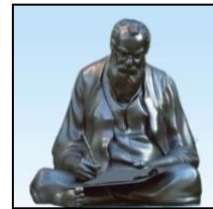


PERIYAR UNIVERSITY

Periyar Palkalai Nagar, Salem-636 011
State University – NAAC Reaccredited A++ Grade



School of Professional Studies

Department of Textiles and Apparel Design

Choice based credit system (CBCS) &
Outcome-based curriculum design (OBE)

M.SC. TEXTILES AND APPAREL DESIGN

Regulations and Syllabus (4.0)

2015-2016 (1.0); 2018-2019 (2.0); 2022-2023 (3.0) 2025-2026 (4.0)

(Effective from the academic year 2025-2026 and thereafter)

M.Sc. Textiles and Apparel Design

CBCS & OBE REGULATIONS AND SYLLABUS

(With effect from the academic year 2025-2026 onwards)

PREAMBLE

The department was established during the academic year 2014–2015. The Master of Science in Textiles and Apparel Design programme provides a distinctive curriculum that includes four specializations: Fashion Designing (FD), Apparel Export Manufacturing (AEM), Fashion Communication (FC), and Entrepreneurship Development (ED). The program is designed to achieve objectives that meet the current requirements of the industry. Students are adequately equipped to pursue higher education in Doctor of Philosophy, self-employment, teaching, and placement opportunities.

PROGRAMME OUTCOMES (POs)

1. To prepare graduates for a career in Textiles, Fashion, Apparel and Retail related Industries.
2. To provide strong research experience and expand the opportunity to opt for higher education and further research.
3. To enable graduates to create self-employment opportunities by equipping them with the necessary skills.
4. To impart understanding of the emerging themes in Textiles and Apparel Design.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Programme provides opportunities for students to achieve:

A. KNOWLEDGE AND UNDERSTANDING

A1. Recent Developments

Demonstrate an in-depth understanding of the current developments, advanced technologies and emerging issues in the domain of Fibre, Fabric, Processing, Apparel Design and Technical textiles.

A2. Standards Specifications, Testing and Quality Control

Delineate the product performance standards, testing methods, and quality control with emphasis on Apparel and Medical Textiles.

A3. Entrepreneurship Development

Apply the technical knowledge, fundamentals of Entrepreneurship, merchandising and sourcing in clothing export and retail.

A4. Research Aptitude

Execute Scientific and Design Research Projects.

B. PRACTICAL (SUBJECT SPECIFIC SKILLS)

B1. Digital Literacy

Use Corel Draw software, Adobe Photoshop, Adobe Illustrator for generating advanced graphics, designing garments, accessories and efficaciously use CAD software for Pattern making, grading and marker making.

B2. Fabric Structure Analysis and Textile Testing

Analyze textile materials (Woven and Knitted) and bestow its technical descriptions like Design, Draft and Peg plan, handle textile testing instruments and provide statistical interpretation of testing results of fibre, yarn, and fabric.

B3. Designing

- a. Creating or visualizing an idea and produce a design by draping techniques.
- b. Illustrating fashion using diverse drawing tools and mediums and conduct design research to create and develop fashion prototypes based on a theme or concept and prepare merchandising tech packs and cost sheets for Industrial production.

C. TRANSFERABLE SKILLS

C1. Entrepreneurship and Employment

- a. Ability to demonstrate, analyze and identify business opportunities.
- b. Ability to be robust in developing and sustaining a career-path including self-employment.
- c. Ability to recognize real work practice in the industry by undergoing short term internships.

C2. Information Retrieval

- a. Identify information for new developments from a range of sources and be up-to-date with the emerging trends in Textiles, Apparel and Fashion.
- b. Ability to recognize environmental issues and awareness of Ethical and Sustainability practices in the Textiles and Apparel Industry.

C3. Presentation

Capacity to exhibit using appropriate media for the target audience.

C4. Applying Subject Knowledge

Using discipline-specific knowledge in day-to-day situations.

C5. Teamwork and Communication skills

Communicate meticulously and concisely both verbally and in writing at the workplace.

GRADUATE ATTRIBUTES

Creative Skill

Graduates having skills of a creative designer shapes the creative style and quality of a designing department. They are responsible for the organizations' creative output and meet the quality standards and also fulfils customer's expectations thereby enhancing the reputation of the field.

Technical Skill

As a technical designer, the graduates strive to create clothing that satisfies the expectations of the customers and the mission of their brand. They develop and manage the technical specification of apparel prototypes, evaluate garments for quality, make recommendations for pattern improvements, assist and consult with factory pattern makers to develop new blocks and maintain documentations for all relevant data for production.

Communication Skills

Graduates have the ability to communicate design thinking concepts with professionals. Such soft skills help to write effective report.

Entrepreneurship Skills

As an entrepreneur, graduates are skilled in their planning, launch new designs, to discover new products, reveal potential opportunities and refractor their original business process and innovations. This is being passionate about design field study and business cases outside of designer's comfort zone.

Research skills

Researcher is the one who is able to function the process of collecting, analyzing and interpreting information to answer a question or solve a problem with a sustainable solution. A researcher should be interested in the field of work and a keen observer for in-depth information in the subject taken. A good researcher will have no prejudice or bias in his study about a problematic situation

DURATION OF THE PROGRAMME

Two years with four semesters.

ELIGIBILITY FOR ADMISSION

A pass in B. Sc Costume Design and Fashion, B.Sc. Textiles and Apparel Design, B. Sc Textiles and Fashion Design, B. Sc Fashion Technology, B. Sc Textiles and Clothing or any B. Sc Degree related to Textiles and Fashion Discipline. A Pass in B.Voc.Textiles and Apparel Design or any B. Voc Degree related to Textiles & Fashion is also eligible for Admission.

EXAMINATIONS

Semester pattern is followed. The examination for the Semester I and III will be held in November/December and for Semester II and IV will be in the month of April/May.

STRUCTURE OF THE PROGRAMME

COURSE COMPONENT	NUMBER OF COURSES	MARKS	CREDIT
I.Core Papers			
1. Theory	11	1100	40
2. Practical	04	400	12
3. Project Viva voce	01	200	06
II.Elective Courses			
a. Generic elective	02	200	04
b. Discipline specific elective (Choice based) Option-1: Fashion designing Option-2: Entrepreneurship development Option-3: Apparel export manufacturing Option-4: Fashion communication	04 (Each option 4 courses)	400	16
c. Non-Major elective Supportive & (MOOC/SWAYAM)	02	100	05
III.Skill enhancement course	03	300	09
IV.Experiential learning Internship	01	Highly Commended/ Commended	02
V.Value added Peace Education	01	-	02
VI.Extension activity	01	-	01
VII.Self-Learning Human rights	01	100	01
TOTAL	43	2800	98

Question Paper Pattern (Theory) Duration of the Examination - 03 hours Maximum Marks: 75 Marks		
Part A MCQ	Answer All Questions Each Units: 04 Questions Lower order thinking skills K1 – 02 Questions Lower order thinking skills K2 – 01 Question Middle order thinking skills K3 – 01 Question	20 x 1 = 20 marks
Part B Analytical	Answer any 3 out of 5 questions Each Units: 01 Question Higher order thinking skills K4 - All Questions	03 x 5 =15 marks
Part C Descriptive	Answer All Questions (Either or Choice) Each Units: 02 Questions Lower order thinking skills K2 – any one unit Middle order thinking skills K3 – any two units Higher order thinking skills K5 – any one unit Higher order thinking skills K6 – any one unit	05 x 8 = 40 marks

CURRICULUM FRAMEWORK AND SCHEME OF EXAMINATION

(Aligns with the State government -TANSCHÉ PG template and UGC Guidelines)

SEMESTER – I											
S.NO	COURSE CODE	COURSE TITLE	TOTAL HOURS				C	EXAM			
			H.W	L	T	P/F		AH	CIA	ESI	TO
CORE PAPERS (C) Theory (T) Practical (P)											
1.1	25UPTAD1C01	Core-I Technical textiles (T)	4	4	0	0	4	3	25	75	100
1.2 A	25UPTAD1C02	Core-II a. Indian textiles & apparel industry (T)	4	4	0	0	4	3	25	75	100
1.2 B	25UPTAD1C03	b. Apparel quality standards & implementation (T)	4	4	0	0	4	3	25	75	100
1.3 A	25UPTAD1C04	Core III a. Fabric structure analysis (P)	4	0	0	4	2	3	40	60	100
1.3 B	25UPTAD1C05	b. Advanced sewing (P)	5	0	1	4	3	4	40	60	100
Subtotal (a)			21				17				
ELECTIVE—I DISCIPLINE CENTRIC : LEVEL 1 (Choice Based: choose any one specialization and complete from Level 1 to Level 4)											
1.4	25UPTAD1D01 <i>Fashion designing</i>	Garment styling (T)	5	2	1	2	4	3	25	75	100
	25UPTAD1D02 <i>Entrepreneurship Development</i>	Textile business Start-Up (P)	5	0	3	2		3	40	60	100
	25UPTAD1D03 <i>Apparel Export Manufacturing</i>	Industrial engineering (T)	5	2	1	2		3	25	75	100
	25UPTAD1D04 <i>Fashion Communication</i>	Visual merchandising (T)	5	2	1	2		3	25	75	100
ELECTIVE -II GENERIC											
1.5	25UPTAD1G01	Fashion design and graphic visualization (T)	4	0	0	4	2	3	40	60	100
		SWAYAM REGISTRATION		0	0	0	0	0			
Subtotal(b)			09				6				
Total (a+b)			30				23				
EXPERIENTIAL LEARNING (EL)											
Industrial/Field Visits											

Note:- H.W- Hours/Week, L- Lecture, T-Tutorial/Demonstration, P- Practical, C- Credit, AH-Assessment hours, CIA – Continuous Internal Assessment, ESE – End Semester Examination, To – Total

