

Post graduate Programme in M.Sc. in Textile and Apparel Designing Semester System

Programme Outcomes (POs)

Upon successful completion of the **M.Sc. Textile and Apparel Designing** programme, postgraduates will be able to:

PO1 – Advanced Knowledge and Technical Expertise

Demonstrate in-depth knowledge of textile science, including fibers, yarns, fabrics, dyeing, printing, finishing, and quality evaluation, to design and develop apparel and textile products meeting functional, aesthetic, and performance standards.

PO2 – Creative and Innovative Design Solutions

Integrate advanced design concepts, CAD technologies, pattern-making, garment construction, and surface ornamentation techniques to create innovative, sustainable, and market-ready textile and apparel products.

PO3 – Research and Analytical Competence

Apply research methodologies, statistical tools, and analytical skills to investigate problems, conduct independent research, and propose innovative solutions to challenges in textile science and apparel technology.

PO4 – Industry Readiness and Entrepreneurship

Demonstrate a strong understanding of merchandising, retail management, cost analysis, and entrepreneurship to successfully manage or establish textile and fashion-related enterprises.

PO5 – Professional Skills and Lifelong Learning

Exhibit effective communication, teamwork, leadership, project management, and ethical decision-making skills, along with a commitment to continuous learning to adapt to evolving trends and global developments in the textile and fashion industries.

PO6 – Global and Sustainable Perspective

Understand the social, cultural, economic, and environmental impact of textile and apparel production, and integrate sustainability, circular economy principles, and ethical practices into professional decision-making.

Program Specific Outcomes

PSO1 — Mastery of Textile Science and Apparel Technology

Apply advanced knowledge of fibres, yarns, fabrics, dyeing, printing, finishing, and quality testing to design, develop and evaluate textile materials and apparel products that meet functional, aesthetic and performance requirements.

PSO2 — Innovative Design and Product Development

Integrate creative design principles, CAD tools, pattern-making techniques, surface ornamentation, and apparel construction skills to develop original, sustainable and market-ready textile and fashion solutions.

PSO3 — Research, Industry Practice and Entrepreneurship

Conduct independent research, analyze data, and apply industry practices in merchandising, retail management,

cost analysis, and entrepreneurship to solve real-world challenges and contribute to the growth of the textile and apparel sector.

PSO4 — Professional Competence and Lifelong Learning

Demonstrate effective communication, project management, teamwork, ethical practices and a commitment to continuous learning to adapt to emerging technologies, trends, and global standards in textiles and fashion.

SEMESTER I

Paper Code	Papers	Credits	L-T-P-C	Marks		
				Sessional	End Semester	Total
HOM580	Textile Industry of India	4	4-0-0-4	40	60	100
HOM581	Apparel Designing and Construction-I	3	3-0-0-3	40	60	100
HOM582	Apparel Designing and Construction-I (Practical)	3	0-0-6-3	40	60	100
HOM583	Fashion Retailing and Merchandising	3	3-0-0-3	40	60	100
HOM584	Dyeing and Finishing	3	3-0-0-3	40	60	100
HOM585	Dyeing (Practical)	4	0-0-8-4	40	60	100
Total		20				600

SEMESTER II

Paper Code	Papers	Credits	L-T-P-C	Marks		
				Sessional	End Semester	Total
HOM586	Textile Printing	4	4-0-0-4	40	60	100
HOM587	Textile Printing(Practical)	4	0-0-8-4	40	60	100
HOM588	CAD in Textile and Fashion –I (Practical)	4	0-0-8-4	40	60	100
HOM589	Research Methods and Statistics	4	3-1-0-4	40	60	100
HOM590	Fabric Construction Techniques	4	4-0-0-4	40	60	100
Total		20				500

SEMESTER III

Paper Code	Papers	Credits	L-T-P-C	Marks		
				Sessional	End Semester	Total
HOM591	Entrepreneurship Management	3	3-0-0-3	40	60	100
HOM592	Textile Testing	3	3-0-0-3	40	60	100
HOM593	Textile Testing (Practical)	4	0-0-8-4	40	60	100
HOM594	Apparel Designing and Construction-II (Practical)	6	0-0-12-6	40	60	100
HOM595	CAD in Textile and Fashion-II (Practical)	4	0-0-8-4	40	60	100
Total		20				500

SEMESTER IV

Paper Code	Papers	Credits	L-T-P-C	Marks		
				Sessional	End Semester	Total
HOM596	Scientific paper writing	4	0-0-8-0	40	60	100
HOM597	Seminar	8	0-0-16-8	40	60	100
HOM598	Dissertation	6	0-0-12-6	40	60	100
HOM599	Summer Training	6	0-0-12-6	40	60	100
Total		24				400

The total credits of the 2 years semester of P.G. (Textile and Apparel Designing) are 84.

SEMESTER I

Paper Code: HOM580

LTPC: 4-0-0-4

Paper: Textile Industry of India

Course Description:

This course provides an in-depth understanding of the structure, development, and dynamics of the Indian textile industry. It introduces students to the historical evolution, current status, and future prospects of the sector, while analyzing its economic significance and policy environment. The course explores various textile policies, trade regulations, organizational structures, and export mechanisms shaping the industry. It also examines the strengths, weaknesses, opportunities, and threats (SWOT) of key textile sectors, including cotton, wool, jute, man-made fibers, handloom, readymade garments, and technical textiles.

Students will gain insights into the functioning of textile management systems, export procedures, and the role of textile research organizations. By the end of the course, learners will be able to critically assess the industrial, economic, and global context of the Indian textile sector and apply their knowledge to industry practices and policy analysis.

Course Objective:

- To acquaint students with the multifaceted structure, growth, and current status of the Indian textile industry.
- To understand the economic significance of the textile and clothing sector in terms of employment, trade, and national development.
- To analyze various national and international textile policies and their impact on industry growth and competitiveness.
- To study the strengths, weaknesses, opportunities, and threats (SWOT) of major textile sectors in India.
- To gain knowledge of textile management systems, export procedures, and the role of research organizations in industry advancement.

Course Outcomes (COs):

CO1: Identify and describe the structure, historical development, and current status of the Indian textile industry.

CO2: Analyze and evaluate the impact of various national and international textile policies.

CO3: Examine and assess the strengths, weaknesses, opportunities, and threats (SWOT) of major textile sectors.

CO4: Apply and interpret knowledge of textile management systems, export procedures, and roles of textile research organizations.

✓ CO–PO Mapping Table (Simple Version)

Course Outcomes (CO)	Bloom's Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:	Understand	3	2				1	1		1	
CO2:	Analyze/Evaluate	3	2	2			1	2		2	
CO3:	Analyze/Evaluate	3	2	2	1		2	2		1	2
CO4:	Apply/Analyze	3	2	2	1	1					

UNIT I

1. An overview on business environment of India.
2. History, growth and present status of the India textile industry, sickness, revival and up-gradation

UNIT II

1. Importance of textile and clothing industry in the Indian economy in terms of consumption, employment and per capita income, gross national product and international trade.
2. National textile policy 1985 and 2000, change in focus over the years in terms of objectives, functional ability, regulatory mechanisms and futuristic trends.

UNIT III

1. Foreign trade policy. The mechanism of MFA. History and current status GATT and WTO. Implications of a free trade regime and protectionist regime.
2. Production, consumption, employment problems, prospects and SWOT analysis of Cotton, Wool, Jute, man-made fiber and filament yarn industry, Handloom industry, Readymade garment industry and Technical textiles.

