | | | **12 hours** | |
| Selection of materials, requirements and functions of flame resistant, chemical, mechanical,  electrical and radiation protective clothing. | | | | | | | | |
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| **Unit:4** | | **Sports wear** | | | | | **12 hours** | |
| Sportswear requirements - functional fibers, yarns and fabrics suitable for sportswear- Sweat management for sports application. Footwear Clothing: Fabric requirements, finishing  adaptability. | | | | | | | | |
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| **Unit:5** | | **Smart and intelligent textiles** | | | | **12 hours** | | |
| Smart fibres: Nano fibres, Photo adaptive fibres, Chameleon fibres, Conductive fibres – properties and applications in textiles and apparels. Phase change materials: properties and  applications. Shape memory polymers and properties. Stimuli sensitive intelligent textiles. | | | | | | | | |
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| **Unit:6** | | **Contemporary Issues** | | | | **2 hours** | | |
| Expert online seminars – webinars | | | | | | | | |



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|  | | **Total Lecture hours** | **62 hours** |
| **Text Book(s)** | | | |
| 1 | Handbook of Technical Textiles, A. R Horrock, S.C Anand, Wood head Publishing,  2000. | | |
| 2 | Handbook of Industrial Textiles, S.Adanur, Technomic Publication, 2001. | | |
| 3 | Textiles for Sportswear, Roshan Shishoo, Woodhead Publishing, 2015. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Design and manufacture of Textile Composites, M.C Kanna, Hearle O Hear, Textile  process, Textile Institute, Manchester, 2004. | | |
| 2 | Handbook of Medical Textiles, [V Bartels](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=V%2BBartels&search-alias=stripbooks) , Woodhead Publishing, 2011. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://nptel.ac.in/courses/116/102/116102057/> | | | |
| [https://www.classcentral.com/course/swayam-testing-of-functional-and-technical-textiles-](https://www.classcentral.com/course/swayam-testing-of-functional-and-technical-textiles-13051) [13051](https://www.classcentral.com/course/swayam-testing-of-functional-and-technical-textiles-13051) | | | |
| Course Designed By : B.Jeyanthy | | | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | M | S | S | S |
| **CO2** | S | S | S | M | S | S | S | S |
| **CO3** | S | S | S | M | M | S | S | S |
| **CO4** | M | M | M | S | S | S | S | S |
| CO5 | M | M | M | S | S | S | S | S |



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| **Course code** | | **53P** | **COMPUTER AIDED FASHION ART** | **L** | **T** | | **P** | **C** |
| **Core** | | | **Practical V** | **-** | **-** | | **4** | **4** |
| **Pre-requisite** | | | **Knowledge about computer**  **operating tools and creative skill** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the various design software relevant fashion designing. 2. Understand and practice to develop various garment, accessory, logo and motif designs. 3. Understand and practice to develop garment technical pack for apparel production sectors. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Understand and practice in various designing software and tools | | | | | | | K2 |
| CO2 | Apply the domain Knowledge and develop motif and logo designs for  garments and brands | | | | | | | K3 |
| CO3 | Create garment flat sketches for Kids, Women’s and Men’s wears using  relevant software | | | | | | | K6 |
| CO4 | Create the Accessory designs using relevant software | | | | | | | K6 |
| CO5 | Create the Garment technical pack for production process using software | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
|  | | | | | | | | |
|  | | | | | | **90 hours** | | |
| 1. Introduction to software’s of Fashion CAD Laboratory. 2. Computer aided embroidery designs. 3. Logo designing. 4. Digital designing of different styles of necklines, sleeves, skirts and collars. 5. Designing different styles of apparel for men. 6. Designing different styles of apparel for women. 7. Designing different styles of apparel for children. 8. Designing different types of accessories. 9. Develop a Tech Pack design for basic garment styles. | | | | | | | | |
|  | | | | | | | | |
|  | | **Total Lecture hours** | | | | **90 hours** | | |
| **Text Book(s)** | | | | | | | | |
| 1 | CAD for Fashion Design and Merchandising, Stacy Stewart Smith, Bloomsbury  Publishing India Private Limited, 2013. | | | | | | | |
| 2 | Adobe Photoshop for Fashion Design, Susan Lazear, Pearson Publications, 2007. | | | | | | | |
| 3 | Fashion and Textile Design with Photoshop and Illustrator, Robert Hume,  Bloomsbury Visual Arts, 2019. | | | | | | | |
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| **Reference Books** | | | | | | | | |
| 1 | Adobe Illustrator Classroom in a Book, Brian Wood, Adobe Press, 2019. | | | | | | | |
| 2 | Adobe Photoshop Classroom in a Book, Andrew Faulkner, Adobe Press,2019. | | | | | | | |
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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | | | | | | |



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| <https://youtu.be/Py0dlOAUfp4> |
| <https://youtu.be/1_EN9sh9MnA> |
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| Course Designed By: B.Jeyanthy |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | M | M | S | S | S | S | S | S |
| **CO2** | M | M | S | S | S | S | S | S |
| **CO3** | M | M | S | S | S | S | S | S |
| **CO4** | M | M | S | S | S | S | S | S |
| CO5 | M | M | S | S | S | S | S | S |



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| **Course code** | | | **5ZP** | **DESIGN PROCESS &PRODUCT DEVELOPMENT I - PRACTICAL** | **L** | **T** | **P** | **C** |
| **Skill Based Subject** | | | | **Skill Based Subject III** | **-** | **-** | **3** | **3** |
| **Pre-requisite** | | | | **Knowledge about designing, pattern**  **making and construction** | **Syllabus Version** | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the develop portfolio and garment tech pack. 2. Practice the pattern development and garment construction for selected garments styles. 3. Determine the production cost and MRP for single garment. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | | Understand about the design process concepts and methods | | | | | | K2 |
| CO2 | | Apply the domain Knowledge and develop portfolio | | | | | | K3 |
| CO3 | | Create the garment sample for Kids wear | | | | | | K6 |
| CO4 | | Create the garment for Women’s wear | | | | | | K6 |
| CO5 | | Create the garment for Men’s wear | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
|  | | | | | | | | |
|  | | |  | | | **75 hours** | | |
| 1. Each Student should prepare 3 ready to wear garments (kids wear/ men’s wear/ women’s wear). 2. Designs may be inspired by national or international designer collection based on current trends. 3. Students should prepare 2 kinds of file such as design process (Portfolio) & Garment Tech pack. 4. Design file which comprises inspiration details, customer survey report, design, fabric, silhouette, color forecast details. 5. Garment tech pack File comprises all flat sketches , Patterns, garment flow process details accessory and trims specification details and costing chart for single piece. | | | | | | | | |
|  | | | | | | | | |
|  | | | **Total Lecture hours** | | | **75 -- hours** | | |
| **Text Book(s)** | | | | | | | | |
| 1 | Fashion Design and Product development, Harold Carr, John Pomeroy, Blackwell  Publication, 1992. | | | | | | | |
| 2 | Portfolio design + Presentation, Anna Kiper, Batasford publications, 2014. | | | | | | | |
| 3 | Portfolio presentation for fashion designers, Linda Tain, Fairchild Publishers, 2010. | | | | | | | |
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| **Reference Books** | | | | | | | | |
| 1 | Portfolio Management, S.Kevin, Prentice hall of India, PHI publications, 2006. | | | | | | | |
| 2 | Design with Color: The design guide to over 1000 color combination, Alles, Jeanne,  Chronicle Books, 1992. | | | | | | | |
|  | | | | | | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | | | | | | |
| <https://youtu.be/HEsmu45SKv4> | | | | | | | | |
| <https://youtu.be/buERDxlBn8w> | | | | | | | | |
| Course Designed By : B.Jeyanthy | | | | | | | | |