SEMESTER – II											
S.NO	COURSE CODE	COURSE TITLE	TOTAL HOURS				C	EXAM			
			H.W	L	T	P/F		AH	CIA	ESE	TO
CORE PAPERS (C)											
2.1A	25UPTAD1C06	Core-IV a. Sustainable development for textiles (T)	4	4	0	0	4	3	25	75	100
2.1 B	25UPTAD1C07	b. Retail merchandising (T)	4	4	0	0	4	3	25	75	100
2.2	25UPTAD1C08	Core-V Advanced textile processing (T)	4	4	0	0	4	3	25	75	100
2.3	25UPTAD1C09	Core-VI Non-conventional natural fibers (T)	4	4	0	0	4	3	25	75	100
Subtotal (a)			16				16				
ELECTIVE -III DISCIPLINE CENTRIC : LEVEL 2											
2.4	25UPTAD1D05 <i>Fashion designing</i>	Design research (T)	5	2	1	2	4	3	25	75	100
	25UPTAD1D06 <i>Entrepreneurship Development</i>	Financial management (P)	5	0	3	2		3	40	60	100
	25UPTAD1D07 <i>Apparel Export Manufacturing</i>	Logistics (T)	5	2	1	2		3	25	75	100
	25UPTAD1D08 <i>Fashion Communication</i>	Fashion photography (P)	5	0	3	2		3	40	60	100
ELECTIVE -IV GENERIC											
2.5	25UPTAD1G02	Fashion illustration (P)	4	0	0	4	2	3	40	60	100
SKILL ENHANCEMENT COURSE 1 (SEC)											
2.6	25UPTAD1SE1	Fashion digital communication (P)	5	0	1	4	3	3	40	60	100
NON-MAJOR ELECTIVE -I (NME)											
2.7	25UPTAD1NM1	SELF STUDY Swayam/epgpathsala	0	0	0	0	2				
SELF LEARNING											
2.8		Human rights	0	0	0	0	1	3	25	75	100
INTERNSHIP (EXPERIENTIAL LEARNING)											
Career Exploration and Problem Identification for Research											
Summer internship (6 Weeks)			0	0	0	0	0	0	0	0	0
Subtotal (b)			14				12				
Total (a+b)			30				28	-			

Note:- H.W- Hours/Week, L- Lecture, T-Tutorial/Demonstration, P- Practical, C- Credit, AH-Assessment hours, CIA – Continuous Internal Assessment, ESE – End Semester Examination, To – Total

SEMESTER – III											
S.NO	COURSE CODE	COURSE TITLE	TOTAL HOURS				C	EXAM			
			H.W	L	T	P/F		AH	CIA	ESI	TO
CORE PAPERS (C)											
3.1	25UPTAD1C10	Core-VII Research methodology & statistics (T)	4	4	0	0	4	3	25	75	100
3.2	25UPTAD1C11	Core-VIII Textile testing (T)	4	4	0	0	4	3	25	75	100
3.3	25UPTAD1C12	Core-IX Standards & specifications for textiles (T)	4	4	0	0	4	3	25	75	100
3.4	25UPTAD1C13	Core- X (Industry module) 2D pattern making and 3D virtual garment designing (P)	5	0	1	4	3	3	40	60	100
Subtotal (a)			17				15				
ELECTIVE -III DISCIPLINE CENTRIC LEVEL 3											
3.5	25UPTAD1D09 <i>Fashion designing</i>	Professional design (P)	5	0	3	2	4	3	40	60	100
	25UPTAD1D10 <i>Entrepreneurship Development</i>	Clothing boutique Management (T)	5	2	1	2		3	25	75	100
	25UPTAD1D11 <i>Apparel Export Manufacturing</i>	Export merchandising (P)	5	0	3	2		3	40	60	100
	25UPTAD1D12 <i>Fashion Communication</i>	Digital marketing(P)	5	0	3	2		3	40	60	100
SKILL ENHANCEMENT COURSE 2 (SEC)											
3.6	25UPTAD1SE2	Textile testing (P)	5	0	1	4	3	3	40	60	100
NON-MAJOR ELECTIVE -II (NME) SUPPORTIVE COURSE (S) Can be chosen from Pool of papers offered by other departments) Exposure to unrelated discipline, enhancing proficiency skill											
3.7	25UPTAD1NM2	Hand embroidery (P)	3	0	1	2	2	3	40	60	100
EXPERIENTIAL LEARNING (EL) Industrial/Field Visits											
3.8	25UPTAD1AS01	Internship assessment- Viva Voce 6 weeks internship attended during second semester holidays	0	0	0	0	2	Commended /Highly Commended			
VALUE ADDED (VA)											
3.9		Peace education	0	0	0	0	2				
Subtotal (b)			13				13				
Total (a+b)			30				28	-			

Note:- H.W- Hours/Week, L- Lecture, T-Tutorial/Demonstration, P- Practical, C- Credit, AH-Assessment hours, CIA – Continuous Internal Assessment, ESE – End Semester Examination, To – Total

SEMESTER – IV											
S.NO	COURSE CODE	COURSE TITLE	TOTAL HOURS				C	EXAM			
			H.W	L	T	P/R		AH	CIA	ESE	TO
CORE PAPERS (C)											
4.1	25UPTAD1C14	Core- XI Systematic review of literature (P)	4	0	2	2	2	3	40	60	100
4.2	25UPTAD1C15	Core- XII Methodological framework for research (P)	4	0	0	4	2	3	40	60	100
PROJECT WITH VIVA VOCE											
4.3	25UPTAD1RP	Research project and viva Voce	12	0	0	12	6	-	150	50	200
		Subtotal (a)	20				10				
ELECTIVE VI (INDUSTRY/ENTREPRENEURSHIP) 20% Theory, 80% Practical											
LEVEL-4:											
4.4	25UPTAD1D13 <i>Fashion designing</i>	Draping, drafting, construction & fit analysis (P)	5	0	3	2	4	3	40	60	100
	25UPTAD1D14 <i>Entrepreneurship Development</i>	Intellectual property rights, branding and marketing (P)	5	0	3	2		3	40	60	100
	2a5UPTAD1D15 <i>Apparel Export Manufacturing</i>	Quality control in apparel industry (P)	5	0	3	2		3	40	60	100
	25UPTAD1D16 <i>Fashion Communication</i>	Branding (P)	5	0	3	2		3	40	60	100
SKILL ENHANCEMENT COURSE III (SEC)											
4.5	25UPTAD1SE3	Digital fashion design and motion graphics (P)	5	0	1	4	3				
EXTENSION ACTIVITY											
4.6	25UPTAD1EA1	Extension activities (1 week)	0	0	0	0	1	0	0	0	0
Subtotal (b)			5				4				
Total (a+b)			30				18				

Note:- H.W- Hours/Week, L- Lecture, T-Tutorial/Demonstration, P- Practical, C- Credit, AH-Assessment hours, CIA – Continuous Internal Assessment, ESE – End Semester Examination, To – Total

Note: C-Core Paper, E- Elective Paper, I- Internship, M – MOOC, S – Supportive

**SEMESTER-I
CORE PAPER -1
TECHNICAL TEXTILES (T)**

Course Code: 25UPTAD1C01	Marks: 100 marks Internal-25 External-75	
L:T:P 4:0:0	Course duration: 60 hrs	Credit:4

Course Description:

This course updates the students about the recent advancements in technical Textiles and latest fibres used, latest finishing methods, applications of geo textiles, home textiles, agro textiles, medical textiles, protective textiles, transportation textiles and smart and intelligent textiles.

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Recall the scope of Technical Textiles and latest fibres used in technical textiles	Cognitive Domain
CLO2	Differentiate the various finishing treatments and the method of application in technical textiles	
CLO3	Explain the fibres used, properties and functions of geotextiles, agrotexiles and home textiles	
CLO4	Discuss the fibres and fabrics used and their functions of medical and protective textiles	
CLO5	Categorize the fibres suitable for transportation textiles and applications of smart textiles.	

CONTENTS

UNIT- I: Technical textiles and fibres used

Introduction, definition and scope of technical textiles, milestones in the developments in fibres and applications of technical textiles - products and their uses.

Conventional fibers, High strength and high modulus organic fibers, High chemical- and combustion-resistant organic fibers, High performance inorganic fibers, Ultra- fine and novelty fibers.

UNIT- II: Finishing of technical textiles

Finishing of technical textiles: Mechanical finishes - calendaring, raising and cropping, compressive shrinkage and heat setting. Chemical processes- durable flame retardants, water repellent, antistatic, antimicrobial and antifungal finishes. Coatings- chemicals used in coating and method of applications.

UNIT- III: Agro , Geo and Home Textiles

Agro textiles – Introduction, need, fibres used for agro textiles, properties required for agro textiles, applications of agro textiles and their uses.

Geo-textiles – Introduction, fibres used in geo-textiles, Essential properties of geo-textiles, and functions of geo-textiles.

Home Textiles- fibres used, properties required for home textiles, applications of home textiles.

UNIT- IV: Medical textiles and protective textiles

Medical Textiles – Introduction, fibres used, speciality fibres used in medical textiles and applications of medical textiles - implantable materials, non-implantable materials, extra corporeal devices and hygiene and healthcare products.

Protective textiles - properties, raw materials or fibres used, characteristics of protective textiles and applications of protective textiles

UNIT- V: Transportation textiles and Smart textiles

Transportation textiles – fibres requirements for transportation textiles and car interiors – seat belts, tyre cords and airbags.

Smart textiles – components, Classification of smart textiles - gadgets used in smart textiles, Intelligent Textiles – phase change materials, shape memory polymers, chromic and conductive materials and their applications.

READING LISTS AND RESOURCES

Compulsory ★★

1. Handbook of Properties of Textile and Technical Fibers, edited by A. R. Bunsell, Woodhead Publishing Ltd
2. High-Performance Fibers, edited by J. W. S. Hearle, Woodhead Publishing Ltd
3. Structure and Properties of High-Performance Fibers, edited by Gajanan Bhat, Woodhead Publishing Ltd
4. Chemical Finishing of Textiles, By W D Schindler, P J Hauser, Woodhead Publishing Ltd
5. Textiles for Protection, edited by Richard A. Scott, Woodhead Publishing Ltd
6. Handbook of medical textiles by V.T.Bartels, Wood head publishing Ltd, 2011
7. Technical textiles by Gopalakrishnan D and P Vinayaga murthi, 2019, Daya Publishing House, New Delhi.