UNIT IV

1. Textile management organizational structure- organized and decentralized structure, handloom and powerloom sector.

UNIT V

1. Export procedures, incentives, organization for promotion of exports.
2. Textile research organization and their functions.

References:

- Mishra and Puri, Indian Economy, Himalaya publishing house.
- National textile policy-2000
- Journals- Cloth line, Business India, Business Today
- News papers- Economic Times, Financial Express and Apparel online
- Industry published journal, newsletter, WVEPC, HHEC
- Economic surveys, Government of India

Paper: Apparel Designing and Construction-I**Course Description:**

This course introduces students to the fundamental principles and techniques of apparel designing and garment construction. It covers the study of industrial machines and equipment, their applications in garment manufacturing, and the relationship between sewing parameters such as needles, threads, stitch types, and fabric behavior. Students will learn essential pattern-making methods, including drafting, flat pattern, and draping techniques, and develop the ability to evaluate fabrics and garments based on appropriate selection criteria.

By the end of the course, students will have a comprehensive understanding of the design and construction process, enabling them to transform creative design concepts into finished apparel with attention to functionality, aesthetics, and quality.

Course Objectives:

- To impart in-depth knowledge of garment construction processes, including style reading, pattern development, and sewing techniques.
- To develop an understanding of industrial machines, equipment, and their applications in apparel manufacturing.
- To study the relationship between needles, threads, stitch types, and fabric characteristics for optimal garment performance.
- To train students in fundamental pattern-making methods such as drafting, flat pattern, and draping.
- To equip students with the ability to evaluate fabrics and garments based on quality, functionality, and buying criteria.

Course Outcomes (COs):

CO1: Identify industrial machines and equipment used in garment construction processes.

CO2: Analyze the relationship between needles, threads, stitch length, and fabric types.

CO3: Apply pattern-making techniques such as drafting, flat pattern, and draping.

CO4: Evaluate fabrics and garments based on appropriate buying criteria.

Course Outcomes (CO)	Bloom's Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:	Remember/Understand	3	2			1	1				1
CO2:	Analyze	3	3		1	2	1				2
CO3:	Apply/Create	3	3		3	2	2		1		2
CO4:	Evaluate	3	2	1	2	3	2				

UNIT I

1. Detailed study of industrial machine and equipment used for:
 - a. Cutting
 - b. Sewing
 - c. Finishing
 - d. Embellishment

UNIT II

1. Study the interrelationship of needles, thread, stitch length and fabric.

UNIT III

1. Method of pattern making:
 - a. Drafting
 - b. Flat pattern
 - c. Draping

UNIT IV

1. Developing paper pattern:
 - a. Understanding the commercial paper pattern
 - b. Layout on different fabrics, width and types

UNIT V

1. Buying criteria for:
 - a. Knits, denims, silks and other special
 - b. Readymade garments

References:

- Armstrong, Pattern making for fashion designing, Pearson Education
- Gioello and Berke, Figure type and size rang, Fairchild publications, New York.
- Grate and Storm, concepts in clothing, McGraw Hill Book Co., New York
- BinaAbling, Fashion sketch book, Fairchild publications, New York.
- Claire Shaeffers, Fabric sewing guide, Chilton book company, Randot, Pennysyivania.
- Harold Carr and BarabaraLathan, The technology of Clothing Manufacturer, Oxford BSP professional book, London
- Slamper, Sharpo and Donnell, Evaluating apparel quality, Fairchild publications, New York.
- Natalle Bray, Dress Fitting, Blackwell science ltd.

Paper Apparel Designing and Construction-I (Practical)**Course Description:**

This practical course focuses on developing essential hands-on skills in garment construction and pattern development. Students will apply principles of flat pattern design to create variations in darts, sleeves, collars, necklines, facings, and plackets, enhancing both functionality and design aesthetics. Emphasis is placed on precision, creativity, and technical accuracy in assembling different garment components.

The course also introduces basic draping techniques, enabling students to translate design ideas into three-dimensional garment forms. By the end of the course, learners will possess foundational practical competencies in apparel construction, preparing them for advanced design and production applications in the fashion and textile industry.

Course Objective:

- To develop practical skills in garment construction through hands-on application of pattern-making and sewing techniques.
- To train students in creating variations in garment components such as darts, sleeves, collars, necklines, facings, and plackets.
- To enhance precision, creativity, and technical accuracy in assembling and finishing different garment styles.
- To introduce basic draping techniques for translating creative design ideas into three-dimensional garment patterns.
- To build confidence and competence in applying design principles to practical garment construction processes.

Course Outcomes (COs):

CO1: Apply principles of flat pattern design to create variations in darts, sleeves, and collars.

CO2: Construct and finish different types of necklines and facings with precision and design appeal.

CO3: Develop and assemble various placket and sleeve styles appropriate for different garment types.

CO4: Demonstrate basic draping techniques to translate creative designs into garment patterns.

Course Outcomes (CO)	Bloom's Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:	Apply/Create	3	3		3	2	2			2	2
CO2:	Apply	3	3		3	2	2			2	2
CO3:	Apply/Analyze	3	3		3	2	3			2	2
CO4:	Apply/Create	3	3		3	2	2				

UNIT I

1. Designing through Flat Pattern:

- a. Dart manipulation
- b. Development of variation in sleeves
- c. Development of variation in collars (Rolled and shawl collar)

UNIT II

1. Neckline and Facings:

- a. Scooped necklines
- b. Built up neckline
- c. Cowl neckline
- d. Designer necklines

UNIT III

1. Plackets:

- a. Center button closing
- b. Double breasted
- c. Asymmetrical closing

UNIT IV

1. Sleeve Construction:

- a. Set-in –sleeves
- b. Flared sleeves
- c. Raglan sleeves
- d. Puff sleeves

UNIT V

1. Designing Through Draping:

- a. Basic draping principle and techniques
- b. Developing patterns

References:

- Pamela Stringer, Pattern drafting for dressmaking, Batsford ltd.
- Helen Joseph Armstrong, Draping for apparel design, Fairchild publications, New York

Paper: Fashion Retailing and Merchandising**Course Description:**

This course provides a comprehensive understanding of the fashion industry's retail and merchandising landscape. It explores the dynamics of fashion, including trends, forecasting, and the designer's role in merchandising, along with the principles of art and design used in visual merchandising. Students will learn how to plan and manage retail operations, including inventory control, budgeting, sales force management, and store layout.

The course also covers marketing strategies, brand management, pricing techniques, and promotional activities aligned with product and brand life cycles. By the end of the course, students will be able to design effective merchandising strategies and make informed decisions to enhance retail performance in a competitive fashion market.

Objectives:

- To understand the dynamics of fashion and fashion designers
- To develop understanding visual merchandizing and its importance in today's consumer market.
- To gain knowledge about the management aspect of retailing.
- To impart knowledge regarding the prevalent merchandizing practices.

1.

Course Outcomes (COs):

CO1: Explain the dynamics of fashion and the designer's role in merchandising.

CO2: Apply principles of art and design to create effective visual merchandising strategies.

CO3: Plan and manage retail operations, including budgeting, stock, and sales force management.

CO4: Design and evaluate marketing, promotion, and pricing strategies in relation to product and brand life cycle.

✓ CO–PO Mapping Table (Simple Version)

Course Outcomes (CO)	Bloom's Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:	Understand	3	2		1		2		1		2
CO2:	Apply/Create	3	3		3		2			2	2

Course Outcomes (CO)	Bloom's Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO3:	Apply/Analyze	3	2	2	2	1	3		1	3	2
CO4:	Create/Evaluate	3	3	2	3	1					

UNIT I

1. The Dynamics of Fashion:

- a. Fashion terminology, fashion cycle, fashion adoption theories, fashion forecast and the role of designers in merchandizing.

