



# **TUMKUR UNIVERSITY**

## **B.Sc. (Fashion & Apparel Design) III & IV Semesters Syllabus**

**2025-26 onwards**

**B.Sc. FASHION AND APPAREL DESIGN**

**SEMESTER III**

CODE	Paper	Theory/ Practical	Teaching Hrs./week (L+T+P)	Duration of Exam (Hrs.)	Marks			CREDITS (L+T+P)
					IA	Exam	Total	
L1	Language I	Theory	4+0+0	3	20	80	100	3+0+0
L2	Language II	Theory	4+0+0	3	20	80	100	3+0+0
FAD 3.1 T	Textile Dyeing and Printing	Theory	4+0+0	3	20	80	100	4+0+0
FAD 3.1 P	Textile Dyeing and Printing	Practical	0+0+4	3	10	40	50	0+0+2
FAD 3.2 T	Fashion Art and Design	Theory	4+0+0	3	20	80	100	4+0+0
FAD 3.2 P	Fashion Art and Design	Practical	0+0+4	3	10	40	50	0+0+2
FAD 3.3 T	Pattern Making and Garment Construction-II	Theory	4+0+0	3	20	80	100	4+0+0
FAD 3.3 P	Pattern Making and Garment Construction-II	Practical	0+0+4	3	10	40	50	0+0+2
FAD 3.4 T E-1	A. Fashion Forecasting & Trend Analysis (or) B. Home Textiles	Theory	3+0+0	3	20	80	100	3+0+0
				Total	750			<b>27</b>

**SEMESTER IV**

CODE	Paper	Theory/ Practical	Teaching Hrs./week (L+T+P)	Duration of Exam (hrs.)	Marks			CREDITS (L+T+P)
					IA	Exam	Total	
L1	Language I	Theory	4+0+0	3	20	80	100	3+0+0
L2	Language II	Theory	4+0+0	3	20	80	100	3+0+0
FAD 4.1 T	History of Costumes and Traditional Textiles	Theory	4+0+0	3	20	80	100	4+0+0
FAD 4.1 P	History of Costumes and Traditional Textiles	Practical	0+0+4	3	10	40	50	0+0+2
FAD 4.2 T	Textile and Apparel Testing	Theory	4+0+0	3	20	80	100	4+0+0
FAD 4.2 P	Textile and Apparel Testing	Practical	0+0+4	3	10	40	50	0+0+2
FAD 4.3 T	Apparel Production	Theory	4+0+0	3	20	80	100	4+0+0
FAD 4.3 P	Apparel Production	Practical	0+0+4	3	10	40	50	0+0+2
FAD 4.4 T E-2	A. Boutique Management (or) B. Fashion Retail, Marketing and Merchandising	Theory	3+0+0	3	20	80	100	3+0+0
FAD 4.5 P (Practical /Skill)	Computer Aided Design	Practical	0+0+3	3	10	40	50	0+0+2
				Total	800			<b>29</b>

**III Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 3.1 T – Textile Dyeing and Printing (Theory)**

<b>FAD 3.1 T</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 4</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Explore the diverse applications and behavior of different classes of dyes on various textile substrates.
2. Understand the operation, mechanism, and usage of dyeing machines in textile material processing.
3. Select suitable dyes, chemicals, and print recipes for different textile printing techniques.
4. Apply various chemical and mechanical finishing treatments using appropriate finishing agents.
5. Integrate theoretical knowledge into practical applications in real-world textile dyeing, printing, and finishing scenarios.

<b>Unit-1</b>	<b>Hrs.</b>
Introduction to wet processing - Terminologies, sequence of wet processing operations for cotton, silk, wool, synthetic and blended fabrics. Preparatory and dyeing process of cellulosic fibers. - singeing, desizing, scouring, bleaching, mercerization - objectives, recipe, machinery used and the process. Preparation for silk - Degumming and bleaching of silk - objectives, recipe, machinery used and process. Preparation for wool - Scouring, carbonizing of wool - objectives, recipe, machinery used and process.	<b>15</b>
<b>Unit-2</b>	
Dyeing – Classification of Dyes, dyeing process using natural, direct, reactive, vat and Sulphur dyes. Dyeing process of cellulosic (Cotton) using reactive dyes and basic dyes and protein fibers (wool and silk) - using reactive and acid dyes. Dyeing of synthetic fibers using disperse dyes. Methods of dyeing – Fiber – stock, dope, Tow, Yarn - skein, package, beam, Fabric -beck, jig, jet, pad-batch/continuous, Piece/Union, Garment dyeing.	<b>15</b>
<b>Unit-3</b>	
Printing - Introduction, printing styles - direct style, discharge style and resist style. Methods - block, stencil, screen, roller, duplex, rotary, transfer printing, batik, tie and dye, digital printing. Minor printing methods - flocking, marbling, warp printing and air brush printing. Finishes – Introduction, importance, classification of finishes - permanent and temporary finishes, acid and alkali finishes. Basic or routine finishes - stiffening, calendaring, weighing, tentering, mercerization. Aesthetic finishes - special calendaring, moiré embossed surface, glazed finish, softening, crease resistant, shrinkage control and fading finishes. Functional finishes - Antimicrobial, antistatic, flame resistant, mothproof, water repellent, waterproof, and soil-release finishes.	<b>15</b>
<b>Unit-4</b>	
Clothing care and maintenance - stain removal - classification of Stains - protein, oil-based, dye or ink, grease, mud or dirt, combination stains and their removal methods, various solvents used. Soaps and detergents. Care of textiles & fabrics - principles of laundering, methods of washing - hand wash, machine wash and dry cleaning.	<b>15</b>