Highly Recommended, not Compulsory ★★

8. Handbook of Technical Textile, A.R. Horrocks and S.C. Anand, Woodhead Publishing Ltd, 2000
9. Wellington Sears Handbook of Industrial Textiles, Sabita Adanur, CRC Press,1995
10. Smart Fibres, Fabrics and Clothing: Fundamentals and Applications Xiaoming Tao Elsevier, 04-Oct-2001 - Technology & Engineering
11. An Introduction to healthcare and medical textiles by Wen Zhong, DES tec publications, Inc, 2013.

Good for Students who have Future Interests ★

12. <http://www.atjournal.com/>
13. http://en.wikipedia.org/wiki/Technical_textile
14. <https://www.textileschool.com>
15. <http://www.bch.in>
16. <http://www.bbc.co.uk/schools/gcsebitesize/design/textiles/productiontechniquesrev5.shtml>
17. http://textilelearner.blogspot.com/2011/03/description-of-textile-finishing_1796.html
18. http://texmin.nic.in/sites/default/files/scheme_technical_textile_070116.pdf
19. <http://www.indiantextilejournal.com/news/NewsLine.asp?id=1105>
20. <https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622>
21. <http://www.softtextile.biz/wwwsofttextilebiz/technical-textiles>
22. https://textinfo.files.wordpress.com/2012/10/handbook_of_technical_textile_.pdf
23. <http://scitechnol.com/textile-engineering/technical-textile.php>
24. <http://www.teonline.com/knowledge-centre/study-technical-textiles.html>
25. <http://technotex.gov.in>

SEMESTER-I CORE PAPER – 2(a) INDIAN TEXTILES AND APPAREL INDUSTRY (T)		
Course Code: 25UPTAD1C02	Marks: 100 marks Internal-25 External-75	
L:T:P 4:0:0	Course duration: 60 hrs	Credit:4
Course Description: This course updates the students about the recent advancements of Indian Textile and Apparel Industry, Notable Research accomplishments, Position of textile Clusters in India and trends in E-Commerce of textile and apparel business.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Describe the overview and growth, status and latest government policies and schemes to promote Indian Textile Industry	Cognitive Domain
CLO2	Identify the key markets, production and export potential of Indian Cotton and Silk Industry	
CLO3	Review the production, export opportunities and R&D in Jute and Wool Industry in India	
CLO4	Identify the performance of domestic and export market of textiles and clothing sector and demonstrate the registration process as a vendor in e-com Website	
CLO5	Interpret the product development and market avenues of non-woven textile industry and summarize the major initiatives taken by the clusters for the growth of Indian textiles and clothing Industry	

CONTENTS
UNIT- I: Outlook of Indian Textile & Apparel Industry Overview and Growth of Indian Textile Industry, Current position of textile industry in India, Vision India, Structure of Indian textile industry, India's major competitors in the world, challenges faced by textile industry in India, Latest government policies and schemes for promoting textile industry in India- National Textile policy, Skill India, TUFs, Mega Integrated Textile Regions and Parks Scheme (MITRA), Production - Linked Incentive (PLI) scheme for Textiles. Samarth-Scheme for capacity building in textile sector, One District One Product (ODOP) - State level support for indigenous textiles.
UNIT- II: Recent Progresses of Cotton and Sericulture Industry Cotton Textile Industry: Overview of cotton industry in India, Production, Area and Productivity, Cotton productivity Mission, Cotton consumption, Key markets and export destinations, Cotton Trade, Cotton

Corporation of India (CCI) - MSP operations, National Agriculture Market (eNAM) cotton trade digitization, Recent global trade issues affecting Indian cotton exports.

Sericulture Industry: Introduction, World silk production, Production and consumption of raw silk, Performance of sericulture sector, International collaborations in silk R&D, Silk Samagra, Silk Mark certification and branding.

UNIT- III: Recent Progresses of Jute and Woolen Industry

Jute and Jute Textile Industry: Raw jute scenario, production of raw jute goods, Domestic consumption of jute goods, Global position of India in jute production and export trends and major importing countries of jute goods, Status of jute diversified industry in India. Regulatory organizations in jute sector, Major areas of Research in jute sector, Role of National Jute Board (NJB) in industry promotion.

Woolen Industry: Industry-wise wool Production and consumption (apparel, defense, carpet etc), Wool producing states, Import and export of wool, Research and development, Role of Central Wool Development Board (CWDB) in industry support.

UNIT- IV: Recent Progresses of Manmade & Filament yarn and Textiles & Clothing Industry. Emerging trends in E-Commerce of Textile and Apparel Business

Manmade and Filament Yarn Industry: Growth and Development, Production, Import and Export performances.

Textiles and Clothing industry: Recent import scenario and export performance of Textiles and Ready-Made Garments (Woven and Knits), Foreign Direct Investment (FDI) in Indian textiles and clothing industry, Role of fashion weeks and trade fairs in promoting Indian textiles and clothing. Emerging Trends in E-Commerce of textile and apparel business, How to build own e-com website. Sustainability in fashion business, Ethical issues in online fashion business.

UNIT- V: Recent Progresses of Non-Woven Industry, Research Associations & Clusters

Textile Research Associations: ATIRA, BTRA, SITRA, NITRA, MANTRA, SASMIRA, IJIRA, WRA, AEPC.

Nonwoven: Recent Development in Indian nonwoven sector, Global Consumption of Non-woven, Market Potential and demand forecast in India, Growth Drivers of Non-woven and Market Overview.

Clusters: Definition, Cluster Concept, Policy framework for clusters in India, Cluster level infrastructure- Common facility centres, design studio and testing labs. Mega Handloom Clusters, Power loom mega clusters, Tirupur Knitwear Clusters, Ludhiana Knitwear and Apparel Clusters and Karur clusters. Case studies on textile clusters.

READING LISTS AND RESOURCES

Compulsory ★★ ★

1. India's Textile and Apparel Industry: Growth Potential and Trade and Investment Opportunities, By Sundar Shetty, (2001). U.S. International Trade Commission.
2. An Introduction to Sericulture, Ganga, G. (2019). Oxford & IBH Publishing Company.

3.	The Textile Industry in India, By Oberoi, Bindu., (2017). Oxford University Press
4.	An Introduction to Sericulture, Ganga, G. (2019), Oxford & IBH Publishing Co. Pvt. Ltd.
5.	Trends in E-Business, E-Services, and E-Commerce: Impact of Technology on Goods, Services, and Business Transactions: Impact of Technology on Goods, Services, and Business Transactions Edited by Lee, (2013). In IGI Global
6.	The Complete Book on Textile Processing and Silk Reeling Technology, By Panda, H. (2010). India: NIIR Project Consultancy Services.
Highly Recommended, not Compulsory ★★	
7.	Textile Industry of India and Pakistan, By Milan Sharma,(2006). APH Publishing
8.	Ministry of Textiles – Government of India Website: https://texmin.nic.in
9.	Fibre2Fashion – Industry Magazine and Resource Website: https://www.fibre2fashion.com
10.	Advances in Filament Yarn Spinning of Textiles and Polymers, edited by Dong Zhang,(2014).Elsevier.
Good for Students who have Future Interests ★	
11.	https://www.fashionatingworld.com/...2/manmade-fibers-present-huge-scope-for-india
12.	https://www.india.gov.in/development-mega-cluster-scheme-ministry-textiles
13.	www.csb.gov.in/silk-sericulture/silk/
14.	texmin.nic.in/about-us/textile-research-associations
15.	https://www.india.gov.in/development-mega-cluster-scheme-ministry-textiles
16.	www.indiantradeportal.in/vs.jsp?lang=1&id=0,30,50,206
17.	texmin.nic.in/sites/default/files/Note_Woollen_Sector_wwt_skbabbar_0.pdf
18.	https://www.ibef.org > Exports
19.	www.dcsmse.gov.in/clusters/clus/indsme.htm

SEMESTER-I CORE PAPER – 2(b) APPAREL QUALITY STANDARDS & IMPLEMENTATION (T)		
Course Code: 25UPTAD1C03	Marks: 100 marks Internal-25 External-75	
L:T:P 4:0:0	Course duration: 60 hrs	Credit:4
Course Description: This course offers an in-depth knowledge of the standards, management methods, and quality principles unique to the textile and clothing sector. It discusses national and international standards, eco-certifications, and compliance needs that are essential to the manufacture of sustainable textiles. Total Quality Management (TQM), Lean and Six Sigma approaches, and inspection methods specifically designed for the apparel industry are highlighted. In order to give students useful skills for quality assurance and control in the textile industry, the course also examines labelling requirements, garment quality testing, and real-world case studies.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Describe the key textile quality standards & QMS principles and recognize major international/national standards and eco-certifications	Cognitive Domain
CLO2	Determine the basic principles of TUV SUD and Social Accountability International (SA8000) Standards	
CLO3	Describes the Applications of Lean and Six Sigma tools to improve garment manufacturing processes by identification and elimination of waste using Lean techniques and metrics	
CLO4	Describe the Implementation of TQM and AQL for quality control in apparel production and understanding of inspections and TPM concepts with Industry 4.0 integration	
CLO5	Describe the durability characteristics of trims and test the garment quality and label Quality	

CONTENTS
UNIT- I: Textile and Apparel Quality Management: Standards, Compliance, and Eco-Certifications
Introduction to Quality and Quality Management System (QMS). International and national bodies for textile standards: ISO (9001, 14001, 45001), ASTM, AATCC, BS, BIS, JIS, DIN, Eco Mark, Bharat Standards. Technical committee for textiles under ISO:ISO/TC 38. EU compliance: CEN (European Committee for Standardization). Eco Certifications : Objectives and Adopted Brands, GOTS (Global

Organic Standards), OEKO-TEX, GRS (Global Recycled Standard), BCI (Better Cotton Initiative), Fair Trade certified, Bluesign, B corporation, 1% for the planet, Sustainable Apparel Coalition (SAC) and ZDHC MRL Compliance. Eco Specifications in Apparels. **ASTM:** ASTM Standards for Apparel, ASTM Standards for Body Measurement for Apparel Sizing, Chemical and Thermal properties of Textiles, ASTM Cotton Fiber Standards, ASTM Flammability tests, ASTM Standards for yarn and fiber. **AATCC:** AATCC Testing methods for color fastness to Acids, Alkalies, Crocking, Perspiration, Light, Dye and Pigment Migration, Aqueous Liquid Repellency, Water / Alcohol Solution Resistance.