2. The Concept of Retailing:

- a. Definition, role of retailing in merchandizing the retail mix, retail environment types of retail store.

UNIT II

1. Element and Principle of Art and Design:

- a. Element of design colour, textile line form, space principals of design rhythm, balance proportion, emphasis, unity interpretation for designing retail store.

2. Visual Merchandising:

- a. Plans and Schedules: Season holiday promotion, Sales themes ideas
- b. Types of Display: Window display, Interior display
- c. Elements of Display: The merchandising, the backdrop walls and shelves, mannequins and forms signage lighting- luminance levels relation to colors.

UNIT III

1. Planning and Budgeting for a Retail Store:

- a. Maintenance and ordering of stocks, preparation of sales report.

1. Recruitment and Management of Sales Force:

- a. Types of compensation package for sales force, personal selling as a means of promotion.

UNIT IV

1. Marketing and Merchandising:

- a. Core concepts, marketing environment, marketing and merchandising, environment of India.

2. Product in Relation to Fashion:

- a. Classification of fashion product life cycle the process of product development, the marketing of the brand, branding strategies, brand management, brand image building.

UNIT V

1. Promotion and Distribution:

- a. Role of promotion, methods of promotion, advertising, sales promotion and selling. Designing and management of different methods of promotion, and their employment in relation to cost effectiveness and life cycle.

2. Pricing:

- a. Principles and methods of pricing: pricing in relation to product type product life cycle, distribution outlet etc.

References:

- Frings G.S, Fashion form Concept to Consumer Prentice Hall Inc. Engelwood Cliff's New Jersey.
 - Chuter A.J, Introduction to Clothing Production Management, Blackwell Science Ltd.
- Stone E. and Sample J.A, Fashion Merchandising: An Introduction, McGraw Hill Boo

Course Description:

This course provides an in-depth understanding of dyeing principles, techniques, and finishing processes essential to textile manufacturing. It covers the chemistry, classification, and fiber affinity of various dyes and pigments, as well as the application of both chemical and natural dyes. Students will explore industrial dyeing processes, dyeing machinery, auxiliaries, and safety considerations, along with key textile finishing techniques that enhance fabric properties and performance.

Emphasis is also placed on analyzing recent advancements in dyeing and finishing technologies, equipping students with the technical knowledge and practical insights required for quality improvement and innovation in textile processing. By the end of the course, students will be prepared to apply advanced finishing techniques and evaluate their impact on textile functionality and aesthetics.

Course Objectives:

- ◆ To provide an in-depth understanding of the chemistry, classification, and fiber affinity of different dyes and pigments.
- ◆ To familiarize students with various chemical and natural dyeing methods and their industrial applications.
- ◆ To develop knowledge of dyeing auxiliaries, machinery, and processes involved in textile coloration.
- ◆ To study different finishing processes that enhance the functional, aesthetic, and performance properties of textiles.
- ◆ To analyze recent advancements and innovative technologies in dyeing and finishing for sustainable textile production.
- ◆ To equip students with the technical knowledge required to evaluate and apply suitable dyeing and finishing techniques in the textile industry.

Course Outcomes (COs):

CO1: Explain the chemistry, classification, and fiber affinity of dyes and pigments.

CO2: Apply chemical and natural dyeing techniques with appropriate auxiliaries.

CO3: Analyze industrial dyeing processes and textile finishing methods.

CO4: Evaluate recent advancements in dyeing and finishing technologies.

Course Outcomes (CO)	Bloom's Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:	Understand	3	2			3	1	2			2
CO2:	Apply	3	3		2	3	2	2		2	2
CO3:	Analyze	3	3	2	2	3	2	3		2	2
CO4:	Evaluate	3	3	2	3	3	2				

UNIT 1

Dyeing:

1. History of dyestuff concept of colours and its relation to light classification and types of dyes/colouring matter
2. Chemistry of dyes and pigments- composition structure, properties, affinity towards fibre.

UNIT II

1. Dyeing with chemical dyes direct, reactive, vat, sulphur, azo, acid, and basic and disperse dyes.
2. Dyeing with natural dyes role of methods.

UNIT III

1. Dyeing machines for fiber yarn and fabric industrial dyeing practices.
2. Dyeing auxiliaries and their uses. Banned dyes and auxiliaries regarding dyeing soaping and washing.

UNIT IV

Finishing:

1. Finishing concept scope and importance finishes- soil repellent soil resistant soil release, antistatic, anti-pilling, wash wear, crabbing, decanting, water proof and repellency mildew proof flame resistance and flame proof, antibacterial

UNIT V

1. Recent advancement in dyeing.
2. Recent advancement in finishing

References:

- V. A. Sehnai, Chemistry of Dyes and principle of Dyeing. Sevak Prakasahan, Mumbai
- V. A. Sehnai, Azo Dyes Facts and Figures. SevakPrakasahan, Mumbai
- K. Venkatrama Chemistry of Synthetic Dyes, Part I and Part II
- H. A. Lubs, Robert E. The Chemistry of Synthetic Dyes and Pigments, Krieger Publishing Company New York.
- Bermad P Corbman. Textile-Fiber
- Prayag R. S. Textile Finishing
- VaidyaA&Trivedi, textile Auxiliaries & Finishing Chemicals. ATIRA, Ahemadabad

Paper: Dyeing (Practical)**Course Description:**

This practical course is designed to develop hands-on skills in textile dyeing techniques across various fibers and fabrics. Students will perform dyeing of cotton, jute, silk, and wool using the exhaust method and experiment with different dye classes to achieve desired color effects and fastness properties. The course also introduces traditional resist dyeing methods, such as tie-dye and batik, enabling students to explore creative surface design possibilities.

Additionally, students will gain exposure to industrial dyeing and processing practices through observation and field visits. By the end of the course, they will have a thorough understanding of practical dyeing processes, color application methods, and quality considerations essential for textile finishing and product development.

Course Objective:

- To develop practical skills in dyeing various natural and synthetic fibers such as cotton, jute, silk, and wool using the exhaust method.
- To familiarize students with different classes of dyes and their appropriate application techniques.
- To train students in traditional resist dyeing methods like tie-dye and batik for creative surface design.
- To enhance understanding of the relationship between dyeing techniques, fabric properties, and end-use performance.
- To provide exposure to industrial dyeing and textile processing practices through observation and field visits.

Course Outcomes (COs):

CO1: Demonstrate dyeing of cotton, jute, silk, and wool using the exhaust method.

CO2: Apply resist dyeing techniques, including tie-dye and batik, on various fabrics.

CO3: Observe and analyze industrial dyeing and processing practices.