Environmental concerns and social responsibility - Introduction to environmental issues and control remedies for air pollution, water pollution, and solid waste pollution. Eco-friendly processing of textiles in the production of textiles. Corporate social responsibility in the textile industry.	
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References	
1.	Chakraborty, “Technology of Bleaching and Dyeing of Textile fibres”, Coxtown Publications-1972
2.	Carden, Susan. <i>Digital Textile Printing</i> . Bloomsbury Academic, 2015. ISBN-13: 978-1472535672
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7.	Murphy W S, “Textile Finishing”, Abhishek Publishing, 2007.
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11.	Smith J E, “Textile Processing - Printing, Dyeing”, Abhishek Publishing, 2003.
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**III Semester B.Sc.**  
**FAD 3.1 P - Textile Dyeing and Printing (Practical)**

<b>FAD 3.1 P</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 40</b>
<b>Number of Practical Credits: 2</b>	<b>Internal Assessment: 10</b>

<b>Unit – 1</b>	<b>Hrs.</b>
Preparatory process - Desizing, scouring, bleaching and mercerization of cotton yarn/ fabric Degumming and bleaching of silk yarn / fabric, scouring and bleaching of wool fiber/ yarn.	<b>16</b>
<b>Unit – 2</b>	
Dyeing of cellulosic yarn/ fabric by natural, direct, reactive and vat dyes. Dyeing of protein yarn/ fabric by natural, acid and reactive dyes.	<b>16</b>
<b>Unit – 3</b>	
Printing of fabric using block and screen using pigment, reactive and direct dyes. Resist style of dyeing /printing - tie and dye, shibori, batik.	<b>16</b>
<b>Unit – 4</b>	
Removal of oil, grease, blood, coffee and beverages stains	<b>12</b>

**III Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 3.2 T – Fashion Art and Design (Theory)**

<b>FAD 3.2 T</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 4</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Identify and apply various sources of inspiration and research methods to generate original design ideas.
2. Apply design principles and elements to develop cohesive design collections grouped by product category and themes.
3. Create traditional, digital, or mixed media scrapbooks to organize and document design research, inspirations, and development.
4. Apply market research techniques, including consumer behavior analysis, sales data evaluation, and trend analysis to forecast future design directions.
5. Promote sustainable fashion practices that address environmental, social, and economic concerns, fostering consumer awareness and demand for ethical fashion.

<b>Unit-1</b>	<b>Hrs.</b>
<p>Fashion Research - Introduction, types, and source of research for design collection. Inspiration for fashion designers. Introduction to concepts and process of fashion portfolio designing. Presentation boards - Definition and importance, types of boards - concept boards, product development, forecast and planning. Presentation techniques - preparation of portfolio for a design collection-inspiration, mood, color, client, texture and fabric swatch board, design collection board.</p> <p>Design Development - Groups, items, design elements, design principles, sketching ideas. Sample garment - The first pattern, the designer work sheet and line selection.</p> <p>Introduction to Scrapbook - History and evolution of scrapbook, Types of scrapbooks (traditional, digital, mixed media), Setting up a scrapbook workspace. Scrapbook Techniques and Tools - Adhesives, embellishments, and other materials, Photo editing and printing, Journaling and writing techniques.</p>	<b>15</b>
<b>Unit-2</b>	
<p>Fashion Forecasting- Introduction, objectives, importance, Theories, Elements and Principles of forecasting. Steps in forecasting, Major areas of forecasting, Advantages and limitations in forecasting, role of fashion forecaster, long- term and short-term forecasting. Fashion forecasting process - market research- consumer research, shopping, sales records, evaluating the collections. Fashion services and resources.</p> <p>Colour forecasting- steps in color forecasting - color forecast reports.</p> <p>Dimensions of color, psychology of colours – marketing, branding and consumers.</p>	<b>15</b>
<b>Unit-3</b>	

Designing garments based on figure types, garments to create optical illusion through elements and principles of design. Figure foreshortening and figure composition - its importance and application. Study of illustrative techniques - three dimensional views. Flat Sketch - Introduction, importance and application. Method of drawing, styling, sketching flats freehand and proportion for flats for women, men, and children.	<b>15</b>
<b>Unit-4</b>	