UNIT- II: TUV SUD and Social Accountability International

TUV SUD – Technical guidance on Nickel, Organo tin Compounds, Alkyl phenol ethoxylates, Chlorinated Organic Carcinogens, and Restricted substance list from buyers. **Social Accountability International (SAI)** – SA8000 – Elements of SA8000 Standard – Child labour, Forced or Compulsory labour, Health and Safety, Freedom of Association and Right to Collective Bargaining, Discrimination, Disciplinary Actions, Working Hours, Remuneration, SA8000 Management System. **Certification Schemes** – REACH (EU regulation) and STEP (Sustainable textile production OEKO-TEX), Case studies of apparel brands and implementing SA 8000 and REACH.

UNIT- III: Lean and Six Sigma

Six Sigma: Definition, Core methodology: DMAIC Model, Applications in garment manufacturing, Tools used: SIPOC flow diagrams, Pareto charts, cause-effect diagrams, control charts, Statistical Process Control (SPC). **Lean management:** Introduction to Lean, Origin: Toyota Production System (TPS), Definition and principles of Lean, Importance in apparel, types of waste using MUDA (TIMWOOD:7 waste), Lean Tools and Techniques: 5S System, Kaizen, Kanban, Value Stream Mapping (VSM), Poka-Yoke, SMED. Lean metrics and implementation: Cycle time, Takt time, Lead time, First-pass yield and Right-first-time rate, Line balancing and bottleneck identification Visual management boards for daily tracking. Lean in garment production systems: Cutting, Sewing, Finishing and Inspection, Integration with Other Systems: Lean + Six Sigma, Lean + TQM, Lean + TPM.

UNIT- IV: Total Quality Management and Accepted Quality level

Total Quality Management (TQM): Implementation phases, 5'S system, Daily Work Management (DWM). AQL: What is AQL, AQL levels: 1.0, 1.5, 2.5, 4.0, 6.5, 10.0, Buyer-specific AQL mapping: Product type, product price and risk, Sampling plans and acceptance/rejection criteria. **Manufacturing of Readymade Garments (RMGs):** Defect analysis: Zero Defect, 3M's for approaching Zero Defects, Stage wise defect occurrence in RMG Production. **Total Productive Maintenance (TPM):** What is TPM, TPM Pillars-Autonomous maintenance, planned maintenance and quality maintenance. Digital TPM tools and technologies, Integration with Industry 4.0 technologies. **Inspection:** Fabric inspection: 4-point system and 10-point system (manual vs automated), Digital inspection systems, Traceability and ERP integration. Cutting Inspection: Cut panel Audit (manual vs automated), Laying Inspection (marker efficiency and waste reduction) Printing Inspection: Conventional vs. digital printing checks, Color and quality standards,

Automated print defect detection. Sewing Inspection – Inline and End line quality control, Real time defect analysis system. Finishing – In process and Final Inspection . Buyer Inspection - AQL standards and sustainability compliance. **Practical Exercises:** Case Studies: Real-world examples from Indian garment factories. Worksheets for identifying waste and proposing lean solutions, prepare work sheets – AQL charts, compare AQL level across brands.

UNIT- V: Garment Quality test and Labelling Parameters

Garment Quality tests for dimensions – Stitch quality, Seam quality. **Garment Accessories**– Basic, Decorative, Finishing, **Durability characteristics of Trims** – Resistance of Zippers, Buttons, Snaps, Buckles to abrasion, bursting and corrosion. **Labelling standards:** Labelling parameters, Eco – labelling. International care labelling system (ISO 3758) ,Regional standards : Europe: GINETEX system, Japan: JIS L0217, Canada: Textile Labelling Act, UK: British Standards BS EN ISO 3758 . Requirement Quality System (RQS) – Above 95%

READING LISTS AND RESOURCES

Compulsory ★★

1. ISO 9000 Quality Systems Handbook: Increasing the Quality of an Organization's Outputs, By Hoyle, D. (2018). United Kingdom: Routledge.
2. Apparel Manufacturing Technology, by D. Gopalakrishnan, P. Ganesan, and T. Karthik. (2016). CRC press, Taylor & Francis group
3. James Evans and William Lindsay, —An Introduction to Six Sigma and Process Improvement, SouthWestern College, 2014
4. Quality Assurance for Textiles and Apparel 2nd Edited by Sara J. Kadolph, (2007). Bloomsbury Academic,
5. Physical Testing of Textiles, By Saville, B.P, (1999). Elsevier Science.

Highly Recommended, not Compulsory ★★

6. Lean Six Sigma in Service: Applications and Case Sandra L. Furterer · 2016
7. Eco textiles: The Way Forward for Sustainable Development in Textiles, edited by M Mirafteb A. Richard Horrocks,(2007). Elsevier Science.
8. Garment Manufacturing Technology, edited by Rajkishore Nayak, Rajiv Padhye, (2015). Elsevier Science.
9. Supply Chain Safety Management: Security and Robustness in Logistics, edited by Michael Essig, Michael Hülsmann, Eva-Maria Kern, Stephan Klein-Schmeink, (2012). Germany: Springer Berlin Heidelberg.
10. Eco Fashion: Top-Labels entdecken die Grüne Mode, By Diekamp, K., Koch, W. (2010). Germany: Stiebner.
11. Fundamentals of Total Quality Management Jens, By J. Dahlgaard, Ghopal K. Khanji, Kai Kristensen Routledge, (2008).Taylor & Francis

Good for Students who have Future Interests ★

12. Terotechnology: 10th Conference on Terotechnology Radek, (2018).N.Materials Research Forum LLC

SEMESTER-I CORE PAPER – 3(a) FABRIC STRUCTURE ANALYSIS PRACTICAL (P)		
Course Code: 25UPTAD1C04	Marks: 100 marks Internal-40 External-60	
L: T:P 0:0:4	Course duration: 60 hrs	Credit:2
Course Description: This course offers opportunities for identification of fabrics structure, design draft of different Woven and knitted fabrics and help the student to acquire a useful range of skills in textile designing through exploration of different fabric structures and its applications.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Demonstrate fabric structure analysis for at least 10 samples: - Ends and Picks Per inch & Count of warp and weft by Pick Glass method for woven fabrics - Identification of crimp percentage for woven fabrics	Cognitive & Psychomotor Domain
CLO2	Complete design, draft and peg plan for any 10 basic and advanced woven fabric swatches	
CLO3	Identify the weft and warp knit design, Structure analysis for any 3 Basic Weft knitted swatches, Course, and Wales per inch by pick Glass method for Knit fabrics	
CLO4	Calculate count of yarn, GSM, and Loop length for any 2 knit fabrics with Three-way technique	

CONTENTS
UNIT-1 Analysis of Elementary weaves Analyse the given fabric swatch and furnish the following technical details. ➤ Basic Weaves: ☐ Plain Weave ☐ Matt Weave ☐ Twill Weave ☐ Satin Weave ☐ Sateen Weave ➤ Twill Derivatives: ☐ Herringbone Twill ☐ Pointed Twill ☐ Broken Twill ☐ Elongated Twill

➤ Satin Derivatives:

- ☐ Warp-faced satin
- ☐ Weft-faced satin

a) Design b) Draft c) Peg-plan d) Ends per inch (EPI) and Picks per inch (PPI) e) Yarn count (warp and weft) f) Grams per square meter (GSM) g) Crimp (warp & weft %)

UNIT- II: Analysis of Decorative/Fancy weaves

Analyse the given fabric swatch and furnish the following details.

Honeycomb weave, Huckaback weave, Crepe weave, Terry weave, Leno weave, backed cloth, Double cloth, Extra warp figuring weave, Extra weft figuring weave, Simple dobby, Jacquard designs.

a) Design b) Draft c) Peg-plan d) Ends and Picks per inch e) Count of warp and weft f) Grams per square meter (GSM) g) Crimp (warp & weft %)

UNIT- III: Analysis of Weft and Warp Knitted fabrics

Analyse the given fabric swatch and furnish the following details.

Weft Knitted fabrics: Single jersey Plain, 1 X 1 Rib, Interlock Pique, Purl Knit, Mesh Knits, Honeycomb, Flat back rib. Tuck and Miss Stitch Variants. Warp knitted fabrics: Raschel knit; Tricot knit

a) Design b) Needle set-out c) Loop length d) Courses and Wales per inch e) Count of yarn f) Grams per square meter (GSM)

UNIT- IV: Analysis of Three-way Techniques of Knit Fabrics

Analyse the given fabric swatch and furnish the following details.

Single jersey (3-way technique- Knit, Tuck, Float), Interlock (3-way technique- Knit, Tuck, Float)

a) Design b) Needle set-out c) Loop length d) Courses and Wales per inch e) Count of yarn f) Grams per square meter (GSM)

READING LISTS AND RESOURCES

Compulsory ★★

1. Fabric Structure and Analysis, By Gokernesan, N, (2009). New Age International Publishers
2. “Watson’s Textile Design and Colour”, Vol.1, Grosicki Z. J., (2004). Woodhead Publications, Cambridge England
3. “Knitting Technology”, Spencer D.J., II Edition., Textile Institute, (2001). Manchester
4. Fundamentals and Advances in Knitting Technology by J.K. Aswani, (2020), New Age International.

Highly Recommended, not Compulsory ★★

5. Woven Fabric Engineering Polona Dobnik DubrovskiBoD (2010). – Books on Demand
6. Knitting: Colour, structure and design Alison , (2013).Ellen Crowood
7. Specialist Yarn and Fabric Structures: Developments and Applications, (2011). R H Gong, Elsevier

Good for Students who have Future Interests ★

8. <https://www.textileadvisor.com> > 2018/11 > fabric-analyses
9. <https://www.textilebook.com> > Textile Design
10. <https://www.scribd.com> > doc > knitted-fabric-analysis-calculation
11. <https://www.researchgate.net> > publication > 277075606_Analysis_

SEMESTER-I CORE PAPER – 3(b) ADVANCED SEWING PRACTICAL (P)		
Course Code: 25UPTAD1C05	Marks: 100 marks Internal-40 External-60	
L:T:P 0:1:4	Course duration: 75 hrs	Credit:3
Course Description: This course covers skill and knowledge about the advance industrial machineries and operation techniques. Students learn to design and develop a creative product.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Demonstrate the operation techniques using special attachments.	Cognitive Domain/ Psychomotor domain
CLO2	Execute special sewing machines operating procedure.	
CLO3	Develop different types of home textile products.	
CLO4	Create a garment using footers and folders.	
CLO5	Design an apparel product with Zero waste techniques.	