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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | S | S | S | S |
| **CO2** | M | S | S | S | S | L | S | S |
| **CO3** | M | S | S | M | S | M | S | M |
| **CO4** | S | S | S | M | S | L | S | M |
| CO5 | S | S | S | M | S | S | S | M |



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| **Course Code** | | **57V** | **INTERNSHIP TRAINING** | **L** | **T** | **P** | **C** |
| **Project** | | | **Viva Voce** | **-** | **-** | **-** | **2** |
| **Pre-requisite** | | **Basic knowledge in apparel production processes** | | **Syllabus**  **Version** | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | |
| The main objectives of this course are to:   1. Document the complete details about the processes in apparel production & related field 2. Analyze and interpret the information gathered 3. Prepare a report and make a presentation | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | |
| CO1 | Break-down the process into various activities | | | | | K3 | |
| CO2 | Document the details of the activities | | | | | K3 | |
| CO3 | Prepare the requirements for each process and cost details | | | | | K4 | |
| CO4 | Develop a suitable method | | | | | K6 | |
| CO5 | Prepare the reports and presentations in the specified format. | | | | | K3 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create | | | | | | | |
|  | | | | | | | |
| **INTERNSHIP GUIDELINES** | | | | | | | |
| The students have to undergo full day training in Spinning / weaving / Knitting / Dyeing / Printing  / Finishing/ Washing / Sewing and relate areas of apparel production. Visit to industry should be such that it covers the most of the segments of apparel industry and the time spent in each segment should also be uniform.  Students can undergo individually or a batch of maximum 4 nos. only will be allowed for training.  Training can be planned for a stretch 3 weeks except Saturday and Sunday during the fourth semester vacation.  The faculty in charge will give all the formats and guidelines for preparing report.  The students have to record all the required information and observations during training and submit a rough copy within 5 days after completion of training.  Students have to submit the attendance copy and performance card to the faculty in charge, obtained from the respective authority of company with seal and signature. Standard format for the above documents will be given by the department. The report format and request letter from the Department should be collected by the students from the Department before the start of the training. Student must present for review meeting to assess the progress conducted during training period.  The students will be assessed based on their Training report (30 – 50 pages), Viva-Voce examination and the PPT presentation. | | | | | | | |



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| **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 | The Successful Internship. United States, King, Mary A., and Sweitzer, H. Frederick.,  Cengage Learning 2013. |
|  | |
| **Related Online Contents** | |
| 1 | <https://clothingindustry.blogspot.com/2018/09/sampling-process-apparel-industry.html> |
| 2 | <http://textilemerchandising.com/garments-sampling-process/> |
| Course Designed By: Dr. P.P.Gopalakrishnan | |

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| **Mapping with Programme Outcomes** | | | | | | | |
| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** |
| **CO1** | S | S | S | S | S | S | S |
| **CO2** | S | S | S | S | S | S | S |
| **CO3** | S | S | S | S | S | S | S |
| **CO4** | S | S | S | S | S | S | S |
| **CO5** | S | S | S | S | S | S | S |



Sixth Semester



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| **Course code** | | **63A** | **APPAREL INDUSTRIAL**  **ENGINEERING –II** | **L** | **T** | **P** | **C** |
| **Core** | | | **Paper XIV** | **-** | **3** | **-** | **3** |
| **Pre-requisite** | | | **Knowledge about apparel**  **production management** | **Syllabus Version** | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about industrial engineering concepts applicable to apparel sector. 2. Help the students to understand the method study and work measurements of apparel industry. 3. Enhance the student’s knowledge in ergonomics factors applicable to apparel sector. | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | |
| CO1 | Understand about the industrial engineering concepts for apparel industry | | | | | | K2 |
| CO2 | Understand about the method study & work measurements | | | | | | K2 |
| CO3 | Apply the domain knowledge to improve productivity | | | | | | K3 |
| CO4 | Analyze about the various ergonomics structures applicable to apparel sector | | | | | | K4 |
| CO5 | Analyze about the personnel services and sources for apparel sectors | | | | | | K4 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | |
|  | | | | | | | |
| **Unit:1** | | **Introduction to IE** | | | | **20 hours** | |
| Industrial engineering**:** Scope, concepts. Roles and functions of industrial engineer in apparel industry.  Plant layout & material handling**:** Layout planning and development, types of layout, characteristics of good work station layout, layout calculations**,** layout for apparel industry. Material handling: Objectives, classifications of material handling equipments, specialized material handling equipments related to apparel industry. | | | | | | | |
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| **Unit:2** | | **Productivity** | | | | **15 hours** | |
| Measurement methods, productivity calculations in apparel manufacture, basic work content and added work content, reduction of work content and ineffective time. Causes for low productivity in apparel industry, suggestions for productivity improvement. Manufacturing productivity solutions. Work study- techniques, procedure. Work study and its influence on  productivity. | | | | | | | |
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| **Unit:3** | | **Method Study** | | | **15 hours** | | |
| Procedure, process charts and symbols. Charts indicating process sequence: outline process chart, flow process charts; charts using time scale-multiple activity chart. Diagrams indicating movement – flow diagram, string diagram, cycle graph, chrono cycle graph, travel chart.  Examples from apparel industry. | | | | | | | |
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| **Unit:4** | | **Motion and Work study** | | | **20 hours** | | |
| Motion study & operation improvement**:** Operation analysis, motion analysis, motion economy, two handed process chart, micro motion analysis - therbligs, SIMO chart. Evaluating motion study data, principles for improving operation methods in apparel manufacture – cutting, sewing, pressing and packing**.**  Work Measurement**:** Procedure, techniques - time study: equipments, forms, procedure, | | | | | | | |