** CO–PO Mapping Table (Simple Version)**

Course Outcomes (CO)	Bloom's Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:	Apply	3	3		2	3	2	2		2	2
CO2:	Apply/Create	3	3		3	3	2	2		2	3
CO3:	Analyze/Evaluate	3	3	2	2	3	2				

UNIT I

1. Dyeing of cotton and jute with corresponding dyes by exhaust method in laboratory dyeing machine.

UNIT II

1. Dyeing of silk and wool with corresponding dyes by exhaust method in laboratory dyeing machine.

UNIT III

1. Resist dyeing- Tie dye on silk, jute, cotton, chiffon, georgette

UNIT IV

1. Resist dyeing- Batik on silk, cotton

UNIT V

1. Visit to dyeing and processing unit

References:

- V. A. Sehnai, Chemistry of Dyes and principle of Dyeing. SevakPrakasahan, Mumbai
- V. A. Sehnai, Azo Dyes Facts and Figures. SevakPrakasahan, Mumbai
- Nalini Srivastava, Tie and dye, PanditSunderlal Sharma Central Institute of Vocational Education

SEMESTER II

Paper Code: HOM586

LTPC: 4-0-0-4

Paper: Textile Printing

Course Description:

This course provides comprehensive knowledge of textile printing techniques, principles, and applications. It introduces students to the historical development of printing, key differences between dyeing and printing, and the preparation of fabrics for printing. Students will explore various printing methods—including block, stencil, screen, roller, and rotary printing—at both cottage and industrial scales.

The course covers the formulation of printing pastes, use of thickeners and auxiliaries, fixation processes, and a range of printing styles such as direct, resist, discharge, and special techniques. Emphasis is also placed on finishing treatments and recent technological advancements in textile printing. By the end of the course, students will be equipped to apply printing techniques creatively and technically, contributing to innovative textile product development.

Couse Objectives:

- To impart comprehensive knowledge of textile printing principles, techniques, and processes.
- To familiarize students with the historical development and various methods of textile printing at both cottage and industrial levels.
- To understand the preparation of fabrics, thickeners, auxiliaries, and printing pastes suitable for different fibers and dyes.
- To explore different styles of printing such as direct, resist, discharge, and special techniques, along with their applications.
- To analyze finishing processes, after-treatments, and recent advancements in textile printing technologies.
- To develop the ability to apply printing knowledge creatively and technically in textile product development.

Course Outcome:

1. Explain the principles, history, and methods of textile printing.
2. Apply printing techniques and prepare printing pastes for different fibers.
3. Demonstrate various printing styles, including direct, resist, discharge, and special techniques.
4. Analyze finishing processes and recent advancements in textile printing

Contents:

UNIT I

- 1. Introduction to Printing:** Difference between Dyeing and Printing. Historical development of printing methods.
- 2. Methods of Printing:** Block, Stencil, Screen, Roller, Rotary screens used at cottage and industrial level.

UNIT II

- 1. Principle of Printing:** Cotton, Polyester, Acrylic, Silk. Thickeners, auxiliaries for printing. Fixation of prints using various methods/ machineries, rotary screen printing machine. Preparation of screen.
- 2. Printing Pastes:** Thickening agents and auxiliaries for the printing and their suitability to various classes of dyes and fibers. Preparation of printing pastes for different dyes and different fibers.

UNIT III

- 1. Styles of Printing:**
 - a. Direct style, resist or reserve style, discharge style and raised style.
 - b. Styles and methods of printing traditionally used in India.

UNIT IV

- 1. Special Printing Procedures:**
 - a. Polychromatic dyeing transfers printing, carpet printing, flock printing.

UNIT V

1. Finishing and after treatment of printed goods at cottage and industrial level.
2. Recent advances in printing.

References:

- V.A. Shenai. Technology of Textile Processing. Vol. IV. Sevak Publication.
- R.S Prayag. Technology of Textile Printing. Noyes Data Corporation.
- Joyce Story. The Thames & Hudson Manual of Textile Printing. Thames & Hudson 4. Vilensky G. Textile Science. CBS.

Paper: Textile Printing (Practical)**Course Description:**

This practical course is designed to develop students' technical skills and creativity in fabric printing techniques. It covers hands-on training in preparing fabrics for printing, applying various dyes and pigments, and fixing colors using steaming and other industrial methods. Students will practice traditional and modern printing techniques, including block printing, screen printing, and multi-color design development.

The course also emphasizes product development through printed textiles and includes field exposure to industrial printing units for better understanding of large-scale processes. By the end of the course, students will be able to execute professional-quality printed textiles, demonstrating control over materials, techniques, and design aesthetics.

Course Objective:

- To develop practical skills in applying various textile printing techniques on different types of fabrics.
- To familiarize students with the preparation of fabrics, dyes, pigments, and printing pastes for effective printing results.
- To train students in traditional and modern printing methods, including block printing, screen printing, and multi-color printing.
- To enable students to design and execute creative printed textile products with professional finishing.
- To provide exposure to industrial printing practices through field visits, enhancing understanding of large-scale production processes.

Course Outcome:

Demonstrate printing of various fabrics using dyes and steaming techniques.

1. Apply block printing with pigments and develop printed products.
2. Prepare and use screens for single-color and multi-color designs.
3. Observe and analyze industrial printing processes.

Contents:**UNIT I**

1. Printing of cotton, jute, silk, polyester with respective dyes and fixation using steaming techniques.

UNIT II

1. Printing with pigments. Block printing on silk, cotton
2. Product development

UNIT III

1. Preparation of screen for printing single color and design screen for 3 colors separately.

UNIT IV

1. Printing and Product development using prepared screens

UNIT V

1. Visit to printing unit

References:

- V.A. Shenai. Technology of Textile Processing. Vol. IV. Sevak Publication.
- R.S Prayag. Technology of Textile Printing. Noyes Data Corporation.
- R. Vatsala, Textbook of Textile and Clothing, ICAR publications

Paper: CAD in Textile and Fashion – I (Practical)**Course Description:**

This practical course introduces students to the fundamentals of computer-aided design (CAD) tools used in textile and fashion applications. It focuses on developing digital skills essential for creating fashion illustrations and design concepts using industry-standard software such as CorelDRAW and Adobe Photoshop. Students will learn to apply digital techniques for sketching, coloring, and rendering designs, as well as explore various design development methods.

The course emphasizes the integration of technology with creativity, enabling students to translate design ideas into digital formats suitable for professional presentations and product development. By the end of the course, students will be proficient in using CAD tools to enhance their design workflow and support innovative textile and apparel solutions.

Course Objective:

- To introduce students to the basic concepts and applications of computer-aided design (CAD) in the textile and fashion industry.
- To develop fundamental computer skills and familiarize students with design software such as CorelDRAW and Adobe Photoshop.
- To enable students to create digital fashion illustrations and design concepts using various CAD tools and techniques.
- To enhance creativity and innovation by applying digital tools in design development and visualization.
- To prepare students for industry-relevant design practices by integrating technology into the design process.

Course Outcome:

1. Demonstrate basic computer skills necessary for design applications.
2. Create basic illustrations using CorelDRAW software.
3. Create basic illustrations using Adobe Photoshop software.
4. Apply CorelDRAW and Adobe Photoshop in developing different design concepts.

Contents:**UNIT I**

1. Basic knowledge of computer

UNIT II

1. Basic illustration using Corel draw softwar

UNIT III

1. Basic illustration using Adobe Photoshop software

UNIT IV

1. Application of Corel draw software in different design development

UNIT V

1. Application of Adobe Photoshop software in different design development

References:

- Veisainet, D.D. 1987 Computer Aided drafting design concept and application
- Fugii, D. Calour with stryle, Graphic-Sha Publishing company Ltd.
- Winifred, A. 1990 metric pattern cutting for men's wear: including Unisex casual clothes and CAD, BSI Profession at books Oxford.
- Carklin P.G. 1990 pattern clothing for womens clothes, the technology of sizing BSP professional books Oxford
- Aldrich, W 1994 CAD in clothing and textile Blackwell Sciences Ltd.