CONTENTS	
UNIT-I: Operation techniques using Footers and Folders	
1. Sewing machine attachments 2. Static & dynamic 3. Horizontal guide attachments & Vertical guide attachments. 4. Folders 5. Piping folder 6. Sleeve attachments 7. Side attachments 8. Loop attachments & hemming attachments. 9. Footers 10. Double action footer 11. Gathering 12. Ruffles 13. Zipper	Operation techniques using footers and folders

14. Rolled hem 15. Right angle bias attachments 16. Single fold bias binder 17. Tape binder 18. Cord edge piping	
UNIT-II: Operation Techniques of Special Sewing Machines	
1. 3 Thread overlock machine 2. 4 Thread overlock machine 3. 5 Thread Over lock Machine with direct drive 4. Flatbed flatlock machine 5. Cylinder bed flat lock machine 6. Buttonhole machine 7. Button stitch machine 8. Bar tack machine 9. Edge trimmer 10. Double needle machine.	Threading, Operation of machine
UNIT- III: Sewing Home Textiles Products	
Construct Quilting bag, Mobile pouches, Chair covers, Curtains	
UNIT- IV: Creative wear	
Design and construct any one Creative wear using footers and folders.	
UNIT- V: Zero waste	
Create any one Product as Apparel with Zero waste Technique.	

READING LISTS AND RESOURCES	
Compulsory ★★ ★	
1.	Sew beautiful, quilted bags, Shibata, A. (2018). 28 Gorgeous projects using patchwork & applique.
2.	Fashion sewing: Introductory techniques, Amaden-Crawford, C. (2019). Bloomsbury Visual Arts.
3.	Introduction to Clothing Production Management (2nd ed.), Chuter, A. J. (1995). Blackwell Science.
4.	Engineering apparel fabrics and garments. Fan, J., & Hunter, L. (2009). Woodhead Publishing.
5.	Sewing with fabulous vintage fabrics. Franklin, A. (2006). Lark Books.
Highly Recommended, not Compulsory ★★ ★	
6.	Apparel manufacturing technology, Karthik, T., Ganesan, P., & Gopalakrishnan, D. (2020). CRC Press.
7.	How to sew: Techniques and projects for the complete beginner, Johns, S. (2013). Guild of Master Craftsman Publications.
8.	Quick and easy sewing with your serger: 15 Easy-sew projects that build skills, too, Hanson, B. (2008). Creative Publishing International.

SEMESTER-I ELECTIVE – I (DISCIPLINE CENTRIC): <i>FASHION DESIGNING (FD)</i> GARMENT STYLING (T)		
Course Code: 25UPTAD1D01	Marks: 100 marks Internal-25 External- 75	
L: T:P 2:1:2	Course duration: 75 hrs	Credit:4
Course Description: Studying garment styling allows you to explore it in greater depth, learn practical techniques, and specialize in an area of styling. Fashion details are identified by colour, silhouette, fabrics, and patterns. It is important that stylists can identify and describe the many different styles of clothes and accessories, as well as the different parts of a garment.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Explain the categories of fashion, the terminology of garments, and draw technical sketches.	Cognitive Domain/ Psychomotor domain
CLO2	Describe design elements and principles; create various silhouettes and design details	
CLO3	Describe the various garment shaping devices and style variables.	
CLO4	Apply the correct use of fabric and printing techniques in styling.	
CLO5	Design garments by applying color principles and techniques.	

CONTENTS
UNIT- I: Categories of fashion and technical design terms and technical sketches 1. Fashion Categories & size ranges: Tabulate basic categories and size ranges for: Women's apparel, Men's apparel and Children's apparel 2. Garment Terminology: Identify key parts of Shirt, dress, jacket, pants, and hats 3. Sketching & Specification: Types of sketches: Personal, fashion, floats, flats, Define and compare technical sketch, float, and flat, Create a technical sketch of a shirt with correct font size and line weights 4. Drawing to Scale of technical sketch (flats): Understand scales: 1:8, 1:4, 1:1 and their applications 5. Hand-draw flat sketches of: Women's tank top, Men's long sleeve knit shirt and Pants Include stitch details, side views, imaginary positions, and inside views UNIT- II : Elements and Principles of Design, Silhouettes & Design details related to silhouettes 1. Elements &Principles of Design 2. Silhouettes: Define and draw the silhouettes I. By Waist Position: Sheath, empire, high waist, dropped waist, chemise

- II. By Shape: Trapeze or tent, tunic and skirt jumper, princess, baby doll, surplice
 - III. By Design Detail: Shirt waist, coatdress, slip dress, peasant, cheongsam, caftan
 - IV. Skirt Shapes: straight skirt, gored skirt, sarong skirt, dirndl skirt, pegged skirt, pouf skirt, culotte, trumpet skirt, peasant or gypsy skirt, hobble skirt, gathered flared skirt
 - V. By Length: Skirt and pant outlines with length variations
 - VI. Pant Styles: Bell bottoms, drawstring, active, trouser, knickers
 - VII. Overalls & Bottoms: Bib, paper bag waist, palazzo, harem, jodhpurs, dhoti, gaucho
 - VIII. Women's Underwear: Full brief, high cut, boy cut, bikini, string bikini, thong
 - IX. Brassiere Styles: Bra parts and style variations
- 3. Design Details related to silhouette of garment:**
- 1. Sleeve and cuff: Definitions and Illustrations:**
 - I. Set-in sleeves by cap height (high, medium, no cap height)
 - II. Short sleeve variations: cap, tulip, puff, lantern, flutter, cuff, pinafore
 - III. Long sleeve variations: tailored (French cuff), gathered, bishop, bell, leg o' mutton, Juliet, peasant
 - IV. Outerwear sleeve variations: knit cuff, rugged cuff, trench coat, motorcycle, polo and tailored overcoat
 - V. Raglan sleeve: Straight seam, shaped seam, saddle
 - VI. Kimono and dolman: kimono with gusset, dolman batwing and dolman variations
 - 2. Necklines: Definitions and Diagrams:**
 - I. Neckline shapes: square, crew, keyhole, V-neck, scoop, sweetheart, ballet, bateau, cowl, halter, one-shoulder, asymmetrical, peasant, decollete, built-up
 - II. Technical drawings/specs for neckline designs
 - 3. Collars: Definitions and Drawings:**
 - I. Collar styles: polo, mock turtleneck, Henley, tailored shirt, convertible (open/closed), wing, mandarin, Peter Pan, bow, Johnny, cascade bertha, sailor, shawl
 - II. Technical aspects: lapel styles (peak, fish mouth, double breasted, round peak, clover), shawl collar and variations (scalloped, notched, revere)
 - 4. Pockets: Definitions and Types:**
 - I. Patch, single welt, seam-to-seam, and on-seam pockets

UNIT- III: Styles, lines, details for shape & fit Style variables and characteristics

1. Garment shaping devices:

- I. Darts: Role of single/double-pointed darts in fit; technical aspects and bodice dart illustration.
- II. Pleats: Uses and types (knife, box, inverted, cluster, accordion, crystal, sunburst); straight, contoured, tapered, and placement variations (side, action, style, kick pleats).
- III. Draw pleat types and estimate fabric needed.

- IV. Gathers: Styling with gathers; illustrate gathers on bodice and bottoms.
- V. Easing: Easing in tailored garments; illustrate typical placement.
- VI. Elastics, Drawcords, Lacing:
- VII. Application as shaping devices; illustrate usage
- VIII. Seam Shaping: Define and illustrate princess seams, gores (4, 6, 10-gore), yoke and godet variations, gussets (bodice/pants), slits, and vents.
- IX. Design Practice: Create 12 top designs mixing various shaping devices.

2. Style variables and characteristics: Give details and illustrate.

- I. Tops: Tee, Henley, Polo, Tank, Camisole, Racerback, Sports Bra, Double Layer Tee, Trapeze Tee, Tee Dress, Sweatshirt, Hoodie, Thermal Fleece Layer.
- II. Shirts & Blouses: Shirt, Tuxedo Shirt, Western, Blouse, Shell, Peasant Blouse, Camp Shirt, Tunic, Surplice Wrap Top.
- III. Dresses: Sheath, A-Line, Princess, Empire, Dropped Waist, Fit & Flare, Tent/Trapeze, Strapless, Shift, Wedge, Shirtwaist, Shirt Dress, Coat Dress, Maxi.
- IV. Skirts: Straight, Pegged, A-Line, Dirndl, Flare, Circle, Yoke, Kilt, Sunburst/Knife/Box/Inverted Pleats, Culotte, Gored, Wrap, Trumpet, Tiered/Peasant, Hi-Low, Handkerchief, Sarong, Gaucho.
- V. Pants: Flat Front, Pleated, Wide/Flared, Cigarette, Tuxedo, Capri, Ochy, 5-Pocket Jean, Bootcut/Stovepipe, Bell Bottoms, Elephant Leg, Cut-off, Stirrup, Legging, Yoga, Biker Short, Sweat pant, Wrapped Leg, Palazzo, Harem, Dhoti, Jodhpur, Jegging, Sailor, Cargo, Bib Overall.