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| rating, allowances and calculation of standard allowable minutes (SAM) for various operations in apparel manufacture - predetermined motion time standards (PMTS) - work  sampling - standard data: general sewing data (GSD). Applications. | | | |
|  | | | |
| **Unit:5** | | **Introduction to Ergonomics** | **20 hours** |
| Work environment and services**:** Lighting, ventilation, climatic condition – temperature control, humidity control. Noise control, safety. Services: production, plant, administrative, personnel and convenience related. Work environment and services in apparel manufacturing  firms**.** Ergonomics - application in apparel manufacture. | | | |
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| **Unit:6** | | **Contemporary Issues** | **2 hours** |
| Expert lectures | | | |
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|  | | **Total Lecture hours** | **92 hours** |
| **Text Book(s)** | | | |
| 1 | Managing Productivity of Apparel industry, Rajesh Bheda, CBI publishers and  Distributors, 2002. | | |
| 2 | Industrial engineering in apparel production, V. Ramesh Babu, Wood head publishing  India Pvt Ltd, 2011**.** | | |
| 3 | Apparel Manufacturing Hand Book, Analysis principles and practice, Jacob Solinger,  Boblin Media Publishers, 1991. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Motion and Time Study Design and Measurement of Work, Ralph M Barnes, John Wiley  & Sons Publications, 1992. | | |
| 2 | Introduction to Clothing Production Management, A.J Chuter, Blackwell Publishing,  2007. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://www.youtube.com/watch?time_continue=4&v=qXFUqCijkUs&feature=emb_logo> | | | |
| <https://youtu.be/NzhUZ6jyrtU> | | | |
| Course Designed By : Arundhati Ghoshal | | | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | M | M | S | S | S | S | S | S |
| **CO2** | M | S | S | S | S | S | S | S |
| **CO3** | S | S | S | S | S | S | S | S |
| **CO4** | S | S | S | S | S | S | S | S |
| CO5 | S | S | S | S | S | S | S | S |



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| **Course code** | | **63B** | **ERP** | **L** | **T** | | **P** | **C** |
| **Core** | | | **Paper XV** | **-** | **3** | | **-** | **3** |
| **Pre-requisite** | | | **Basic knowledge about apparel enterprises and application and role**  **of computer in apparel sector** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the enterprises and its types. 2. Help the students to understand the ERP software for apparel business. 3. Enhance the student’s knowledge in implement and utilize ERP in an apparel sector. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Understand about apparel enterprises and its types | | | | | | | K2 |
| CO2 | Understand about the implementation of ERP in apparel sector | | | | | | | K2 |
| CO3 | Apply the domain knowledge to carry out the ERP packages for various  department of apparel sector | | | | | | | K3 |
| CO4 | Analyze about the production planning, costing and merchandising software | | | | | | | K4 |
| CO5 | Apply the various communication methods using software with consumers | | | | | | | K3 |
| **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. | | | | | | | | |
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| **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. | | | | | | | | |
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| **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. | | | | | | | | |
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| **Unit:5** | | **Computer Applications in Apparel sectors** | | | | **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. | | | | | | | | |
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|  | | **Total Lecture hours** | **60 hours** |
| **Text Book(s)** | | | |
| 1 | ERP Demystified, Alexis Leon, Tata McGraw Hill, 2000. | | |
| 2 | Apparel Manufacturing- Sewn Product Analysis, E. Glock Ruth & I.Kunz Grace  Blackwell, Scientific Publications, 1996. | | |
| 3 | Enterprise Resource Planning – Concepts and Practice, Garg Vinod Kumar & N. K  Venkita krishnan, PHI Publications, 2003. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Concepts in Enterprise Resource Planning, Joseph A Brady, Ellen F. Monk, Bret  Wagner, Thompson Course Technology, 2001. | | |
| 2 | Enterprise Resource Planning, Alexis Leon, McGraw Hill Education, 2007. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://youtu.be/RUYm6HwMWyI> | | | |
| <https://youtu.be/UnbkuTOmX_g> | | | |
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| Course Designed By: D. Anita Rachel | | | |

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



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| **Course code** | | **63C** | **ENTREPRENEURSHIP AND SMALL BUSINESS DEVELOPMENT** | **L** | **T** | | **P** | **C** |
| **Core** | | | **Paper XVI** | **-** | **3** | | **-** | **3** |
| **Pre-requisite** | | | **Basic knowledge about various business**  **schemes and opportunities** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the enterprise launching formalities and product selection. 2. Help the students to understand the support institutions and management system for apparel sector. 3. Enhance the student’s knowledge in subsidies and incentive procedure to promote apparel export. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Understand about the concept of entrepreneurship | | | | | | | K2 |
| CO2 | Understand about the entrepreneurial opportunity and product identification | | | | | | | K2 |
| CO3 | Apply the domain knowledge to enterprise launching process | | | | | | | K3 |
| CO4 | Analyze about the various support Institutions and management of Small  Business | | | | | | | K4 |
| CO5 | Understand about taxation benefit to SSI role of entrepreneur in export  promotion and import substitution | | | | | | | K2 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
|  | | | | | | | | |
| **Unit:1** | | **Introduction to 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. | | | | | | | | |
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| **Unit:2** | | **Identification and Product Selection** | | | | **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. | | | | | | | | |
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| **Unit:3** | | **Enterprise Launching Formalities** | | | **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. | | | | | | | | |
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| **Unit:4** | | **Support Institutions and Management** | | | **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. | | | | | | | | |
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| **Unit:5** | | **Incentives and subsidies** | **12 hours** |
| Incentives and subsidies – Subsidized services – subsidy for market. Transport – seed capital  assistance – Taxation benefit to SSI role of entrepreneur in export promotion and import substitution. | | | |
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|  | | **Total Lecture hours** | **60 hours** |
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| **Text Book(s)** | | | |
| 1 | Small Scale Industries and Entrepreneurship, Desai, Vasant, Himalaya Publishing House,  2003. | | |
| 2 | Entrepreneurship Management, Kaulgud, Aruna, Vikas Publishing House, 2003. | | |
| 3 | Entrepreneurial Success: A Psychological Study, Chandra, Ravi, Sterling Publication Pvt.  Ltd., 2003. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Entrepreneurship Ideas in Action, Cynthia, L. Greene, Thomson Asia Pvt. Ltd, 2003. | | |
| 2 | Entrepreneurship Development: An Analytical Study, Balaraju, & Theduri, Akansha  Publishing House, 2004. | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://nptel.ac.in/courses/110/106/110106141/> | | | |
| <https://nptel.ac.in/courses/110/107/110107094/> | | | |
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| Course Designed By: Dr.M.Mangalagowri | | | |