Paper: Research Methods and Statistics**Course Description:**

This course provides a comprehensive introduction to research methodology and statistical techniques essential for scientific inquiry in Home Science and textile-related fields. It covers the principles of scientific methods, research design, sampling techniques, data collection methods, and types of research, enabling students to plan and conduct systematic investigations. Emphasis is placed on both quantitative and qualitative research approaches, including interviews, observations, social mapping, and participatory assessments.

Students will also gain proficiency in applying statistical tools for data analysis, interpretation, and presentation, enhancing their ability to draw valid conclusions and support evidence-based decision-making. By the end of the course, students will be equipped to design, execute, and evaluate research projects relevant to textiles, apparel, and consumer sciences.

Course Objectives: To introduce students to the fundamental concepts, principles, and significance of research and statistics in Home Science and textile studies.

- To develop the ability to identify, define, and formulate research problems relevant to the field.
- To familiarize students with various types of research designs, methodologies, and sampling techniques.
- To enable students to construct and apply appropriate data collection tools for quantitative and qualitative research.
- To train students in the use of statistical methods for data analysis, interpretation, and presentation.
- To cultivate critical thinking and analytical skills necessary for designing and conducting scientific research projects

Course Outcome:

1. Explain scientific methods, statistics, and the role of research in Home Science.
2. Identify and formulate research problems and distinguish types of research.
3. Apply sampling techniques and develop research designs for quantitative and qualitative studies.
4. Demonstrate qualitative research methods, including interviews, observations, and participatory assessments.

Contents:**UNIT I**

1. Science, scientific methods, scientific approach.
2. Role of statistic and research in Home Science discipline, objective of research explanation, control and prediction.

UNIT II

1. Type of research historical, survey and experimental, case study, social research, participative research.
2. Definition and identification of a research problem.
 - a. Selection of research problem.
 - b. Justification

UNIT III

1. Theory, hypothesis, basic assumption, limitation and delimitation of the problem.
2. Types of variable.
3. Theory of probability
 - a. Population of sample.
 - b. Probability sampling systematic random sampling, two stages and multi stage sampling, cluster sampling.

UNIT IV

1. Non- probability sampling, purposive quota and volunteer sampling/snowball sampling.
2. Basic principle of research design.
3. Qualitative research methods.

UNIT-V

1. Definition and types of qualitative research.
 - a. Research and techniques of data collection
 - b. Informal group discussion
 - c. Interview: Key information, In-depth interviews
 - d. Observation
 - e. Social mapping
 - f. Participatory rapid assessment
 - g. Participatory learning assessment

References:

- C. R. Kothari, Gaurav Garg, 2014 Research Methodology Method and Techniques, (IIIrd edition), New age International Publishers
- S.P. Gupta, 1999, Elementary statistical Methods, Sultan Chand & Sons
- Bandarker, P.L. and Wilkenson T.S. 2000, Methodology and Techniques of Social Research, Himalaya Publishing House, Mumbai
- Bhatnagar, G.L. 1990: Research Methods and Measurements in Academy, New Delhi.
- Dooley, D, 1995, Strategies for interpreting Qualitative data: sage Publication California

Paper: Fabric Construction Techniques**Course Description:**

This course provides an in-depth understanding of the methods, principles, and technologies involved in fabric construction. It covers the processes of yarn manufacture from natural and man-made fibers, modern yarn production techniques, and the development of specialized yarns, including textured and blended varieties. Students will study various fabric-making methods such as weaving, knitting, non-woven production, lace, and braiding, along with their characteristics and applications.

The course also explores fabric faults, their causes, and remedies, as well as recent advancements in spinning, weaving, knitting, and non-woven technologies. By the end of the course, students will have the knowledge and analytical skills required to evaluate, select, and apply appropriate fabric construction techniques for diverse textile products and applications.

Objective:

- To enable students to understand and learn methods of developing fabric by using different fibers, yarn and fabric making techniques.
- To gain knowledge and understanding of fundamental of weaving machinery and processes.
- To analyze different weave pattern and learn principles of creating design through weaving.

Learning Outcome:

1. Explain principles of yarn manufacture for natural and man-made fibers.
2. Analyze modern yarn production and textured yarn technologies.
3. Understand principles of fabric manufacture, including knitted, woven, and non-woven fabrics.
4. Identify fabric faults and discuss recent advancements in textile production.

Contents:**UNIT I**

1. Principles of yarn manufacture-yarn processing.
 - a. For natural fibers cotton, wool and worsted, jute, linen by conventional system and recent development like Rotar, Vortex, Friction Ajrjit, Electrostatic Twistless, Laminated yarns.

UNIT II

1. Modern development in yarns and in their manufacturing process
 - a. Modern yarn production-principles of spinning in production of man-made fiber, hot and cold drawing, spun yarn, bled yarn and bicomponent yarn. Cold drawing,
 - b. Textured yarn technology principle methods and process variable in texturing and their effect on properties of textured yarn, morphological change induced by texturing.

UNIT III

1. Principles of fabric manufacture- basic principles, characteristics and significance of different processes- women knitted non woven laces braids.

UNIT IV

1. Fabric faults and their remedies

- a. Fiber
- b. Yarn
- c. Fabric

UNIT V

1. Recent advancement in spinning, weaving, knitting and non-wovens.

Reference:

- Grociki Z.J. Watson Textile Design and Colour, London Newness Butter Wo1q1qrths.
- William Watson Advanced Textile Design London Longmans Green and Co.Ltd.
- Corbman, B. Fibre to Fabric.
- AmalsarF.M.Fabric Structure and Cloth Analysis.
- Ajgaonkar D.B. Knitting Technology, Universal Publishing Corp-Mumbai.
- Spun Yarn Technology, Eric Oxtoby Butterworth publication.

SEMESTER III

Paper Code: HOM591

LTPC: 3-0-0-3

Paper: Entrepreneurship Management

Course Description:

This course introduces students to the fundamental concepts, principles, and practices of entrepreneurship with a focus on the textile and apparel sector. It explores the role of entrepreneurs in economic development, the process of venture creation, and the essential steps involved in establishing and managing a business. Students will learn about entrepreneurial motivation, competencies, and skills required to identify, assess, and exploit business opportunities.

The course also covers enterprise planning, feasibility analysis, resource mobilization, marketing strategies, quality control, and growth planning. Additionally, it familiarizes students with government policies, institutional support systems, and schemes for promoting entrepreneurship. By the end of the course, students will be equipped with the knowledge and skills needed to launch, manage, and expand successful ventures in the textile and fashion industry.

Course Objective:

- To provide students with a clear understanding of the concepts, principles, and significance of entrepreneurship in the textile and apparel industry.
- To develop an entrepreneurial mindset and motivate students to identify and pursue business opportunities.
- To familiarize students with the process of establishing, organizing, and managing a business enterprise.
- To equip students with knowledge of government policies, institutional support systems, and schemes related to entrepreneurship development.
- To build competencies in project planning, market analysis, financial management, resource mobilization, and quality control.
- To enable students to formulate growth strategies and explore opportunities for expansion, diversification, and enterprise networking in a dynamic market environment.

Course Outcomes:

- Student will be able to recognize a business opportunity.
- Students will be able to develop an entrepreneurial mindset and network.
- Students will be able to develop an ability of self analysis in context of an entrepreneurial career.
- Student will develop analytical and critical thinking skills necessary for making financial decision. Through SWOT analysis students will able to select appropriate enterprise.

Contents:

UNIT-I

- 1. Entrepreneurship:** Definition, characteristics employment promotion, efforts to introduce entrepreneurship

UNIT –II

1. Conceptual Frame Work:

- a. Concept need and process in entrepreneurship development
- b. Role of enterprise in a global economy
- c. Types of enterprise merits and demerits
- d. Government policies and scheme for enterprise development and management.
- e. Institutional support to enterprise development and management.