UNIT- IV: Fabrics, Dyeing and Printed techniques

1.Fabrics

- I. Usage, Terminology & Cutting Techniques
- II. Introduction
- III. Understand fabric importance in apparel
- IV. Explore "hand" and "hand sample"
- V. Learn how yarn size affects fabric texture and performance

2.Woven Fabric Terminology

- I. Identify lengthwise grain, crosswise grain, selvedge, bias, true bias
- II. Exercise: Draw bias-cut areas on a garment (e.g., neckline, hem, sleeve)
- III. Exercise: Show bias trims and explain off-grain issues (bowed/skewed fabric)
- IV. Compare fabric weights and select suitable fabric for a shirt vs. jacket

3.Knits and Jersey Construction

- I. Define weft knit, jersey, rib, interlock
- II. Exercise: List types of knits and identify common defects (laddering, curling)
- III. Compare stretch and recovery in different knit samples

4.Fabric Layout & Pattern Matching

Fabric layout, making markers, Plaid and pattern matching, matching even plaids, matching uneven plaids, cutting instructions matching plaids for some areas of garments

5. Technical Cutting Aspects

Cost solution for a patch pocket, Directional fabrics, Diagonal weave, Directional prints, Styles with flare, Fabrics with large motifs, engineered prints, Nap or pile, nap up for all units, Nap down for all units, Nap either way for all units, Stripes

6. Fabric Drape & Embellishment

Develop the understanding of different fabrics and how it drapes embellished or embroidered fabrics.

7. Prints

- I. Popular Printing techniques: Screen Printing, Digital Printing techniques, Foil Printing
- II. List the current print patterns by visiting e.com portal of fabric suppliers
- III. Traditional dyeing and printing techniques: Methods, techniques, application, colours and motifs used.
- IV. Pigment painted textiles - Patachitra of Odisha, Chitrapata of Telangana, Patachitra of Ahmedabad, Jain pata of Gujarat, vasanta vilasa of western India, Pichhawai of Rajasthan, Phad of Rajasthan.
- V. Mordant Painted textiles- Kalamkari of Srikalahasti, Kodali karuppur of Tamil Nadu, Matai-ni-pachhedi of Ahmedabad, Kanat of Golconda of Telangana, Kalamkari of Masulipatnam, Kalamkari of Srikalahasti.
- VI. Printed textile Practices – Bagru, Sanganer and Khari of Rajasthan, Ajrakh, Rogan, Saudagiri, Mud, Khari of Gujarat, Bagh and Khari of Madhya Pradesh.
- VII. Resist dyed textiles- Fabric: Laheriya, Mothra, Bhopalshahi, Bandhani/ Bandhej.
- VIII. Yarn resistant textiles – Patola and Mashru of Gujarat, Pochampalli of Telangana, Telia Rumaal of Andhra Pradesh, Bandhas of Odisha

UNIT- V: Colour and styling techniques

1. Colour:

- I. Colour wheel (primary colours, secondary colours, tertiary colours), additive colour system, subtractive system, CMYK colour system, PMS system and RGB system
- II. Characteristics of colour : Hue, value, saturation, tint, tone, Shade, mute, fluorescent, warm, cool, neutral.
- III. Positive and negative factors of Primary, secondary and neutral colours
- IV. Colour harmony: Complementary, split complementary, double complementary, near complement, double complement, analogous, triadic, tetradic and monochromatic, accented neutral.
- V. Rules for building the colour palette
- VI. Combining colours: Build colour schemes with hues of 12 step colour wheel.
- VII. The power of contrast: explore the seven types of contrast

- VIII. Colour composition: Proportion and saturation, Principles of figure and ground, Symmetry: symmetrical balance, Radial balance, Approximate symmetry, Asymmetrical balance
- IX. Colour and colour ways: Considering various tones and saturations within one colour, experimenting with different textures of hue.
- X. Seasonal colour palette, developing colour palette to give more options
- XI. Colour proportions: contrast of quantity, contrast of saturation, contrast of value, contrast of neutral and chroma, contrast of temperature

2. Define the terms and illustrate the styling techniques on a silhouette

Concepts of Line in designing, Designing with bias, Blocking, Draping, Negative shapes, Volume, Transparency, layers, directions, symmetry, asymmetry, contrast, direction, embellishments, movement, motifs, Four seasons: A timeline, De construct and reconstruct, reshape and reconfigure, resurface, A cut above, Fringe and fray, drawing the eye, Puzzles and missing links and symbols.

READING LISTS AND RESOURCES

Compulsory ★★

1. Technical source book for Apparel Designers, 3rd Edition, Jaeil Lee, Camille Steen
2. Beyond design: The synergy of Apparel Product development
3. Colour design workbook
4. Basics Fashion Design 02: Textiles and Fashion, By Jenny Udale, (2008)
5. The Colour Bible, The Definitive Guide to Colour in Art and Design by Laura Perryman, (2021)
6. Language of fashion
7. Dynamics of fashion

Highly Recommended, not Compulsory ★★

8. <https://fabriclore.com>
9. <https://www.matkatus.com>
10. <https://sourceitright.com>
11. <https://akrithi.com>
12. <https://fabcurate.com/>
13. <https://www.moodfabrics.com>
14. <https://www.etsy.com>

Good for Students who have Future Interests ★

15. The Fashion Design Reference & Specification Book, Everything Fashion Designers Need to Know Every Day, By Jay Calderin, Laura Volpintesta, (2013).
16. Fashion Design Course, By Steven Faerm, (2022)

SEMESTER-I		
ELECTIVE – I (DISCIPLINE CENTRIC): <i>ENTREPRENEURSHIP DEVELOPMENT (ED)</i>		
TEXTILE BUSINESS STARTUP (P)		
Course Code: 25UPTAD1D02	Marks: 100 marks Internal-40 External-60	
L: T:P 0:3:2	Course duration: 75 hrs	Credit:4
Course Description: Start-up Practice enlighten on how to assess an idea in the background of a Textiles and Apparel Design. The learners will understand ideation process; market analysis, legal structures and creating business plan		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Describe the fundamentals of start-up such as terminologies, creativity & innovation	Cognitive Domain/ Psychomotor domain
CLO2	Complete the ideation process for start- up	
CLO3	Perform idea assessment and able to pitch the idea	
CLO4	Demonstrate the registration process of start-up	
CLO5	Write business plan, know the funding agencies	

CONTENTS
UNIT- I: Fundamentals of Start-up, Creativity and Innovation
1. Entrepreneurial Mind, Entrepreneurial Mindset: Business vs Employee Vs Entrepreneur Vs Self-employment and Entrepreneurial competencies 2. Startup terminologies, Startup risk, Startup process 3. Creativity and Innovation: What is creativity and who is creative, Innovation: Types of innovation, how to know you are innovating and Driving force of innovation.
UNIT- II: Idea identification
1. How to identify idea and generate start up ideas 2. Sources of idea 3. Business opportunity Dos and Don'ts, how to identify right business opportunity 4. Understand BCG matrix 5. Idea validation checklist: Product market pyramid, assess risk/value Assess user need/satisfaction 6. Business model canvas and Value proposition canvas

UNIT- III: Idea Assessment and Pitching the idea

1. Test ideas
2. Problem validation and discovery: Evaluate the customer motivation and commitment
3. Identifying target segment and market sizing
 - Understand your target segment
 - Sizing the market
 - Analyzing the environment and competitive advantage
 - Feasibility analysis
4. Pitch deck for Textile Start ups

UNIT- IV: Legal structures

1. Choosing the right legal structure:
 - Sole proprietorship, Private Limited company, Limited Liability Partnership, General Partnership, Advantages
 - Registration process of Sole proprietorship, Private Limited company, Limited Liability Partnership, General Partnership
 - Introduction to permits, registrations, and compliances

UNIT- Business Plan and Funding agencies

Business plan: Importance of Business plan, Elements of Business Plan, Format of a Business Plan , Creating an effective business plan.**Funding Agencies and Financial Support for Startups in India**

READING LISTS AND RESOURCES

Compulsory ★★

- | | |
|----|---|
| 1. | The Start-up Owner's Manual, The Step-By-Step Guide for Building a Great Company by Steve Blank, (2020). Bob Dorf |
| 2. | Disciplined Entrepreneurship, 24 Steps to a Successful Start-up, (2013). Bill Aulet |
| 3. | The Entrepreneur's Guide to Market Research By Anne M. Wenzel, (2012) |
| 4. | Trajectory: Start-up, Ideation to Product/Market Fit, By Dave Parker, (2021) |
| 5. | The Business Model Canvas Let Your Business Thrive with this Simple Model (2017) |
| 6. | https://silverneedle.vc/startup-terminologies/ |

Highly Recommended, not Compulsory ★★

- | | |
|----|---|
| 7. | Business Model You, A One-Page Method for Reinventing Your Career, By Timothy Clark, Alexander Osterwalder, Yves Pigneur. (2012). |
|----|---|

Good for Students who have Future Interests ★

- | | |
|----|--|
| 8. | Value Proposition Design, How to Create Products and Services Customers Want By Alexander Osterwalder, Yves Pigneur, Gregory Bernarda, Alan Smith, Trish Papadacos. (2015) |
|----|--|

SEMESTER- I ELECTIVE – I (DISCIPLINE CENTRIC): <i>APPAREL EXPORT MANUFACTURING (AEM)</i> INDUSTRIAL ENGINEERING (T)		
Course Code: 25UPTAD1D03	Marks: 100 marks Internal-25 External-75	
L:T:P 2:1:2	Course duration: 75 hrs	Credit:4
Course Description: An Industrial Engineer is responsible for determining most effective ways to create a product or service in sewing line. Their Course includes analysis of the sewing method & process, machine and supervision of production floor for efficiency improvement.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Describe the industrial engineering job function, including the duties and activities involved.	Cognitive domain
CLO2	Analyze the production processes and technical interpretations to produce an effective product.	
CLO3	Calculate the consumption levels of trims, accessories and wastages in productions as well as the cost per production.	
CLO4	Manipulate production tricks to improve the production and the technical aids.	
CLO5	classify the production management system and identify inefficiencies that cause poor productivity	

CONTENTS
UNIT- I: IE-Context
Industrial Engineering – Definition – Roles and Responsibility, Utilization of Resources (4M) – Man, Method, Machine, Material, Ratios of 4M in Industry. Types - Centralized IE and Factory IE, Job positions of IE. Basic knowledge and skills needed for IE. Arrangement for various styles of Garment production. Preproduction meeting.
UNIT- II: Production Follow-Up
Analyse garment operations – operation bulletin, Time study-Tools Method and Template, Capacity Study, Motion Study, Bottle neck operation Analysis, Operator cycle time (OCT) Chart, General sewing data (GSD), Standard Minute Value (SMV), Standard allowed minute (SAM) calculation, production plan-Target setting - Importance of Valuable time and Techniques to decrease non-valuable time. Applications of IoT: track operations, manage workflow.
UNIT- III: Production Build-up

Thread Consumption: Types of thread packages, Types of thread, thread Ratio, Fabric Consumption - woven and knitted variations. Avoid thread wasting in sewing line. Costing – operation wise, Batch cost and profit & loss calculations. Production reports – Downtime analysis, Hourly production, day line efficiency and monthly efficiency.