Sustainable Fashion Design - Introduction, definition, significance. principles of sustainable fashion design - designing for longevity and durability, timeless aesthetics vs. trend-driven fashion, minimalism in design and conscious consumption, designing for recyclability and biodegradability, up cycling and repurposed fashion design - creative reuse of dead stock and waste fabrics, DIY and handcrafting techniques for sustainability. Minimalist and functional fashion design - capsule wardrobe concept and slow fashion aesthetics, functional clothing with adaptive features, minimalist silhouettes to optimize fabric usage, transformable and multifunctional fashion design - convertible and multi-wear garments, detachable and interchangeable fashion elements. Clothing designed for various occasions and climates, adaptive fashion for sustainability and inclusivity. Benefits of sustainable fashion design - environmental benefits, social benefits, economic benefits, consumer awareness and market demand for sustainability.	<b>15</b>
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**III Semester B.Sc.  
FAD 3.2 P - Fashion Art and Design (Practical)**

<b>FAD 3.2 P</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 40</b>
<b>Number of Practical Credits: 2</b>	<b>Internal Assessment: 10</b>

<b>Unit – 1</b>	
Research design- Preparation of boards based on inspiration, mood, color, client, texture and fabric swatch boards based on current trend.	<b>16</b>
<b>Unit – 2</b>	
Elements and Principles of design in creating illusion in garment designing for following categories - children wear, women’s wear, men’s wear - evening wear, nightwear, summer wear, winter wear and party wear. Fashion illustration techniques and 3D views.	<b>16</b>
<b>Unit – 3</b>	
Foreshortening of figures, grouping of figures - thematic figure composition (Any 3). Flat sketch - sketching flats for women, men and children wear, croquis mixed with flats, portfolio flats, technical drawing.	<b>16</b>
<b>Unit – 4</b>	
High end rendering techniques- sketching ruffles, cascades, cowls, smocking, shirring, gathers, gores, pin tucks, dress and gown, bridal Wear. Rendering of luxe fabric – embroidered, lace, sequined tulle, fringed chiffon, appliqued Wool.	<b>12</b>

**III Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 3.3 T – Pattern Making and Garment Construction - II (Theory)**

<b>FAD 3.3 T</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 4</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Understand the application of flat pattern techniques in garment making
2. Acquire proficiency in fabric estimation and pattern layout
3. Develop the ability to assess and correct common fit issues in garments using appropriate fitting techniques.
4. Execute the knowledge of grading patterns.
5. Exhibit foundational knowledge in identifying specialized garments.

<b>Unit-1</b>	<b>Hrs.</b>
Introduction to flat pattern techniques, - dart manipulation techniques- single dart and double dart series - radiating, graduating and dart clusters and dart equivalents Pattern Layout - definitions, principles, types of layouts, importance of pattern layout. Fabric Estimation - definition, types of estimation, and its importance.	<b>15</b>
<b>Unit-2</b>	
Fitting - Introduction, principles of fitting, types of garments fit, standards for a good fit, E-fit, common fit issues and remedies. Fit considerations for various garments-dresses, pants, jackets, adapting fitting techniques for specific garment types. Fitting defects in garment – causes and remedies.	<b>15</b>
<b>Unit-3</b>	
Pattern alteration techniques - Introduction, principles, importance, methods of alteration techniques. Pivot, Slash and Spread method (length, width, front and back), modifying necklines and shoulders, sleeve, shirt, skirt, trousers- (alteration of crotch, waist, inseam and side seams). Grading - Introduction, definition, grading terminologies, principles, types, sizes, grade rules and points, manual and computerized grading, importance, advantages and disadvantages.	<b>15</b>
<b>Unit-4</b>	
Foundation garments- Introduction, design, fabric, trims and accessories. Types of fitting for men's innerwear briefs & trunk, swimwear, women's innerwear brassier, panties and swim wear. Sports wear and active wear- Introduction, design, fabric, garment fitting, materials used and types of sport wear for men and women.	<b>15</b>

<b>References</b>
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2. Gina Renee, “The Fitting Book”, 2020
3. Harper& Row “Vogue Sewing Book” Publishers New York 1982
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**III Semester B.Sc.**  
**FAD 3.3 P – Pattern Making and Garment Construction - II (Practical)**

<b>FAD 3.3 P</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 40</b>
<b>Number of Practical Credits: 2</b>	<b>Internal Assessment: 10</b>

<b>Unit – 1</b>	
Dart manipulation techniques- development of samples using pivotal and slash and spread method - single dart and double dart series - radiating, graduating and dart clusters and dart equivalent. Development of manual grading of patterns –children’s and women’s basic pattern set. (front, back, basic bodice, and sleeve pattern and skirt (front & back).	<b>12</b>
<b>Unit – 2</b>	
Designing and development of children’s wear with style features – design development, fabric estimation, pattern development, fabric layout construction details and costing. <ul style="list-style-type: none"> <li>● Waistline frock</li> <li>● Bifurcated garment.</li> </ul>	<b>16</b>
<b>Unit – 3</b>	
Designing and development of women casual wear with style features – design, fabric estimation, fabric layout and consumption, construction details and costing. <ul style="list-style-type: none"> <li>● Designer Choli</li> <li>● Salwar Kameez</li> </ul>	<b>16</b>
<b>Unit – 4</b>	
Designing and development of men’s casual wear with style features – design, fabric estimation, fabric layout and consumption, construction details and costing. <ul style="list-style-type: none"> <li>● Waist coat</li> <li>● Kurta and Pyjama</li> </ul>	<b>16</b>