UNIT- III

1. The Entrepreneur:

- a. Entrepreneurial motivation- dynamics of motivation.
- b. Entrepreneurial competency- concept
- c. Developing Entrepreneurial competencies-requirement and understanding the process of entrepreneurship development, self awareness interpersonal skills creativity, assertiveness achievement factors affecting entrepreneur's role.

UNIT- IV

1. Launching and Organizing an Enterprise:

- a. Environment scanning information source, scheme of assistant problems.
- b. Enterprise selection market assessment enterprise feasibility study, SWOT analysis.
- c. Recourse mobilization finance, technology, raw material, site and manpower.
- d. Costing and marketing management and quality control.
- e. Feedback, monitoring and quality control.
- f. Feedback. Monitoring and evaluation.

UNIT- V

1. Growth Strategies:

- a. Performance appraisal and assessment.
- b. Profitability and control measure demand and challenges
- c. Need for diversification.
- d. Future growth- technique of expansion and diversification, vision strategies.

2. Enterprise Networking:

- a. Concept and dynamics
- b. Methods

c. Joint venture, co-ordination and feasibility study.

References:

- Kantikar, A. Grass roots Entrepreneurship, Entrepreneurs and Micro- Enterprise in Rural India, New Age International, New Delhi.
- Michel Armstrong, A handbook of management techniques Kogan page limited.
- SKG Sundaram; Entrepreneurship: A handbook for Beginners, SNDT Women's University Mumbai.

Paper: Textile Testing**Course Description:**

This course provides a comprehensive understanding of the principles, methods, and significance of textile testing and quality evaluation. It focuses on analyzing the physical, mechanical, and performance properties of textile fibers, yarns, and fabrics to determine their suitability for various end uses. Students will learn about sampling procedures, testing standards, atmospheric conditions for testing, and the use of modern instruments and techniques.

The course covers key testing parameters such as fiber fineness and maturity, yarn strength and twist, fabric weight, air permeability, stiffness, crease recovery, abrasion resistance, water repellence, tensile strength, and colorfastness. Emphasis is placed on interpreting test results, understanding quality control systems, and applying testing knowledge to improve textile performance and product quality. By the end of the course, students will be equipped to conduct standardized tests and ensure quality assurance in textile manufacturing and product development.

Course Objective:

- To develop and understand the method and technique used to analysis textile fiber yarns and fabric for end performance.
- To acquire knowledge and understanding of various structural properties of textile and relate them to end use fabrics performance and product.
- To familiarize student with the different testing equipment, their underlying principals and the international accepted standards, test method and the language and measurement.
- To be able analyze and interpret the result and predict the general textile behavior performance.
- To develop understanding of importance of quality control in testing.

Course Outcomes:

- a. Student will be able to analyze fiber/yarn/fabric properties for end performance.
- b. Student will get familiar with different testing equipments and their underlying principal.
- c. Student will get to know about different test method standard ASTM Standard, ISO Standard etc.
- d. Student will be able to understand the importance of quality control in textile testing.
- e. Student will be able to explain the care of textile items and interpret the meaning of different care labels with symbols.

Contents:**UNIT I****Introduction:**

- a. Importance and objective of textile testing and analysis.
- b. Use of statistics in handling data in the area of textile testing.
- c. Sampling procedures and selection of sample method of testing.
- d. Development of standard test method ISO series national and international organization involved in textile testing.
- e. Atmospheric condition for testing humidity and moisture and temperature, standard condition for testing.
- f. Unit of measurement and scales of testing,

UNIT II

Fibre Testing:

- a. Length, linear density, maturity, fiber fineness.

UNIT III

Yarn Testing:

- a. Yarn number or count single and lea strength, twist, evenness, crimp properties and measurement of crimp percentage.

UNIT IV

Fabric Testing:

- a. Length, width, thickness, weight per unit area and per unit length, fabric count, cover factor of fabric.
- b. Air permeability measurement of air permeability and fabric properties.
- c. Fabric stiffness handle and drape, Shirley stiffness tester, flexural rigidity, measurement of handle and drape.
- d. Appearance of retention, crease resistance, crease recovery, measurement of crease recovery, fabric characteristics affecting wrinkle resistance.
- e. Pilling of fabric pilling testing.
- f. Durability, serviceability, wear and abrasion resistance testing of abrasion resistance, abrasion testing instruments aesthetic of abrasion and wear.

- g.** Water and fabrics relationship, definition and methods of testing for water repellence, spray test boundation spray test and shrinkage testing for thread testing.
- h.** Tensile strength test- definition and terminology factors affecting the tensile properties of textile, different principals of tensile testing machine (CRT, CRE) single yarn strengths tester, bursting strength tester, tearing strength tester.
- i.** Comfort and related physical properties of textile- physical phenomenon affecting thermal comfort, evolution of textile properties related to comfort.

UNIT V

- a.** Safety aspects and protective properties of textile- flammability definition and terms. Factors affecting flammability, flame resistance and flame proof finishes on fabric flame resistance finishes and its toxicity, protective clothing.
- b.** Colourfastness: colour fastness to washing, perspiration, rubbing, sunlight, dry cleaning on gray scale.
- c.** Labeling and care of textiles.

References:

- Booth, J. E; principals of Textile Testing, Newness Butter Worth, London.
- John, H. Skinkle: Textile Testing, Brooklyn, New York
- Grover and Hamby: Handbook of Textile Testing and Quality Control, Wiles.
- Billie, J. Collier and Helen H. Eps: Textile Testing and Analysis, Prentice Hall, New Jersey.
- ISI Specification, BIS Specification
- ASTM Standards.

Paper: Textile Testing (Practical)**Course Description:**

This practical course is designed to provide hands-on experience in testing and evaluating the physical and mechanical properties of textile fibers, yarns, and fabrics. Students will learn to operate various textile testing instruments, perform standard testing procedures, and interpret results in accordance with national and international standards such as ASTM, ISO, and BIS.

The course covers practical experiments including fiber identification, fiber maturity and moisture content determination, yarn twist and count measurement, fabric weight and thickness analysis, crease recovery, drape, abrasion and pilling resistance, shrinkage, and colorfastness testing. Emphasis is placed on quality control, result interpretation, and understanding how textile properties influence end-use performance. By the end of the course, students will be able to evaluate textile quality effectively and apply testing knowledge in industrial, research, and product development contexts.

Course Objectives:

- To give knowledge about textile testing and quality control
- To develop and understand the method and technique used to analysis textile fiber yarns and fabric for end performance.
- To acquire knowledge and understanding of various structural properties of textile and relate them to end use fabrics performance and product.
- To familiarize student with the different testing equipment, their underlying principals and the international accepted standards, test method and the language and measurement.
- To be able analyse and interpret the result and predict the general textile behaviour performance.
- To develop understanding of importance of quality control in testing

Course Outcomes:

- a. Student will be able to analyze fiber/yarn/fabric properties for end performance.
- b. Student will get familiar with different testing equipments and their underlying principal.
- c. Student will get to know about different test method standard ASTM Standard, ISO Standard etc.
- d. Student will be able to understand the importance of quality control in textile testing.
- e. Student will be able to explain the care of textile items and interpret the meaning of different care labels with symbols.