UNIT- IV: Production Techniques

Production improvement –profiles, ironing and marking templates. Special attachment – Binders, Folders, Guides, and different presser foot. Name with symbols of therbligs and motion. Kaizen integration – elimination of waste.

UNIT- V: Production Management

Layout: Types- Batch Setting – Change over 5S Analysis, Operator balancing, Line balancing, Special Machines – fed of arm, Kansai, Bartak, welt packeting, auto zig. Down time management, WIP management, Waste Observation (TIMWOOD), Method Study, Motivation and Combination Important.

READING LISTS AND RESOURCES

Compulsory ★★ ★

1.	Industrial Engineering in Apparel Production, V. Ramesh Babu, (2017). Elsevier Science & Technology
2.	Industrial Engineering and Management, OP. Khanna, (2018). Dhanpat Rai Publication
3.	Apparel Manufacturing: Sewn Product Analysis, R.E. Glock & G.I.Kunz, (1995). Prentice Hall, New York
4.	Industrial Engineering Handbook, William K Hodson & Maynard's, (1992). Mc Graw-Hill, Inc., New York

Highly Recommended, not Compulsory ★★

5.	Apparel Production Management, Dr.K. Prabha Kumari & D. Anita Rachel.,(2018). Karangal Publication, ISBN:978-81-93623-99-2
6.	“Apparel Manufacturing, Handbook, Jacob Solinger, (1988). Published by Bobbin Media Corporation
7.	Technology Of Clothing Manufacture, Herold Carr & B.Latham, (2008).Wiley-Blackwell Publication

Good for Students who have Future Interest★

8.	https://www.onlineclothingstudy.com/2021/10/industrial-engineering-in-garment.html#:~:text=In%20the%20garment%20business%2C%20industrial,by%20the%20industrial%20engineering%20team.
9.	https://www.researchgate.net/publication/322950792_Industrial_Engineering_in_Apparel_Manufacturing
10.	https://www.youtube.com/watch?time_continue=4&v=qXFUqCijkUs&feature=emb_logo
11.	https://youtu.be/NzhUZ6jyrtU

SEMESTER- I
ELECTIVE – I (DISCIPLINE CENTRIC): *FASHION COMMUNICATION (FC)*
VISUAL MERCHANDISING

Course Code: 25UPTAD1D04	Marks: 100 marks Internal-25 External-75	
L:T:P 2:1:2	Course duration: 75 hrs	Credit:4

Course Description:

This course sculpt the young minds with design thinking, create passion for visual presentation and help aspiring students to become successful visual merchandisers, entrepreneurs and industry ready professionals.

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Recall the fundamental concepts of Visual merchandising and role of visual merchandiser in retail outlets	Cognitive domain
CLO2	Demonstrate the promotional merchandising Techniques for exterior display	
CLO3	Select the appropriate visual merchandising display techniques to achieve a good interior display presentation	
CLO4	Predict an innovating and eye-catching window display with suitable display techniques	
CLO5	Categorize the tools used in visual merchandising display	

CONTENTS

UNIT- I: Overview of Visual Merchandising and Display

Essentials of Visual Merchandising and Display: History and definition. What is Visual Merchandising? How and where visual merchandisers work. Day to-day life of Visual Merchandiser-Training, Visual merchandiser's toolbox, Role of Visual merchandisers in department store, multiple chain store and small retail outlets. Virtual visual merchandising- 3D store design, virtual product displays, virtual try-on, augmented reality (AR) integration and digital signage. Broad areas of Visual Display - Exterior and Interior, Store layout types. Display Design Basics-Line, Composition, Texture, Colour and Lighting.

UNIT- II: Exterior Display

Exterior Presentation: Storefront Architecture and Façade Design, Exterior Signage, Store Entrance and Accessibility, Marquees, Banners, and Awnings, Walkways, Entryways, and Landscaping, Lighting for Exterior Displays, Seasonal and Event-Based Exterior Décor, Digital and Interactive Display Technologies, Consumer Psychology and First Impressions.

UNIT- III: Interior Display

Interior Presentation: Interior display in selling area and sales support area, Areas of display- Windows, Highpoints, Focal points, Nesting Tables, Shelving units and wall bays, Gondolas and Racks, Staircase landings, Step raisers, Lift area, Dangers, Ceiling hangers, Cash counters. store entrances and exits and pillars, Types of lighting for interior displays. Planogram and Product Placement Techniques, Display Strategy and Thematic Layout Planning.

UNIT- IV: Window Display

Window Display: Scope of Window display, Types of window display, Window display designing process- theme and schemes, colour, budgeting, window prepping and installing, structuring the window calendar. Steps create eye-catching and innovative displays. In-Store Visual Merchandising and display -Product handling, colour blocking, product blocking, Vertical, horizontal, cross and symmetrical merchandising.

UNIT – V: Signage fixtures and props

Signage, Fixtures and Props: Signage: What signage can do for customer, retailer, vendor and community, various types of signage. In-store signage for promotions, sales & new arrivals.

Fixtures: Types of fixtures, selecting display fixtures. Fixture maintenance and safety guidelines.

Props: Types of props and their advantages. Styling and Grouping Techniques with Mannequins. Role of mannequins and dress forms in clothing store for effective visual presentation. Cross-Merchandising using fixtures and props. Common errors in creating window display, Promotional and seasonal display techniques.

READING LISTS AND RESOURCES

Compulsory ★★

1. Visual Merchandising, Swati Bhalla, Anuraag S, (2010). Tata McGraw-Hill Education
2. Why We Buy: The Science of Shopping, Paco Underhill, (2009). Simon and Schuster Paperbacks, Newyork.
3. Visual Merchandising and Display: Best Practices for Window Displays and Store Designs, Silvia Belli, (2020), Hoaki Books.
4. Silent Selling: Best Practices and Effective Strategies in Visual Merchandising, Judy Bell, (2022), 6th Edition, Fairchild Books (Bloomsbury).
5. Fashion Retailing: A Multi-Channel Approach, Diamond, (2007). Pearson Education India
6. Retail Product Management: Buying and merchandising, Rosemary Varley, (2014). Routledge
7. Visual Merchandising and Display, Martin M. Pegler, Anne Kong, (2018), 7th Edition, Bloomsbury (Fairchild Books).
8. Visual Merchandising: window and In-store displays for retail store, Third Edition, Tony Morgan, (2016). Laurance King Publishing

Highly Recommended, not Compulsory ★★

9. Stores of the Year, Issue 12 Martin, (2000). M. Pegler Visual Reference Publications
10. Store Presentation & Design: An International Collection of Design, (2004). Martin M. Pegler Visual Reference Publications.

Good for Students who have Future Interest ★

11. Visual Merchandising and Display: Studio Instant Access, 7th Edition, Martin M. Pegler, Anne Kong, (2018). Bloomsbury Academic

SEMESTER-I ELECTIVE – II (Generic) FASHION DESIGN AND GRAPHIC VISUALIZATION (P)		
Course Code: 25UPTAD1G01	Marks: 100 marks Internal-40 External-60	
L:T:P 0:0:4	Course duration: 60 hrs	Credit:2
Course Description: This advanced course offers a comprehensive exploration of digital techniques in fashion design, emphasizing creative visualization, garment representation, portfolio automation, and entrepreneurial branding. Students will master CorelDraw and illustration tools to sketch garments, render stylized fashion figures, simulate textile surfaces, and automate content for professional fashion workflows. Through applied learning and project-based exercises, learners will integrate productivity tools to streamline print production, generate interactive portfolios, and craft digital brand identities tailored for the fashion market. Special focus is given to accessibility, sustainability, and innovation using bilingual workflows and industry-relevant digital media applications.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Demonstrate proficiency in digitally constructing flat garment sketches, incorporating accurate shaping, color palettes, patterns, and texture simulations.	Cognitive & Psychomotor Domain
CLO2	Create anatomically accurate and stylized fashion illustrations that reflect diversity in gender, age, posture, and digital rendering techniques.	
CLO3	Integrate automation methods—including macros and print merge—to produce interactive fashion portfolios, storyboards, and calendars optimized for professional presentation.	
CLO4	Utilize fashion productivity tools to design variable-driven ID cards, certificates, labels, and screen-print assets with CorelDRAW and related technologies.	
CLO5	Formulate a distinctive fashion brand identity through logo creation, official brand collateral, garment labeling, and targeted social media advertisements.	