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



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| **Course code** | | | **6ZV** | **PROJECT WORK AND VIVA VOCE** | **L** | **T** | **P** | **C** |
| **Skill Based Subject** | | | | **Skill Based Subject IV** | **-** | **-** | **3** | **3** |
| **Pre-requisite** | | | | **Through Knowledge about textile,**  **design and apparel manufacturing** | **Syllabus Version** | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to involve them into research activity. 2. Enhance the student’s to conceptualize new ideas to facilitate a process or service 3. Stimulate entrepreneurial skill of a student | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | | Remember the subject learn from the course of time | | | | | | K1 |
| CO2 | | Apply the research activity in a specific topic from fiber to garment | | | | | | K3 |
| CO3 | | Analyze the domain Knowledge and develop new concepts or ideas | | | | | | K4 |
| CO4 | | Evaluate the idea or concept by either qualitative or quantitative methods | | | | | | K5 |
| CO5 | | Create thesis for the new findings | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
|  | | | | | | | | |
| Students have to undertake project in the areas of fiber / yarn / Knitting / Weaving/ Processing  /Garment Manufacturing process / Activity involved in garment business. A Team consisting of Internal & External Experts will evaluate the Project Report. The Viva-Voce will be conducted. | | | | | | | | |
| **Total hours** | | | | | | | **75 hours** | |
|  | | | | | | | | |
| **Text Books** | | | | | | | | |
| 1 | Research Methodology Methods and techniques, C.R.Kothari & Gaurav Garg, New Age  International Publishers, 2019. | | | | | | | |
| 2 | Research Design: [Qualitative](http://www.phdassistance.com/services/phd-research-methodology/qualitative-methodology/), Quantitative and Mixed Method Approaches, John W.  Crewel, Sage Publication, 2018. | | | | | | | |
| 3 | The Essential guide to doing research, Zina O’Leary, Vistaar Publication, 2004. | | | | | | | |
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| **Reference Books** | | | | | | | | |
| 1 | Research Methods, [Ram Ahuja](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Ram%2BAhuja&search-alias=stripbooks) , Rawat Pubns, 2001 | | | | | | | |
| 2 | Introducing Research Methodology: A Beginner's Guide to Doing a Research Project,  Uwe Flick, Sage Publications India Private Limited, 2017 | | | | | | | |
|  | | | | | | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | | | | | | |
| <https://nptel.ac.in/courses/121/106/121106007/> | | | | | | | | |
| <https://onlinecourses.nptel.ac.in/noc19_hs59/preview> | | | | | | | | |
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| **Mapping with Programme Outcomes** | | | | | | | | |
| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | S | S | S | S | S | S | S |
| **CO2** | S | S | S | S | S | S | S | S |
| **CO3** | S | S | S | S | S | S | S | S |
| **CO4** | S | S | S | S | S | S | S | S |
| CO5 | S | S | S | S | S | S | S | S |



Elective Course



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| **Course code** | | **5EP** | **PATTERN MAKING AND GARMENT CONSTRUCTION OF**  **WOVEN - PRACTICAL** | **L** | **T** | | | **P** | **C** |
| **Elective** | | | **Paper 1** | **-** | **-** | | | **4** | **4** |
| **Pre-requisite** | | | **Knowledge about patternmaking and**  **sewing operation** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to practice Pattern developments for woven garments. 2. Understand and practice to construct woven garment Styles for Kids. 3. Understand and practice to construct woven garment Styles for adults. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Remember the pattern development procedures for woven | | | | | | | | K1 |
| CO2 | Understand the pattern manipulation for style line | | | | | | | | K2 |
| CO3 | Analyze the domain Knowledge and develop pattern on fabric | | | | | | | | K4 |
| CO4 | Create woven garments for kids wear | | | | | | | | K6 |
| CO5 | Create woven garments for adults wear | | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Part A** | | **Draft the pattern and Construct the following garments for Kids** | | | | | **25 hours** | | |
| 1. Yoke frock with gathers 2. Ball room gown 3. Shirt for boys 4. Pant for boys | | | | | | | | | |
|  | | | | | | | | | |
| **Part B** | | **Draft the pattern and construct the following garments for Women** | | | | | **40 hours** | | |
| 1. Basic bodice 2. Princess cut tops 3. Formal shirt 4. Formal pant 5. Dividing skirts 6. Circular skirt 7. Wrap round skirt | | | | | | | | | |
|  | | | | | | | | | |
| **Part C** | | **Draft pattern and construct the following**  **garments for Men’s wear** | | **25 hours** | | | | | |
| 1. Formal shirt 2. Casual shirt 3. Formal pant 4. Blazer | | | | | | | | | |
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|  | | **Total Lecture hours** | | | | **90 -- hours** | | | |



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| **Text Book(s)** | |
| 1 | Pattern Making for fashion design , Helen Armstrong, Pearson, 2013. |
| 2 | Pattern Design: Fundamentals: Construction and Pattern Making for Fashion Design,  Jennifer Lynne Matthews-Fairbanks, Createspace Independent Publishing Platform, 2018. |
| 3 | The stretch and sew guide , Ann Person,Pearson Publication,2000. |
|  | |
| **Reference Books** | |
| 1 | Clothing Construction, Clara M Brown, Read Books Publishers ,2011. |
| 2 | Garment Construction: A complete course on making clothing for fit and fashion, Peg  couch, Fox chapel Publishing,2015. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://youtu.be/4_FRV8flGi0> | |
| <https://www.sciencedirect.com/topics/engineering/garment-construction> | |
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| Course Designed By: B.Jeyanthy | |