Contents:

UNIT I

1. Fiber testing:

- a. Identification of Textile fibers
- b. Determination of Cotton fiber maturity
- c. Moisture content of different fibers

UNIT II

1. Yarn testing :

- a. To identify the twist in the given yarn and to determine the twist per inch
- b. Determination of yarn count using Beesley balance
- c. Determination of yarn count using Quadrant balance
- d. To determine Yarn evenness

UNIT III

1. Fabric Testing:

- a. To determine the Thread count/fabric count of different fabric samples
- b. GSM (weight per unit area) of different fabric samples
- c. Fabric thickness of different fabric samples

UNIT III

- a. Crease recovery of different fabric samples
- b. Bending length and Flexural rigidity of different fabric samples
- c. To determine the drapability of fabric

UNIT IV

- a. Abrasion resistance of fabric
- b. Pilling resistance of fabrics using ICI pilling box tester
- c. To determine the dimensional change (shrinkage) in the fabric

UNIT V

- a. Colour fastness of dyed textile materials to washing
- b. Colour fastness of dyed textile materials to rubbing
- c. Colour fastness of dyed textile materials to light
- d. Colour fastness of dyed textile materials to perspiration

References:

- Booth, J. E; principals of Textile Testing, Newness Butter Worth, London
- John, H. Skinkle: 1949 Textile Testing, Brooklyn, New York
- Grover and Hamby: Handbook of Textile Testing and Quality Control Wiles.
- Billie, J. Collier and Helen H. Eps: Textile Testing and Analysis, Prentice Hall, New Jersey.
- ISI Specification, BIS Specification
- ASTM Standards.
- Jinlian HU, 2008 Fabric Testing, Woodhead publishing limited, Cambridge England
- B.P Saville, 1999 Physical testing of textiles, Woodhead publishing limited,
- Dr. J.V. Rao, Quality Evaluation, Northern India Textile research Association,
- Dr. J.V. Rao & Vivewk Agarwal, 2006 Care Labeling, Northern India Textile research Association
- Dr. Alka Goel and Ruchikholiya, Textile Testing (a laboratory manual) GBPUA & T Pantnagar
- Samuel Russell Tortman, Edward Russell Tortman, 1932, Textile Analysis, C. Griffin, Limited
- P. Angappan, Textile Testing

Paper: Apparel Designing and Construction-II (Practical)

Course Description:

This advanced practical course focuses on enhancing students' skills in apparel design, construction, and product development. It provides hands-on experience in fabric and embellishment selection, color forecasting, and theme-based garment creation. Students will learn to plan and execute complete garment lines by integrating creative design concepts with technical construction techniques.

The course also includes components such as boutique and portfolio management, market surveys, and exposure to garment manufacturing processes through industry visits. Emphasis is placed on developing original designs tailored to specific markets and occasions, including casual wear, bridal wear, children's garments, and Indo-western ensembles. By the end of the course, students will be able to conceptualize, design, and construct professional-quality garments while understanding the practical aspects of apparel production and fashion business operations.

Course Objective:

- To enhance students' practical skills in advanced garment construction and product development.
- To train students in fabric selection, embellishment techniques, and application of color forecasting in apparel design.
- To enable students to design and construct theme-based garment collections for various occasions and target markets.
- To develop competencies in boutique setup, portfolio presentation, and management of fashion projects.
- To provide exposure to industrial garment manufacturing processes through market surveys and industry visits.
- To cultivate creativity, technical precision, and entrepreneurial skills necessary for professional apparel design practice.

Course Outcomes:

- Students will learn different types of garment construction techniques
- Students will learn boutique management and portfolio management strategies
- Students will have exposure to garment manufacturing unit
- Students will learn designing and construction of theme garment.

Contents:

UNIT I

1. Market Survey:

- a. Collection of various type of fabrics
- b. Collection of various type of embellishments
- c. Types of value addition on fabric.

UNIT II

1. Seasonal Colour Story and Colour Forecasting According to Season:

- a. Colour combinations-50 sample

UNIT III

1. Boutique Management:

- a. Window designing
- b. Investment and accounting

2. Portfolio Management:

- a. Portfolio to showcase the skills of the designer
- b. How to create a portfolio

UNIT IV

1. Visit to Garment Manufacturing Units:

UNIT V

1. Theme Garment-

- a. Developing line of garment based on a theme, Sketching, Designing, Sizing and Stitching
- b. Theme will be any one of the following-
 - Indo-western
 - Tradition Indian
 - Western
 - Bridal-wear
 - Children's garments
 - Evening wear
 - Nightwear
 - Casual wear

References:

- Armstrong, pattern making for Fashion Design
- Gioello and Berk; Figure Type and Size, Fair child publication, New York.
- BeenaAbling, Fashion Sketch book, Fair child publication, New York.
- Harrold and Barbara. The Technology of Clothing Manufacture, Oxford BSP Profession book, London.
- NatelleyBrey, Dress Fitting. Published by Blackwell
- Fiber, Fabric and Fashion- S. Srivastava, Central Publication, Allahabad.

Paper: CAD in Textile and Fashion-II (Practical)

Course Description:

This advanced practical course focuses on the application of computer-aided design (CAD) tools in the creation, development, and visualization of textile and fashion products. Students will learn to design and illustrate garments digitally using advanced features of fashion and garment CAD software, including 2D and 3D design techniques. The course covers pattern making, drafting, grading, and marker planning using specialized CAD tools to streamline the apparel production process.

Emphasis is placed on professional design practices, digital workflow efficiency, and integration of current fashion trends into design development. By the end of the course, students will be proficient in utilizing CAD technologies for designing, visualizing, and producing apparel collections that meet industry standards and market requirements.

Course Objective:

- To enhance students' proficiency in using advanced CAD software for textile and apparel design applications.
- To develop skills in digital pattern making, drafting, grading, and marker planning for efficient garment production.
- To train students in applying 2D and 3D design techniques to create industry-relevant fashion illustrations and product visualizations.
- To enable students to integrate current fashion trends and innovative design approaches into digital garment development.
- To prepare students for professional practice by combining creativity with technological expertise in the fashion design process.

Course Outcome:

- Design and develop fashion illustrations and apparel concepts using advanced CAD software.
- Apply digital tools for pattern making, drafting, grading, and marker planning with technical accuracy.
- Utilize 2D and 3D design techniques to visualize and present garment designs effectively.

- Integrate contemporary fashion trends and innovative ideas into digital apparel design and product development.
- Demonstrate industry-ready skills by creating professional digital portfolios and production-ready garment designs.

Content:

UNIT I

Advanced: In the advanced module students develop design with consistent with current fashion trends. Stress will be on professional techniques of garment construction utilizing computers.

UNIT II

1. Advance illustration Fashion CAD software:

- a. 3D technique in design development

UNIT III

1. Advance illustration Garment CAD software:

- a. Pattern making
- b. Drafting
- c. Marking
- d. Grading

UNIT IV

1. Application of Fashion CAD software in design development:

UNIT V

- **Application of Garment CAD software in pattern making:**

References:

- Veisainet, D.D. 1987 Computer Aided drafting design concept and application
- Fugii, D. Calour with stryle, Graphic-Sha Publishing company Ltd.
- Winifred, A. 1990 metric pattern cutting for men's wear: including Unisex casual clothes and CAD, BSI Profession at books Oxford.
- Carklin P.G. 1990 pattern clothing for womens clothes, the technology of sizing BSP professional books Oxford
- Aldrich, W 1994 CAD in clothing and textile Blackwell Sciences Ltd.