**III Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 3.4 T E-1A – Fashion Forecasting & Trend Analysis (Theory)**

<b>FAD 3.4 T E-1A</b>	<b>Exam Hours: 3 Hrs.</b>
<b>Total Hrs.: 45</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 3</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Understand the role of color forecasting, fabric selection, and textile innovation in trend Forecasting.
2. Use different techniques and tools in forecasting trend analysis.
3. Predict future fashion trend and consumer behavior.
4. Create trend presentations to communicate insights effectively.
5. Implement forecasting insights into product development and collection planning.

<b>Unit-1</b>	<b>Hrs.</b>
<p>Fashion forecasting – introduction, types- long- term and short- term forecasting, role of fashion forecaster, direction of fashion change, forecasting with trend, seasonality and cycles, time series and trends, constant and linear pattern. role of internet in fashion forecasting.</p> <p>Trend forecasting - introduction, objectives, importance, theories, elements and principles of forecasting, steps in forecasting, major areas of forecasting, advantages, and limitations in forecasting.</p>	<b>15</b>
<b>Unit-2</b>	<b>Hrs.</b>
<p>Fashion forecasting process – activities- market research- consumer research, shopping, sales records, evaluating the collections- fashion trends, trends for target markets, colour forecasting, textile development and sales forecasting. fashion services and resources- collection reports, trend reports, consulting services, fashion editing, trade publications.</p> <p>Forecasting methods- subjective approach- qualitative methods, objective approach- quantitative methods. Fashion forecasting techniques- Delphi technique, scenario writing, subjective approach, time-series forecasting. forecast accuracy, forecast error measures.</p> <p>Colour forecasting- steps in colour forecasting - colour forecast reports. dimensions of colour, colours in marketing, consumers and the psychology of colours. forecasting with colour cycles, colour research - colour ideas and palettes.</p>	<b>15</b>
<b>Unit-3</b>	<b>Hrs.</b>
<p>Cultural and societal influences on fashion trends: cultural, social and economic factors influencing fashion, the impact of art, music, film, and subcultures on trends. case studies on global fashion trends and their origins.</p> <p>Innovation and trend: basic needs, drivers of change invention, design and innovation- product design. innovation spectrum-the four lenses of innovation- automaticity, innovation–incremental, radical and disruptive innovation and trends.</p> <p>AI tools in forecasting. Social responsibility &amp; sustainability related to fashion trends and forecasting.</p>	<b>15</b>

<b>References</b>
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**III Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 3.4 T E-1B – Home Textiles (Theory)**

<b>FAD 3.4 T E-1B</b>	<b>Exam Hours: 3 Hrs.</b>
<b>Total Hrs.: 45</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 3</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Identify emerging trends in home textiles and their influence on interior décor.
2. Perceive the role and importance of home textiles.
3. Design home textile products to meet consumer demands.
4. Select appropriate fabrics for home textile products.
5. Develop creative home textiles for interiors.

<b>Unit-1</b>	<b>Hrs.</b>
<p>Introduction to home textiles - types, factors influencing selection of home textiles, and recent trends in home textiles.</p> <p>Floor and wall coverings – types of floors covering –hard, soft, and resilient floor coverings- carpets and rugs - importance, uses, factors affecting selection of floor coverings, advantages and disadvantages, care and maintenance of floor coverings. wall Covering- definition, importance, uses, care and maintenance of wall coverings.</p> <p>Doors and window: parts of the door and window, curtains and draperies- definitions, materials used for curtains and draperies, importance, advantages and disadvantages, factors affecting selection of curtains and draperies.</p>	<b>15</b>
<b>Unit-2</b>	<b>Hrs</b>
<p>Window treatments: types of curtains – draw, tailored, pleated, cafe, three tier curtains, bamboo chicks and khus mats, blinds and its types, types of draperies- swag and valances. accessories- rods hook, rails, racks, curtain tape pins. Care and maintenance of curtains, draperies and its accessories.</p> <p>Soft furnishings for living room - introduction, types of soft furnishing, upholstery-sofa, sofa covers, cushion, cushion covers, floor cushion, upholsteries, bolster and bolster covers, uses, care and maintenance.</p> <p>Soft furnishings for bed linen - bed sheets, blankets, blanket covers, comfort, and comfort covers, bedspreads, mattress and mattress cover, pillow and pillow cover, pads, uses, care and maintenance.</p>	<b>15</b>
<b>Unit-3</b>	<b>Hrs</b>
<p>Soft furnishings for kitchen and dining - types of kitchen linens – kitchen towel, aprons, dish cloth, fridge, grinder and mixer cover, fridge holders –their uses, care and maintenance. Dining - types of dining table mat, runners, dish/pot holders, cutlery holder, fruit baskets, hand towels- uses, care and maintenance.</p> <p>Bathroom linens - types of fabric used- face towel, turkey towel, bath robe, floor mat, Shower curtains, uses, care and maintenance.</p> <p>Smart home textiles - introduction, recent developments in smart home textiles, applications, scope and future of smart textiles in global scenario.</p>	<b>15</b>