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



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| **Course code** | | | **5EQ** | **DRAPING TECHNIQUES -**  **PRACTICAL** | **L** | **T** | **P** | **C** |
| **Elective** | | | | **Paper I** | **-** | **-** | **4** | **4** |
| **Pre-requisite** | | | | **Basic skill about pattern and fabric**  **terms also understand the tools** | **Syllabus Version** | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of Pattern making & Grading. 2. Understand and practice the pattern development for various Knitted Garment Styles for Kids. 3. Understand and practice the pattern development for various Knitted Garment Styles for adults. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | | Remember the pattern terms and making tools | | | | | | K1 |
| CO2 | | Understand the pattern and grading techniques | | | | | | K2 |
| CO3 | | Analyze the domain Knowledge and develop paper pattern | | | | | | K4 |
| CO4 | | Create patterns for the various garment styles for kids | | | | | | K6 |
| CO5 | | Create patterns for the various garment styles for Adults | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
|  | | | | | | | | |
| **Part A** | | | **Draft the pattern and grade the following garments for Kids** | | | | **90**  **hours** | |
| 1. Basic Bodice front & Back 2. Basic Skirt Front & Back 3. Basic Sleeve 4. Pant Front & Back 5. Neck lines : Sweet Heart, Scooped – Boat – V neck – Round neck – Square Neck – Halter- Cowl 6. Yokes: - Hip – Midriff – Shirt yoke 7. Collars-Mandarin- Peter pan- Turtle – Raffeled- Shawl- Frills 8. Skirt – Circular, Peg, Drindle, Pleated 9. Design each one garment for men, women, and kids wear and further develop pattern through this technique. | | | | | | | | |
|  | | | | | | | | |
|  | | | **Total Lecture hours** | | | **90 -- hours** | | |
| **Text Book(s)** | | | | | | | | |
| 1 | The Art of fashion Draping, Connie Amadan Crawford, Bloomsbury Publishing India  Private Limited,2012. | | | | | | | |
| 2 | Draping for Apparel Design, Hellen Joseph Armstrong, Bloomsbury Publishing India  Private Limited,2013. | | | | | | | |
| 3 | Draping for Fashion design, Hinbe Jaffe, Nurie Relis, Pearson Publications, 2011. | | | | | | | |
|  | | | | | | | | |
| **Reference Books** | | | | | | | | |
| 1 | Draping the Complete course , Karolyn Kiisel, Laurence King Publishing, 2013. | | | | | | | |



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| 2 | The Art of Draping, Nils-Christy, Esmod Editions, 2012. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://www.youtube.com/watch?v=_qJqziRZaG0> | |
| <https://youtu.be/h_UlHFIjDU4> | |
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| Course Designed By: Arundhati Ghoshal | |

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



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| **Course code** | | **5ER** | **SURFACE ORNAMENTATION -**  **PRACTICAL** | **L** | **T** | **P** | | **C** |
| **Elective** | | | **Paper I** | **-** | **-** | **4** | | **4** |
| **Pre-requisite** | | | **Basic knowledge about embroidery**  **tools, sequins, painting, printing .** | **Syllabus Version** | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Helps students to understand the fundamentals of printing of textiles. 2. Understand and practice the pattern development for various surface embellishments using smocking, quilting etc. 3. Understand and practice the various embroidery stitches to ornament the fabrics. | | | | | | | | |
|  | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Remember the embroidery, printing and various embellishments techniques | | | | | | K1 | |
| CO2 | Create the fabric sample using printing techniques | | | | | | K6 | |
| CO3 | Create different textile texture using craft work | | | | | | K6 | |
| CO4 | Create embellished garment using smocking, appliqué’, pleats and tucks | | | | | | K6 | |
| CO5 | Create various embroidery sample for garment embellishments | | | | | | K6 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
|  | | | | | | | | |
| **Part A** | | **Development of samples with various printing techniques** | | | **20 hours** | | | |
| 1. Block 2. Stencil 3. Screen 4. Tie and Dye 5. Batik 6. Fabric painting | | | | | | | | |
|  | | | | | | | | |
| **Part B** | | **Developing fabric texture using various craft techniques** | | | **10 hours** | | | |
| 1. Drawn thread 2. Counted thread 3. Crochet | | | | | | | | |
|  | | | | | | | | |
| **Part C** | | **Developing Garment with following Embellishments** | | **20 hours** | | | | |
| 1. Smocking 2. Applique 3. Patchwork 4. Quilting 5. Pleats and tucks | | | | | | | | |
|  | | | | | | | | |
| **Part D** | | **Developing Embroidery design on the fabric** | | **40 hours** | | | | |
| Basic stitches - Includes hand & machine to form different natural & geometric forms such as,  border stitches, outline stitches, filling stitches etc | | | | | | | | |
|  | | **Total Lecture hours** | | **90 -- hours** | | | | |



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| **Text Book(s)** | |
| 1 | Encyclopaedia of embroidery stitches including crewel , Marion Nichols, Dover  Publications, 1974. |
| 2 | Encyclopaedia of embroidery Techniques, Pauline Brown, Search Press Ltd,2001. |
| 3 | The Art of Manipulating Fabric, Colette Wolff, Interweave Publication,1996. |
|  | |
| **Reference Books** | |
| 1 | Traditional Textiles of India, Parul Bhatnagar, Suraj Publication, 2013. |
| 2 | Handcrafted Indian Textiles, Parul Bhatnagar, Abishek Publication, 2014. |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://youtu.be/IQD5WeYSH70> | |
| <https://youtu.be/wjCfskJeOlA> | |
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| Course Designed By: B.Jeyanthy | |