SEMESTER IV

Paper Code: HOM596

LTPC: 0-0-8-0

Paper: Scientific writing

Course Description:

This course is designed to equip students with the essential skills and techniques required for effective scientific communication and documentation. It covers various forms of scientific writing, including research articles, dissertations, monographs, bibliographies, and technical reports. Students will learn how to structure and organize research work, write clear and concise content, and present data accurately and objectively.

The course also includes training in report writing, CV and resume preparation, and drafting grant proposals with well-defined objectives, methodologies, and budgeting. Additionally, it introduces students to plagiarism detection tools and ethical writing practices. By the end of the course, students will be able to produce well-structured scientific documents that meet academic and professional standards in the field of textiles and apparel research.

Course Objectives

- To develop students' skills in writing clear, concise, and well-structured scientific documents such as research articles, dissertations, and reports.
- To familiarize students with the standard formats, components, and conventions of scientific writing.
- To train students in organizing and presenting research findings with clarity, objectivity, and academic rigor.
- To enable students to prepare effective CVs, resumes, and grant proposals with well-defined objectives, methodologies, and outcomes.
- To promote ethical writing practices by understanding plagiarism, citation standards, and the use of plagiarism detection tools.
- To build confidence in scientific communication for academic, professional, and research-oriented purposes.

Course Outcome

- Write clear, concise, and well-structured scientific documents, including research papers, reports, and dissertations.
- Prepare professional documents such as CVs, resumes, and grant proposals tailored to academic and research contexts.
- Demonstrate an understanding of ethical writing practices, including proper citation, referencing, and plagiarism avoidance.
- Communicate scientific ideas, data, and outcomes confidently and effectively to both academic and professional audiences.

UNIT I

1. **Scientific writing:** Introduction, Types, Characteristics of scientific writing, Articles, Chapter, Monographs, Dissertations, Bibliographies.
2. **Use and guidelines:** For drafting Titles, Heading, Sub heading, Tables, Illustrations, and Appendices.
3. **Parts of Dissertation/Research report/Article:** Introduction, Review of Literature, Method, Results and Discussion, Clarity, Validity and Objectivity during writing each of the above parts

UNIT II

1. Report Writing, CV and Resume making, plagiarism.
2. **Writing for Grants:** Question to be addressed, Rationale, Importance, Conceptualization, Pilot data, Clarity, Specificity of method, Budgeting, Outcome.
3. **Plagiarism:** Concept and Guidelines, Software's.

Reference Books

- Wren & Martin, High School English Grammar and Composition, S.Chand, Paperback, 2005
- Using English in Science & Technology, Singh, R.K., Prakash Book Depot, Bareilly, 2000.

Paper: Seminar**Course Description:**

This course is designed to enhance students' presentation, research, and communication skills through an in-depth exploration of advanced topics related to textiles and apparel designing. Students are required to select a specialized topic, conduct comprehensive literature reviews, analyze current trends, and present their findings in a structured seminar format.

The course encourages independent learning, critical thinking, and scholarly discussion while providing opportunities to engage with contemporary research and industry developments. By the end of the course, students will be able to present complex ideas clearly and confidently, demonstrating their ability to synthesize information and contribute to academic and professional conversations in the field of textiles and fashion.

Course Objectives

- To develop students' skills in researching, organizing, and presenting information on advanced topics related to textiles and apparel designing.
- To encourage independent learning, critical thinking, and analytical abilities through the exploration of current trends, research, and innovations.
- To enhance oral communication and presentation skills for effective dissemination of knowledge in academic and professional settings.
- To provide opportunities for students to engage in scholarly discussions and defend their viewpoints with clarity and confidence.
- To prepare students for future research, professional presentations, and participation in conferences or industry forums.

Course Outcome

- Conduct in-depth research and analyze advanced topics related to textiles and apparel designing.
- Organize and synthesize relevant information from various sources into a structured and coherent presentation.
- Deliver effective oral presentations with clarity, confidence, and professionalism.
- Engage in scholarly discussions, respond to questions, and defend ideas using critical thinking and evidence-based reasoning.
- Demonstrate readiness for professional conferences, academic seminars, and research dissemination in the field of textiles and fashion.

Content

- This paper will include a presentation on any advance topic related to Textile and Apparel Designing

Paper Code: HOM598

LTPC: 0-0-12-6

Paper: Dissertation

Course Description:

This course is designed to provide students with the opportunity to conduct independent research on a topic relevant to textiles and apparel designing. It involves identifying a research problem, reviewing literature, formulating objectives and hypotheses, designing and executing experiments or surveys, collecting and analyzing data, and presenting the findings in a structured dissertation format.

Through this process, students will develop critical thinking, analytical, and problem-solving skills while applying theoretical knowledge to real-world challenges. The dissertation encourages originality, academic rigor, and the application of appropriate research methodologies. By the end of the course, students will have produced a comprehensive research report that demonstrates their ability to contribute to the field through independent scholarly work.

Course objectives

- To enable students to undertake independent research on a relevant topic within the field of textiles and apparel designing.
- To develop skills in identifying research problems, formulating objectives, and designing appropriate research methodologies.
- To train students in data collection, analysis, interpretation, and presentation using scientific approaches.
- To enhance critical thinking, analytical reasoning, and problem-solving abilities through practical research experience.
- To encourage originality, academic rigor, and ethical practices in conducting and reporting research.
- To prepare students for future academic research, industry-based projects, or entrepreneurial ventures by integrating theoretical knowledge with practical application.

Course Outcomes

- Identify and define a relevant research problem in the field of textiles and apparel designing.

- Design and implement an appropriate research methodology, including data collection and analysis techniques.
- Critically review existing literature and integrate theoretical knowledge with practical research findings.
- Analyze and interpret research data to draw meaningful conclusions and propose evidence-based solutions.
- Prepare and present a comprehensive dissertation that meets academic and professional standards

Content

- This paper will include individual topic for practical, presentation & Report writing

Paper Code: HOM599

LTPC: 0-0-12-6

Paper: Summer Training

Course Description:

This course provides students with practical, real-world exposure to the textile and apparel industry through a three-month internship or training program. It aims to bridge the gap between academic learning and professional practice by allowing students to apply theoretical knowledge and technical skills in an industrial or organizational setting. During the training, students will observe and participate in various operations such as textile production, garment manufacturing, merchandising, quality control, and design development.

The experience helps students understand workplace dynamics, industrial workflows, and current trends in the textile and fashion sectors. By the end of the training, students will have gained valuable industry insights, enhanced their professional competencies, and developed the skills necessary for successful careers in textiles, apparel, and fashion-related fields.

Course Objectives

- To provide students with hands-on industrial exposure and practical experience in the textile and apparel sector.
- To enable students to apply theoretical knowledge and technical skills acquired during the course to real-world professional settings.

- To familiarize students with industry operations such as production, design, merchandising, quality control, and supply chain management.
- To develop professional competencies including teamwork, communication, problem-solving, and decision-making skills.
- To help students understand workplace dynamics, industry trends, and business practices essential for career development.
- To prepare students for future employment or entrepreneurship by enhancing their practical knowledge and industry readiness.

Course Outcomes

Upon successful completion of this course, students will be able to:

- Apply theoretical knowledge and technical skills to practical situations in textile and apparel industry settings.
- Demonstrate an understanding of industrial operations, workflows, and organizational structures.
- Analyze real-world challenges and propose effective solutions within professional contexts.
- Exhibit enhanced professional skills such as communication, teamwork, leadership, and time management.
- Evaluate industry trends, technologies, and best practices relevant to textiles, apparel, and fashion

Content

- Summer training will be of three months duration