<b>References</b>
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**IV Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 4.1 T – History of Costumes and Traditional Textiles (Theory)**

<b>FAD 4.1 T</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 4</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Understand the History of traditional costumes and textiles and its influence on fashion.
2. Analyze and create textile patterns based on traditional designs and cultural symbolism
3. Understand the importance of Indian textiles and costumes.
4. Explore the influence of traditional textiles on modern clothing.
5. Appreciate the historical and contemporary relevance of textiles in global and Indian contexts.

<b>Unit-1</b>	<b>Hrs.</b>
<p>History of costumes - Introduction, beginning of costume - body decorations, body staining, tattooing, cutting and scarification, adoption of fibrous apparel, initial manufacturing of clothes.</p> <p>World textiles and costumes - Egyptian, Greek, Roman, Japanese - history, types, motifs and symbols, pre-historic textiles and costumes - social evidence, costume components for men, women and children, hair and headdress.</p> <p>French Revolution, French costumes, motif and symbols from Renaissance to 20th century. Textiles and costumes of Colonial, Victorian, Edwardian Era, WW I and WW II, factors influencing costume change - style, religion, location, climatic period and world affairs, youth in fashion, ted, mod, punk, hippie.</p>	<b>15</b>
<b>Unit-2</b>	
<p>Textiles and costumes of India- Introduction, history, types, motifs and symbols, prehistoric textiles, and costumes - costume components for men, women and children, hair, and hair dresses.</p> <p>Origin of clothing (dress) - Stone age, Neolithic age, Bronze age, Indus Valley Civilization, Vedic age, Middle Ages - Introduction, history, types, motifs and symbols, prehistoric textiles, and costumes. Costume components for men, women and children- hair, and hairdressers - Mauryan, Guptas, Satavahanas, Kushans &amp; Mughals.</p>	<b>15</b>
<b>Unit-3</b>	
<p>Hand woven textiles - sarees - Banaras Brocades, Baluchari, Jamdani, Dhaka Muslin, Himru, Amru, Tanchoi, Patola, Pochampalli, Paithani, Kanjeevaram, Chanderi, Maheshwari, Ilkal, Molakalmuru, Mysore silks, Kasuvu, Narayanpet, Gadwall, Mangalagiri, Uppada and Venkatagiri.</p> <p>Embroidered textiles- Kashmiri, Chikankari, Phulkari, Kantha, Parsi Gara, Zardozi and Ari. Shawls - Kashmir Shawls, Kullu &amp; Kinnaur Shawls. Wraps of north-east. Floor coverings - carpets, durries &amp; rugs.</p>	<b>15</b>
<b>Unit-4</b>	

Printed and painted textiles of India- Introduction, history, types of printed, dyed, and painted textiles of India. Colours, motifs, and techniques used in printed, dyed and painted. Indian traditional textiles. Printed textiles: Block prints - Bagru, Sanganer, Ajrakh. Painted textiles – Kalamkari, Warli, Madhubani, Pattachitra. Resist dyed textiles - Introduction, types, design used in Tie and Dye, Bandhej & Lehariya of Rajasthan. Ikat - Patola of Gujarat, Bandha of Odisha, Pochampalli of Andhra Pradesh.	<b>15</b>
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**FAD 4.1 P - History of Costumes and Traditional Textiles (Practical)**

<b>FAD 4.1 P</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 40</b>
<b>Number of Practical Credits: 2</b>	<b>Internal Assessment: 10</b>

<b>Unit – 1</b>	
Sketching of costumes (Men and Women) of Indus valley, Vedic, Mauryan, Kushans, Gupta and Mughal period. Egyptian, Greek, Roman, French and Japanese (2 Each). Contemporize any one (Indian & World)	<b>15</b>
<b>Unit – 2</b>	
Development of design - motif, design, pattern - combination of different motifs in a pattern, pattern arrangements. Base - ogee, diagonal, square, diamond, counter change and borders, concentric, corner, circular, and cylindrical. Repeats - drop repeat (full, 1/4, 1/2, 3/4 drop), brick repeat, mirror repeat (vertical and horizontal).	<b>15</b>
<b>Unit – 3</b>	
Sketching of traditional costumes and accessories for men and women– North India - Jammu & Kashmir, Punjab, Himachal Pradesh, Haryana, Madhya Pradesh, Uttarakhand, and Uttar Pradesh. South India – Tamil Nadu, Kerala, Karnataka, and Andhra Pradesh. Contemporize any one of the above.	<b>15</b>
<b>Unit – 4</b>	
Sketching of traditional costumes and accessories for men and women– East India – West Bengal, Bihar, Jharkhand, Arunachal Pradesh, Assam, Sikkim, Nagaland, and Manipur. West India – Rajasthan, Gujarat, Maharashtra, and Goa. Contemporize any one of the above.	<b>15</b>

**IV Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 4.2 T – Textile and Apparel Testing (Theory)**

<b>FAD 4.2 T</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 4</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Demonstrate a comprehensive understanding of standard procedures and protocols involved in textile testing.
2. Analyze testing methods for fiber, yarn, fabric, and garments to evaluate quality parameters.
3. Apply the working principles of textile testing equipment in various testing scenarios.
4. Execute correct procedures to test fabrics, trims, and garment accessories as per industry norms.
5. Evaluate global standards and certifications related to textile and apparel testing for industry compliance.