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



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| **Course code** | | | **6EP** | **DESIGN PROCESS & PRODUCT**  **DEVELOPMENT II - PRACTICAL** | **L** | **T** | | **P** | | **C** |
| **Elective** | | | | **Paper II** | **-** | **-** | | **4** | | **4** |
| **Pre-requisite** | | | | **Through knowledge about CAD and**  **production techniques** | **Syllabus Version** | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the preparatory process of sewing process. 2. Help the students to understand the working principles of various sewing machines. 3. Enhance the students knowledge in garment finishing equipments. | | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | | |
| CO1 | | Understand about the design process concepts and methods | | | | | | | K2 | |
| CO2 | | Apply the domain Knowledge and develop design portfolio and techpeck | | | | | | | K3 | |
| CO3 | | Create the garment sample for Kids wear | | | | | | | K6 | |
| CO4 | | Create the garment for Women’s wear | | | | | | | K6 | |
| CO5 | | Create the garment for Men’s wear | | | | | | | K6 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | |  | | | | **90 hours** | | | |
| 1. Each Students make 2 High end fashion and one functional apparels ( Kids / Men   /Women)   1. Designs may be inspired by national or international designer collection or their own inspiration based on current needs 2. Students should prepare 2 kinds of file such as design process & Garment Tech pack 3. Design file which comprises inspiration details, customer survey report, design, fabric, silhouette, color forecast details. 4. Garment Tech pack file comprises all flat sketches , garment flow process details accessory and trims specification details and costing chart for single piece | | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | **Total Lecture hours** | | | **90 hours** | | | | |
| **Text Book(s)** | | | | | | | | | | |
| 1 | Fashion Design and Product development, Harold Carr, John Pomeroy, Blackwell  Publication, 1992. | | | | | | | | | |
| 2 | Portfolio design + Presentation, Anna Kiper, Batasford publications, 2014. | | | | | | | | | |
| 3 | Portfolio presentation for fashion designers, Linda Tain, Fairchild Publishers, 2010. | | | | | | | | | |
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| **Reference Books** | | | | | | | | | | |
| 1 | Portfolio Management, S.Kevin, Prentice hall of India, PHI publications, 2006. | | | | | | | | | |
| 2 | Design with Color: The design guide to over 1000 color combination, Alles, Jeanne,  Chronicle Boos, 1992. | | | | | | | | | |
|  | | | | | | | | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | | | | | | | | |
| <https://youtu.be/HEsmu45SKv4> | | | | | | | | | | |
| <https://youtu.be/buERDxlBn8w> | | | | | | | | | | |
| Course Designed By: B.Jeyanthy | | | | | | | | | | |



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



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| **Course code** | | | **6EQ** | **ADVANCED FASHION AND ILLUSTRATION - PRACTICAL** | **L** | **T** | | **P** | **C** |
| **Elective** | | | | **Paper II** | **-** | **-** | | **4** | **4** |
| **Pre-requisite** | | | | **Through knowledge about sketching**  **and fashion Illustration** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the drawing, painting, garment sketching. 2. Help the students to practise fashion accessory drawing and printed designs. 3. Enhance the student’s knowledge in fashion illustration. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | | Understand and practise the still model and drawing from photographs | | | | | | | K2 |
| CO2 | | Apply the domain knowledge to practise outdoor sketching | | | | | | | K3 |
| CO3 | | Apply the drawing skill to develop accessory design and fashion illustration | | | | | | | K3 |
| CO4 | | Create painting designs for fabrics and do it on fabric | | | | | | | K6 |
| CO5 | | Create garment sketching for Kids, Women & Men | | | | | | | K6 |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Part A** | | | **Fashion Sketching** | | | | **60 hours** | | |
| 1. Still Drawing 2. Model drawing, 3. Fabric painting 4. Garment Sketching-Men, Women & Kid 5. Creating Checked effects in a garment - one colour and multiple colour 6. Creating Printed effects in a garment - one colour and multiple colour 7. Outdoor Sketching 8. Fashion accessory drawing | | | | | | | | | |
| **Part B** | | | **Fashion Illustration** | | | | **30 hours** | | |
| 1. Drawing from Photographs - any 2 garment designs 2. Stylized illustration - Collage work, Cutwork illustration, 3D illustrations 3. Group illustration with different backgrounds | | | | | | | | | |
|  | | | **Total Lecture hours** | | | **90 hours** | | | |
| **Text Book(s)** | | | | | | | | | |
| 1 | Fashion Illustration Techniques,[Zeshu Takamura,](https://www.amazon.co.uk/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Zeshu%2BTakamura&text=Zeshu%2BTakamura&sort=relevancerank&search-alias=books-uk) Rockport Publishers,2012. | | | | | | | | |
| 2 | Fashion Illustration & Design: Methods & Techniques for Achieving Professional  Designs,Manuela Brambatti, Promopress,2017. | | | | | | | | |
| 3 | Fashion Flats and Technical Drawing , Bina Abling , Felis Da Costa , Bloomsbury  Academic,2017. | | | | | | | | |
|  | | | | | | | | | |
| **Reference Books** | | | | | | | | | |
| 1 | Fashion Sketch Books , Bina Abling , Bloomsbury Publishing India Private  Limited,2012. | | | | | | | | |
| 2 | Fashion Source Book, Kathryn McKelvey, John Wiley & Sons Publications,1996. | | | | | | | | |
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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) |
| <https://youtu.be/0orqkmOGamk> |
| <https://youtu.be/WLF00p7SDR4> |
|  |
| Course Designed By: R.Sneka |

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



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| **Course code** | | | **6ER** | **ADVANCED CAD PRACTICAL** | **L** | **T** | | **P** | **C** |
| **Elective** | | | | **Paper II** | **-** | **-** | | **4** | **4** |
| **Pre-requisite** | | | | **Through Knowledge about fashion**  **designing software** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about design software. 2. Help the students to understand the techniques to develop designs. 3. Enhance the student’s knowledge in catalogue and fashion show backdrop designs. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | | Understand about various tools and techniques of software | | | | | | | K2 |
| CO2 | | Create and develop the Image edited collage work proto type sample | | | | | | | K6 |
| CO3 | | Create designs for screen printing in film format. | | | | | | | K6 |
| CO4 | | Create accessory designs and Fancy effect designs on textile substrate | | | | | | | K6 |
| CO5 | | Create garment tech pack , catalogue and fashion show back drop designs | | | | | | | K6 |
| **K1** - Remember; **K2** - Undestand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Chapter:1** | | | **Collage work** | | | | **10 hours** | | |
| Image Editing & Special effects, Collage work. | | | | | | | | | |
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| **Chapter:2** | | | **Print Designs on Screen making films** | | | | **10 hours** | | |
| Print Designing – Designing, Colour Separation, Film Making (Each student should submit  digital print out of separated color films). | | | | | | | | | |
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| **Chapter:3** | | | **Accessory design & Fancy dyeing effects** | | | **15 hours** | | | |
| Accessory Designing - Hand bag, Footwear, Hat Garment designs with special effects –  Batik, Tie and Die, Block print, Checks and stripes. | | | | | | | | | |
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| **Chapter:4** | | | **Garment Tech Pack development** | | | **40 hours** | | | |
| Garment Tech Pack Design – Knitted casual wear. | | | | | | | | | |
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| **Chapter:5** | | | **Catalogue design and fashion show back drops** | | | **15 hours** | | | |
| Layout Design, Catalogue Design – Fashion show. | | | | | | | | | |
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|  | | | **Total Lecture hours** | | | **90 hours** | | | |
| **Text Book(s)** | | | | | | | | | |
| 1 | Fashion Designer′s Handbook for Adobe Illustrator, Marianne Centner, John Wiley &  Sons, 2011. | | | | | | | | |
| 2 | Fashion Illustration & Design: Methods & Techniques for Achieving Professional  Designs, Manuela Brambatti, Promopress, 2017. | | | | | | | | |
| 3 | Practical Exercises for Photoshop & CorelDraw, [J.Veeranathan,](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=J.Veeranathan&search-alias=stripbooks) Balaji Institute of  Computer Graphics, 2015. | | | | | | | | |
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| **Reference Books** | |
| 1 | PRO Fashion Sketchpad: Female Figure Poses & Accessories Templates: All in one:Design & Build Your Pro Portfolio, Aemiliana Magnus, CreateSpace Independent  Publishing Platform, 2018. |
| 2 | Fashion Illustration: Inspiration and Technique, Anna Kiper, David & Charles, 2011 |
|  | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://www.youtube.com/watch?v=C0t1bMhKZ0Q> | |
| <https://www.youtube.com/watch?v=aTyETNebNMs> | |
| Course Designed By: T.Suresh | |