<b>Unit-1</b>	<b>Hrs.</b>
Introduction to textile testing, objectives. Sampling - types and its importance, Fiber - moisture and moisture relationship, moisture content and regain. Fiber maturity, fiber length, fiber fineness - objectives and determination. Yarn count- direct system and indirect system, its importance in fabric manufacturing. Yarn twist- determination of twist direction, and effects of twist on fabric properties. Yarn strength – single yarn strength, lea strength its objectives and determination.	<b>15</b>
<b>Unit-2</b>	
Fabric testing- fabric dimensions- length, width, thickness. determination of fabric weight - GSM measurement and its applications. cover factor. fabric shrinkage, testing fabric strength - terminology and definition - tensile strength, bursting strength, tear strength its objectives and determination. Terms related to textile testing – load, elongation, stress - strain curve, work of rupture, initial young's modulus, yield point.	<b>15</b>
<b>Unit-3</b>	
Fabric air permeability, fabric stiffness, drape co-efficient, crease resistance, abrasion resistance, pilling - objectives & determination Colour fastness to laundering, rubbing, light, ironing and perspiration.	<b>15</b>
<b>Unit-4</b>	
Tensile properties of seams and stitches, zipper test. Garment and garment accessories testing – testing of fusible interlinings, zippers, elastic waistband, sewing threads, buttons, snap fasteners and wear testing.	<b>15</b>

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**FAD 4.2 P – Textile and Apparel Testing (Practical)**

<b>FAD 4.2 P</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 40</b>
<b>Number of Practical Credits: 2</b>	<b>Internal Assessment: 10</b>

<b>Unit – 1</b>	<b>Hrs.</b>
Determination of geometrical properties of fabrics: thread count (EPI and PPI), yarn count, GSM, thickness, fabric cover factor, fabric crimp percentage.	<b>16</b>
<b>Unit – 2</b>	
Determination of fabric bending length and drape co-efficient. Determination of fabric tensile strength, tearing strength, abrasion resistance, and pilling resistance.	<b>20</b>
<b>Unit – 3</b>	
Determination of fabric crease recovery. Determination of fabric shrinkage, colour fastness to washing, rubbing test (crock meter), ironing and sunlight.	<b>16</b>
<b>Unit – 4</b>	
Visit to any commercial textile and apparel testing centre.	<b>8</b>

**IV Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 4.3T –Apparel Production (Theory)**

<b>FAD 4.3 T</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 4</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Understand various stages of garment production and their interdependency.
2. Understand workflow, production planning, and process control in the apparel industry.
3. Differentiate types of apparel manufacturing units and their operational structures.
4. Gain knowledge of apparel machinery used in garment manufacturing units.
5. Apply industrial engineering techniques to improve productivity in apparel manufacturing.

<b>Unit-1</b>	<b>Hrs.</b>
<p>Introduction to apparel industry – domestic and international market, apparel production process flow, sustainability and ethical practices in apparel manufacturing, fabric sourcing, testing and quality standards.</p> <p>Apparel pre-production process- sourcing- fabric and accessories, lead time in sourcing, sampling- types and its importance, pattern making: manual and CAD based, marker planning and marker efficiency, fabric spreading, fabric cutting techniques - manual and automated cutting, fusing and its importance in apparel manufacturing, types of fusible interlinings and their properties. Fusing methods, fusing machineries - flatbed and continuous fusing. Quality control in fusing.</p> <p>Apparel production planning &amp; management - production scheduling and workflow optimization, line balancing in apparel manufacturing, material requirement planning (MRP), supply chain management in apparel production.</p>	<b>15</b>
<b>Unit-2</b>	
<p>Industrial engineering in apparel manufacturing - Introduction and its importance. Work measurement techniques – time study, motion study, and method analysis. Introduction to lean manufacturing in apparel production. Productivity measurement, Standard Allowed Minute (SAM), Standard Minute Value (SMV).</p> <p>Apparel production machinery &amp; equipment- overview of machines used in apparel production, Industrial sewing machines: lockstitch, overlock, flatlock, button stitch, button hole, button fixing and bar tacking etc., sewing machine attachments- hemming, binding, elastic and gathering, zipper, piping and cording, quilting and decorative. maintenance and troubleshooting of apparel production machinery.</p> <p>Apparel production systems- types, Unit production system (UPS), Progressive bundle system (PBS), Modular production system (Team-Based), Lean production system.</p>	<b>15</b>
<b>Unit-3</b>	
<p>Apparel quality control &amp; assurance- quality standards and specifications, common defects in apparel manufacturing, inspection techniques: inline, end-line, and final inspections, Statistical Quality Control (SQC) in apparel production, compliance standards: ISO, AQL, and other industry standards.</p> <p>Apparel accessories and components- importance of accessories and components in</p>	<b>15</b>