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



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| **Course code** | | **6EA** | **FASHION MERCHANDISING** | **L** | **T** | | **P** | | **C** |
| **Elective** | | | **Paper III** | **-** | **4** | | **-** | | **4** |
| **Pre-requisite** | | | **Basic knowledge about fashion sector**  **and their process** | **Syllabus Version** | | | **2020-**  **2021** | | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the fashion terms and business. 2. Help the students to understand the fashion merchandising concepts. 3. Enhance the student’s knowledge various fashion promotion techniques. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand about the fashion terminologies, principles and environment | | | | | | | K2 | |
| CO2 | Understand about the various fashion business level | | | | | | | K2 | |
| CO3 | Understand about forecasting, designing and merchandising plan | | | | | | | K2 | |
| CO4 | Analyze about the various fashion retailing tools | | | | | | | K4 | |
| CO5 | Analyze the knowledge to organize to fashion promotion activities | | | | | | | K4 | |
| **K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
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| **Unit:1** | | **Introduction to Fashion Terminologies** | | | | **15 hours** | | | |
| Fashion: Meaning, Definition & Terminologies – Components of fashion - Principles of fashion – Environment of fashion: Demographic & Psychographic, Economic, Sociological and psychological factors – Fashion cycle - Leaders of fashion: Designer’s role,  manufacturer’s role and retailer’s role – Theories of fashion adoption. | | | | | | | | | |
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| **Unit:2** | | **Fashion Business** | | | | **15 hours** | | | |
| Scope of fashion business: Primary level, secondary level and retail level – Type of fashion designers - Fashion focus on Children Apparel: History, organization & operation, merchandising & marketing activities – Fashion focus on Ladies Apparel: History,  organization & operation, merchandising & marketing activities | | | | | | | | | |
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| **Unit:3** | | **Men’s Apparel** | | | **15 hours** | | | | |
| Fashion Focus on Men’s apparel: History, organization & operation, merchandising & marketing activities – Fashion focus on Apparel accessories: History, organization &  operation, merchandising & marketing activities – Fashion Forecasting – Forecasting techniques – Sources of forecasting . | | | | | | | | | |
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| **Unit:4** | | **Fashion Merchandising** | | | **15 hours** | | | | |
| Fashion merchandising: Store image, Target customer – Fashion direction - Design planning and selection – Merchandising plan – Buying – Receiving and Warehousing – Distribution – Retail selling and promotion – Sales evaluation – Retailing policies – Visual Merchandising (VM): Definition & Meaning – VM Techniques – Elements of VM – Functions of a Visual  Merchandiser | | | | | | | | | |
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| **Unit:5** | | **Fashion Show** | | | **15 hours** | | | | |
| Fashion Shows –Types of Fashion Shows – Organizing fashion shows – Check points for  fashion shows – Foreign Fashion Markets: France, Italy, America, Britain, German, Asian – Indian Fashion Industry. Foreign Fashion Designers: American, French, Italian, German, UK | | | | | | | | | |



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| – Indian Fashion Designers – Fashion Association in India – Fashion Auxiliary services. | | | |
|  | | **Total Lecture hours** | **75 hours** |
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| **Text Book(s)** | | | |
| 1 | The world of Fahion Merchandising, Mary wolfe, Goodheart–Willcox publications,  2002 | | |
| 2 | Inside the Fashion Business, [Kitty G. Dickerson](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Kitty%2BG.%2BDickerson&search-alias=stripbooks) Mc Millan Publishing Co, 2002 | | |
| 3 | Fashion Marketing and Merchandising Mary Wolfe, goodheart –Willcox publications,  2017 | | |
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| **Reference Books** | | | |
| 1 | Fashion: From Concept to Consumer, [Gini Stephens Frings,](https://www.amazon.in/Gini-Stephens-Frings/e/B001HMLDZ6/ref%3Ddp_byline_cont_book_1) Pearson, 2007. | | |
| 2 | Visual Merchandising and Display: Studio Instant Access, [Martin M. Pegler](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Martin%2BM.%2BPegler&text=Martin%2BM.%2BPegler&sort=relevancerank&search-alias=books) & [Anne](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_2?ie=UTF8&field-author=Anne%2BKong&text=Anne%2BKong&sort=relevancerank&search-alias=books)  [Kong,](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_2?ie=UTF8&field-author=Anne%2BKong&text=Anne%2BKong&sort=relevancerank&search-alias=books) Fairchild Books, 2018 | | |
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| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://www.youtube.com/watch?v=SdPFxESXCM0> | | | |
| <https://www.youtube.com/watch?v=CQcOmHphL-4> | | | |
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| Course Designed By: B. Jeyanthy | | | |