apparel, types-functional and decorative components- support materials, fasteners, and closures, decorative accessories, functional accessories, labels - brand, size, care and hand tags, packing materials. Finishing and packing department – functions and activities of finishing and packing department in garment industry.	
<b>Unit-4</b>	
Apparel export procedures and documentation - definition of export and import. Export procedure, export documentation – documents related to goods, shipment, customs and clearance, payment methods in international trade- payment in advance, open account, letter of credit, documentary collections, aligned documentation system. incoterms in international trade, export promotion councils and their role (AEPC, TEXPROCIL, CEPC, HEPC, etc.). Export incentive schemes. ECGC, exim bank - its role in export promotion. Export- import policy - objectives, functions and features.	<b>15</b>

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### FAD 4.3 P – Apparel Production (Practical)

<b>FAD 4.3 P</b>	<b>Exam Hours: 03 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 40</b>
<b>Number of Practical Credits: 2</b>	<b>Internal Assessment: 10</b>

<b>Unit-1</b>	
Tech pack development & analysis - introduction to tech pack and its importance, components of a tech pack: technical sketches, spec sheet, measurement charts, seam details, construction details, BOM (Bill of Materials), stitching and finishing instructions. Analysis of tech pack: understanding specifications and requirements. development of tech pack for men's wear – (formal shirt & trouser), women's wear – (formal shirt & skirt) and children's – (shorts for boys and pinafore for girls)	<b>15</b>
<b>Unit 2</b>	
Stitches and seams as per ASTM Standards - classification of stitches as per ASTM D6193. Seams and seam finish according to ASTM standards. Practical exercises on different stitches and seam applications.	<b>15</b>
<b>Unit 3</b>	
Development of men's shirt & trouser. Pattern development and cutting techniques for men's shirts and trousers, sewing sequence and assembly techniques, fit analysis and finishing methods.	<b>15</b>
<b>Unit 4</b>	
Development of women's skirt & jacket. Understanding the structure and pattern of a women's jacket, sewing techniques for tailored garments, quality control and final evaluation.	<b>15</b>

**IV Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 4.4 T E-2A – Boutique Management (Theory)**

<b>FAD 4.4 T E-2A</b>	<b>Exam Hours: 3 Hrs.</b>
<b>Total Hrs.: 45</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 3</b>	<b>Internal Assessment: 20</b>

**Objectives**

**Course outcomes: On successful completion of the course, the students will be able to**

1. Identify different types of boutiques and their business models.
2. Formulate business plans, including budgeting, financing, and investment strategies.
3. Analyze market trends, consumer behavior, and target audience.
4. Demonstrate effective resource and material management techniques.
5. Establish and manage a boutique.

<b>Unit-1</b>	<b>Hrs.</b>
Introduction to Boutique management – definition, terminologies, management skills required to set up a boutique. Identifying the target market, customer, planning organizational structure of a boutique. Types of boutiques - based on market segment - low-end and high-end, based on ownership & brand structure - standalone and chain, based on product specialization – designer, ethnic wear, indo-western, bridal, and niche/sustainable boutiques.	<b>15</b>
<b>Unit-2</b>	<b>Hrs.</b>
Boutique essentials - choice of location, infrastructure requirement, design elements of the boutique, boutique interior, store layout, types of display - exterior display, interior display, tools for visual merchandising, signage props, mannequin fixtures, and lighting. Resource management and staffing in boutique: selection of generalists and specialists; Customer relationship management; manpower planning; performance management; employee relations.	<b>15</b>
<b>Unit-3</b>	<b>Hrs.</b>
Materials management in boutique - marketing tools and promotional kit, material sourcing, book keeping for boutique, and maintaining stock. Financial Management- project finance – cash control and cash flow analysis - managing and starting up the boutique business, boutique visit, and boutique project report. Case study on any four successful Indian boutiques.	<b>15</b>

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**IV Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 4.4 T E-2B – Fashion Retail, Marketing & Merchandising (Theory)**

<b>FAD 4.4 T E-2B</b>	<b>Exam Hours: 3 Hrs.</b>
<b>Total Hrs.: 45</b>	<b>Exam Marks: 80</b>
<b>Number of Theory Credits: 3</b>	<b>Internal Assessment: 20</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Understand the structure and evolution of the global and Indian fashion retail industry.
2. Apply marketing principles and consumer behavior theories to fashion retail scenarios.
3. Analyze merchandise planning, pricing strategies, and retail operations.
4. Develop an integrated retail strategy incorporating fashion marketing, merchandising, and store management principles.
5. Evaluate the role of branding, promotion, and visual merchandising in enhancing retail experience.

<b>Unit-1</b>	<b>Hrs.</b>
Fashion retail - introduction, evolution and types of fashion retail formats, fashion retail channels - offline, online, Omni channel. Retail business models: franchise, licensee, own brand, multi-brand. role of technology in retail transformation. Consumer behavior in fashion: understanding fashion consumers and buying motives, Fashion cycle and diffusion of innovation, market segmentation, targeting and positioning, consumer decision-making process.	<b>15</b>
<b>Unit-2</b>	<b>Hrs.</b>
Fashion marketing fundamentals - marketing mix (7Ps) in fashion, product lifecycle and positioning, brand management and image building, retail brand vs. product brand. Merchandise planning and buying - merchandise hierarchy: categories, assortments, seasonal buying, trend forecasting, and vendor management, pricing strategies in fashion - cost-based, value-based, competition-based, retail math basics - markup, markdown, inventory turnover.	<b>15</b>
<b>Unit-3</b>	<b>Hrs.</b>
Visual merchandising and retail promotion - Store layout, signage, and window displays, fixtures and planograms, in-store experience and ambience. Advertising, PR, influencer marketing, and social media in fashion. Retail operations and strategy - store operations: staffing, inventory control, loss prevention, customer service and loyalty programs, omni-channel retailing and e-commerce logistics, Digital marketing. Case study on retail business plan and strategy.	<b>15</b>

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**IV Semester**  
**B.Sc. Fashion and Apparel Design**  
**FAD 4.5 P – Computer Aided Design (Practical)**

<b>FAD 4.5 P</b>	<b>Exam Hours: 3 Hrs.</b>
<b>Total Hrs.: 60</b>	<b>Exam Marks: 40</b>
<b>Number of Practical Credits: 2</b>	<b>Internal Assessment: 10</b>

<b>Objectives</b>
<b>Course outcomes: On successful completion of the course, the students will be able to</b>
1. Understand the general process of design and the role of CAD in the fashion industry.
2. Identify and utilize essential tools in fashion design software
3. Utilize pattern drafting software (PDS) for layouts, grading and marking
4. Develop various fashion boards to enhance design visualization.
5. Develop textile and garment designs with digital techniques

<b>Unit-1</b>	<b>Hrs.</b>
Fashion design software – tools, enhancing images, masking, transform, working with layers, merging & blending layers, text effects. Creating advertising brochures, brand labels, care labels, logo designing, development of visiting cards, letterheads. Designing fashion accessories –necklaces, bracelets, anklets, earrings, and headgear.	<b>15</b>
<b>Unit-2</b>	
Motif development – symmetrical/asymmetrical, balanced/unbalanced, repeat patterns (Full drop, ½ drop, ¼ drop, ¾ drop, mirror H/V, drop reverse). Textile & garment design – design development for sarees with borders, pallu, all-over patterns, and men’s kurta with neckline, cuffs, and sleeves. (Any one sample to be printed on textiles).	<b>15</b>
<b>Unit-3</b>	
Flat Sketch development – design development of flat sketches with stitch specifications for children (A-line & yoke frock, shirts & shorts), adults (women’s tops, skirts, gowns, men’s shirts, kurta, trousers)	<b>15</b>
<b>Unit-4</b>	
Pattern drafting software (PDS) – tools, file management, measure, edit, view functions, point & notch functions, line functions, piece functions. Create garments for A-line frock, women’s shirt and men’s trouser. Grade the above patterns.	<b>15</b>

<b>References</b>
1. Ambrose, Gavin, and Paul Harris, "Basics Graphic Design 01: Approach and Language", AVA Publishing SA, 10 Nov. 2010, ISBN-10: 2940411352 / ISBN-13: 978-2940411351.
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**QUESTION PAPER PATTERN (Theory)**  
**III/IV Sem. B.Sc. Examination**  
**(2024-25 Onwards)**  
**FASHION & APPAREL DESIGN**  
**Paper code and Title of the paper**

**MAX MARKS-80**

**TIME: 3Hrs**

Instructions to the Candidates:

1. *All sections are compulsory*
2. *Illustrate wherever necessary*

**Section –A**

**I Answer any Ten of the following:**

**10X2=20**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.

**Section –B**

**II Answer any Five of the following:**

**5X4=20**

- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.

**Section –C**

**III Answer any Five of the following:**

**5X8=40**

- 20.
- 21.
- 22.
- 23.
- 24.
- 25.
- 26.

**QUESTION PAPER PATTERN (Practical)**  
**III/IV Sem. B.Sc. Examination**  
**(2024-25 Onwards)**  
**FASHION & APPAREL DESIGN**  
**Paper code and Title of the paper**

**MAX MARKS-40**

**TIME: 3 Hrs**

*Instructions to the Candidates:*

*1. All the questions are compulsory*

- |              |          |
|--------------|----------|
| 1.           | 10 Marks |
| 2.           | 10 Marks |
| 3.           | 05 Marks |
| 4. Record    | 10 Marks |
| 5. Viva Voce | 05 Marks |