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



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| **Course code** | | **6EB** | **APPAREL RETAILING** | **L** | **T** | | **P** | **C** |
| **Elective** | | | **Paper III** | **-** | **4** | | **-** | **4** |
| **Pre-requisite** | | | **Basic knowledge about**  **merchandising tools and techniques** | **Syllabus Version** | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the basics of retailing. 2. Help the students to understand the concepts and various retailing strategies. 3. Enhance the student’s knowledge brand retailing concepts. | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | |
| CO1 | Understand about the scope , types and functions of retailing | | | | | | K2 | |
| CO2 | Understand about the various retailing strategies | | | | | | K2 | |
| CO3 | Understand about the retail supply chain management | | | | | | K2 | |
| CO4 | Understand about various retail operations | | | | | | K2 | |
| CO5 | Understand about the retail branding | | | | | | K2 | |
| **K1** - Remember; **K2** - Undestand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | |
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| **Unit:1** | | **Introduction to Retailing** | | | | **10 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 | | | | | | | | |
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| **Unit:2** | | **Retail strategies** | | | | **20 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 | | | | | | | | |
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| **Unit:3** | | **Retail Merchandising** | | | **15 hours** | | | |
| Retail merchandising – Merchandise planning – Merchandise hierarchy – Buying function – Category management – Mark up & Mark down – Shrinkage in merchandising management – Cross margin return on inventory – Supply chain management in apparel retailing – ERP in  apparel industry | | | | | | | | |
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| **Unit:4** | | **Fashion Merchandising** | | | **15 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. | | | | | | | | |
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| **Unit:5** | | **Retail Branding** | | | **15 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** | | | **75 hours** | | | |



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| **Text Book(s)** | |
| 1 | Retail Management – Functional Principles & Practices, Gibson G.Vedamani, Jaico  Publishing House, 2003. |
| 2 | Retail Management [Chetan Bajaj](https://www.amazon.in/Chetan-Bajaj/e/B0034PD89S/ref%3Ddp_byline_cont_book_1), [Rajnish Tuli](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_2?ie=UTF8&field-author=Rajnish%2BTuli&search-alias=stripbooks) & [Nidhi Varma Srivastava,](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_3?ie=UTF8&field-author=Nidhi%2BVarma%2BSrivastava&search-alias=stripbooks) Oxford  Publisher, 2010. |
| 3 | The A to Z of Retail Management, [Swapnil Saurav](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Swapnil%2BSaurav&search-alias=stripbooks) & [Ravi Potti](https://www.amazon.in/s/ref%3Ddp_byline_sr_book_2?ie=UTF8&field-author=Ravi%2BPotti&search-alias=stripbooks), Eka Publishers, 2013 |
|  | |
| **Reference Books** | |
| 1 | I.T. in Retailing, Robert Lewis, Unicom Seminars Ltd., 1989 |
| 2 | Retail Management, Arif Sheikh and Kaneez Fatima, Himalaya Publishing House. 2008. |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | |
| <https://nptel.ac.in/courses/110/107/110107147/> | |
| <https://onlinecourses.swayam2.ac.in/imb19_mg02/> | |
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| Course Designed By: Arundhati Ghoshal | |

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



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| **Course code** | | **6EC** | **BRAND MANAGEMENT** | **L** | | **T** | | **P** | **C** |
| **Elective** | | | **Paper III** | **-** | | **4** | | **-** | **4** |
| **Pre-requisite** | | | **Basic knowledge about national and international brands and their**  **promotion techniques.** | **Syllabus Version** | | | | **2020-**  **2021** | |
| **Course Objectives:** | | | | | | | | | |
| The main objectives of this course are to:   1. Provide the knowledge about the importance of brand and its types. 2. Help the students to understand the brand identity, position and extension activities. 3. Enhance the students knowledge to create and maintain brand image. | | | | | | | | | |
| **Expected Course Outcomes:** | | | | | | | | | |
| On the successful completion of the course, student will be able to: | | | | | | | | | |
| CO1 | Understand the concept of brand building | | | | | | | | K2 |
| CO2 | Understand the knowledge about brand appraisal techniques | | | | | | | | K2 |
| CO3 | Apply the domain knowledge to position brand both national and international  level | | | | | | | | K3 |
| CO4 | Analyze about the identity and extension of brand | | | | | | | | K4 |
| CO5 | Analyze the brand promotion and and maintain brand image | | | | | | | | K4 |
| **K1** - Remember; **K2** - Undestand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create | | | | | | | | | |
|  | | | | | | | | | |
| **Unit:1** | | **Introduction to Branding** | | | | | **15 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. | | | | | | | | | |
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| **Unit:2** | | **Brand Appraisal** | | | | | **15 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. | | | | | | | | | |
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| **Unit:3** | | **Brand Positioning** | | | **15 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. | | | | | | | | | |
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| **Unit:4** | | **Brand Identity And Extension** | | | **15 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; labeling 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. | | | | | | | | | |
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| **Unit:5** | | **Brand Measurement** | | | **15 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. | | | | | | | | | |



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|  | | **Total Lecture hours** | **75 hours** |
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| **Text Book(s)** | | | |
| 1 | Building Brand Value, M.G.Parameswaran, Tata McGraw Hill Publishing Company  Ltd, 2006. | | |
| 2 | Brand Management –The Indian Context, Y.L.R.Moorthy, Vikas Publication Pvt Ltd,  2007. | | |
| 3 | Brand Management Text and Cases, V.Verma Harsh, Excel books, 2006. | | |
|  | | | |
| **Reference Books** | | | |
| 1 | Brand Management Text and Cases, U. C.Mathur , Macmillan India Ltd, 2006. | | |
| 2 | The Luxury Strategy: Break the Rules of Marketing to Build Luxury Brands, [Jean-Noël](https://www.amazon.in/Jean-No%C3%ABl-Kapferer/e/B001IU4NZ4/ref%3Ddp_byline_cont_book_1)  [Kapferer,](https://www.amazon.in/Jean-No%C3%ABl-Kapferer/e/B001IU4NZ4/ref%3Ddp_byline_cont_book_1) Kogan Page, 2012 . | | |
|  | | | |
| Related Online Contents(MOOC,SWAYAM,NPTEL,Websites etc) | | | |
| <https://www.appnova.com/marketing-strategies-for-fashion-brand/> | | | |
| <https://www.youtube.com/watch?v=T8lwXcdfdAU> | | | |
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| Course Designed By: Dr. M. Mangalagowri | | | |

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| **Mapping with Programme Outcomes** | | | | | | | | |
| **Cos** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** |
| **CO1** | S | L | L | S | M | S | S | S |
| **CO2** | S | L | L | S | M | S | S | S |
| **CO3** | L | L | L | M | M | S | M | S |
| **CO4** | L | L | L | M | M | S | M | S |
| CO5 | L | L | L | M | M | S | S | M |



Annexure

**B. Sc. Garment Designing & Production**

# Syllabus

**(With effect from 2020 -2021)**

# Program Code: 26N



**Bharathiar University**

# (A State University, Accredited with “A“ Grade by NAAC and 13th Rank among Indian Universities by MHRD-NIRF) Coimbatore 641 046, INDIA