CONTENTS
UNIT- I: Garment Flat Sketching for Digital Presentation
1. Employ shaping techniques to construct flat garment views 2. Creating garment flat sketches using Bezier and Splines

3. Apply digital color palettes to enhance flat sketches
4. Color theory integration for textile communication, Creating and saving custom palettes in CorelDRAW, Seasonal palette adaptation (Pantone references)
5. Integrate seamless patterns onto garment layouts
6. Repeat pattern creation using transformation tools, mapping patterns onto different garment zones, Pattern distortion techniques for realistic draping, Using vector textures for scalable application
7. Simulate textures for material visualization
8. Grain, sheen, and thickness simulation using fills and effects, embedding bitmap textures for advanced realism, Transparency and layering to mimic light interaction, Creating swatches from real scanned fabrics
9. Use fabric swatches for authentic surface detailing
10. Importing swatch libraries and maintaining resolution, Real-time previewing with print simulation tools, Color calibration for digital-to-physical consistency, Annotated swatch documentation for portfolio use

UNIT- II: Digital Fashion Illustration

1. Understand anatomical foundations for croquis development
2. Proportional guidelines for fashion figures, Skeletal structure mapping for gesture-based poses, Gender and age variation in base croquis
3. Refine head, hands, feet, and facial features with stylistic detailing
4. Facial stylization techniques (minimalist to hyper-real), Hand gesture drawing to express design mood, Footwear anchoring and perspective correction, Detailing hairstyles, accessories, makeup digitally
5. Design stylized fashion figures across gender and age groups
6. Child, teen, adult, and senior body modifications, Inclusive design elements in body shapes
7. Capture movement with walking, seated, and dynamic postures
8. Action lines for fluid motion, Weight balance and limb positioning, Dynamic sketch layering with motion blur effects
9. Stylize proportions for elegance through elongation and exaggeration
10. Lengthening techniques for legs and neck, Abstract exaggeration while preserving garment fit, Editorial vs. commercial illustration stylization
11. Digitally render skin tones, shadows, and contours
12. Blend modes and gradient meshes for skin texture, Lighting simulation using highlight and shading tools, Cultural sensitivity in skin tone rendering
13. Overlay garments and accessories on layered croquis

14. Garment fitting to digital body structure, Accessory placement logic (functional vs. decorative), Transparency for material layering simulation

UNIT- III: Fashion Portfolio Automation

Generate color boards using macro automation

Batch importing color swatches, linking palettes to garment groups, Automated mood tagging per color cluster

Develop theme-based and mood-oriented storyboards

Integrating inspiration imagery and text, Chronological storytelling of fashion journey, Transitions and composition optimization

Design fashion calendars for planning and collection timelines

Season cycle mapping: Spring/Summer, Fall/Winter, Product development milestones, Event schedules like launch dates and fashion shows

Assemble an interactive e-portfolio with navigation features

Embedding links, scroll, and hover effects, Mobile-compatible layout structuring, Sectional division for concepts, sketches and patterns

UNIT- IV: Fashion Productivity Tools

Utilize data variables to design employee ID cards

Dynamic field insertion: name, designation, photo, Automated layout alignment using CorelDRAW merge tools, Barcode embedding for attendance tracking

Automate certificate layouts through variable integration

Design of achievement-based templates, Auto-fill signatures and issue dates

Embed QR codes into product labelling systems

Linking product pages or care instructions, Tracking systems for retail and logistics, Tamper-proof design enhancements

Implement print merge for batch label and tag generation

Label sizes and garment types linking, multi-language label creation, Serial number and SKU automation

Optimize designs for screen printing via color reduction and separation

Spot color management for printing accuracy, Halftone simulation for grayscale prints, Layer separation for stencil creation

UNIT- V: Fashion Entrepreneurship & Brand Identity

Formulate brand identity including brand name and logo

Brand archetype definition and positioning, Typography and symbol synthesis for logos, Trademark best practices

Design official assets like letterheads and visiting cards

Business communication templates, Digital print-ready designs, Bilingual formatting with cultural flair

Style product labels and garment tags with brand language

Material-specific tag layouts (woven, printed, heat-transfer)

Craft visual advertisements tailored for social media campaigns

Platform-specific layout optimization (Instagram, YouTube, WhatsApp), Visual hooks and call-to-action techniques, Branding consistency across carousel, reel, and thumbnail formats

READING LISTS AND RESOURCES

Compulsory ★★ ★

1. CorelDraw 12: The Official Guide, Steve Bain, (2004). Dream tech press
2. Jain, S. (2018). CorelDRAW Training Guide. BPB Publications. ISBN: 9789387284005
3. Salisbury, M. (2022). Drawing for Illustration: The Art of Creating Digital Worlds. Thames & Hudson. ISBN: 9780500023310
4. Studio Hard Deluxe. (2023). Manga & Anime Digital Illustration Guide: A Handbook for Beginners. Tuttle Publishing. ISBN: 9784805317273
5. Caplin, S., & Banks, A. (2009). The Complete Guide to Digital Illustration. Watson-Guptill Publications. ISBN: 9780823007844

Highly Recommended, not Compulsory ★★ ★

6. **McDevitt, M. K.** (2015). *Illustration workshop: Find your style, practice drawing skills, and build a stellar portfolio*. Chronicle Books. ISBN: 9781452146407

Good for Students who have Future Interests ★

7. CorelDRAW 12: The Official Guide Steve Bain, Nick Wilkinson McGraw,(2004). Hill Professional

**SEMESTER-II
CORE PAPER - IV**

a. SUSTAINABLE DEVELOPMENT FOR TEXTILES (T)

Course Code: 25UPTAD1C06	Marks: 100 marks Internal-25 External-75	
L: T:P 4:0:0	Course duration: 60 hrs	Credit:4

Course Description:

This course updates the students about the sustainable development and its goals, Eco-friendly processing, red listed dyes and chemicals, organic method of manufacturing fibres, recycling and up cycling of textiles, circular economy, ethical manufacturing and corporate social responsibility in fashion and apparel industry.

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Discuss the concepts of sustainability, chemical and green manufacturing of textiles, rules for using chemicals and waste management for textiles and clothing	Cognitive domain
CLO2	Describe the Eco-friendly chemical processing, Red listed textile chemicals, eco-friendly dyes, fibers, energy efficient production systems and methods of natural dyes and mordants	
CLO3	Explain the organic manufacturing of fibres like cotton, wool, silk, polyester, bamboo, lyocell and PLA, health and wellbeing textiles, reduction of carbon footprints in textile industry	
CLO4	Differentiate the importance of recycling and up cycling of textiles, circular economy	
CLO5	Review the latest journals and books for Current information of ethical and environmental issues relating to the textile and fashion industry and Corporate Social responsibility in fashion and apparel industry	

CONTENTS

UNIT- I: An overview of sustainable development

Introduction, Definition, concepts of Sustainable Development, SDG Goals, 7 principles of sustainability
Difference between chemical & green process in manufacturing, rules/ recommendations for using chemicals, raw materials & waste management for sustainable textiles & clothing.

UNIT- II: Eco-friendly processing of Textiles

Modern approaches to eco- friendly wet processing of woven and knitted clothing. Red listed textile chemicals, their sources, and remedies. Eco friendly fibers, Eco- friendly dyes and their method of dyeing;

Energy efficient production methods and processing techniques. enzymes – role of enzymes in processing of textiles, and natural dyes - classification, Natural mordants – classification and processes.

UNIT- III: Organic and sustainable textiles

Organic fiber production & Processes; Organic cotton, wool, silk, bamboo, Regenerated fibers- Lyocell, PLA (Polylactic Acid) fibers, Recycled fibers- PET. Fragrance textiles, health and hygiene textile using nano and biomaterials, skin nourishing and vitamin E finishing, mothproofing of woollen products, textiles for yoga and other applications. Reduction of carbon footprints in textile processing and finishing;

UNIT- IV: Recycling, up cycling of textiles and circular economy

Recycling- Definition, recycling process, importance of recycling. Upcycling- Definition, importance of upcycling, need for recycling/upcycling of textiles and clothing, disadvantages of recycling/upcycling. Circular economy- Definition, benefits, five pillars of circular economy, steps for achieving circular economy, circular principles for textile and apparel industry, advantages of circular economy, zero liquid discharge in textile industry.

Unit – V: Ethical manufacturing and corporate social responsibility

Seven ethical issues relating to textile and fashion industry, impact of textile and fashion industry on the environment. Ethical, Standard practices for sourcing of sustainable fashion clothing and accessory. Corporate Social responsibility in fashion and apparel industry.

READING LISTS AND RESOURCES

Compulsory



1. Textiles for Sustainable Development, Rajesh D. Anandjiwala, 2007. Nova Publishers
2. Ecotextiles: The Way Forward for Sustainable Development in Textiles, M Miraftab, A. Richard Horrocks, 2007. Elsevier science
3. Sustainable Textiles: Life Cycle and Environmental Impact, Richard Blackburn, 2009. Elsevier Science
4. Handbook of Sustainable Textile Production, Marion I Tobler-Rohr, 2011. Elsevier, Science

Highly Recommended, not Compulsory



5. Water Recycling in Textile wet processing, Skelly J. K., 2003. Wood head publishing Ltd, UK
6. Handbook of Environmental laws, Acts, Guidelines, Compliances and standards, Vol.1, Trivedi R.K., 2010. B.S. Publication
7. Circular economy in textiles and apparel-processing, manufacturing and design, A volume in the textile institute books series, Subramanian senthilkannan Muthu, 2019. Wood head publishing Ltd, UK

Good for Students who have Future Interests



9. https://ec.europa.eu/europeaid/case-studies/sustainable-textiles-sustainable-development_en
10. <https://www.1millionwomen.com.au/blog/a-z-glossary-of-sustainable-fibres/>
11. <https://www.sustainablefashionmatterz.com/what-is-sustainable-fashion>
12. <https://smallbusiness.chron.com/legal-ethical-issues-manufacturing-companies-74890.html>
13. <http://www.indiantextilejournal.com/articles/FAdetails.asp?id=5518>
14. <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
15. <http://www.sulphurdyes.com/Eco%20Friendly%20Chemical%20processing%20of%20Textile%20&%20Environmental%20Management.pdf>

SEMESTER-II CORE PAPER - IV b. RETAIL MERCHANDISING (T)		
Course Code: 25UPTAD1C07	Marks: 100 marks Internal-25 External-75	
L: T:P 4:0:0	Course duration: 60 hrs	Credit:4
Course Description: This course updates the students about fashion retailing; consumer analysis, merchandise planning, assortment techniques, sourcing and buying for retail business, logistics and inventory management and latest technologies in retail merchandising to attain knowledge for the development of entrepreneurial skills.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Classify the field of fashion retailing and retail formats, study on organizational chart of retail and identifying and understanding consumer behavior.	Cognitive domain
CLO2	Review the concept of merchandise planning and forecasting methods of assortment planning	
CLO3	Identify the sourcing techniques for the development of the retail business and evaluate the vendor relations and vendor performance for sourcing and buying	
CLO4	Demonstrate the performance goals of supply chain management	
CLO5	Summarize the role of technology in sourcing and buying for retail in the field of textiles and apparel sector	

CONTENTS
UNIT- I: Fashion Retailing Structure and Consumer Analysis Introduction to fashion retailing: Classification of retailers, Retail formats, City classification on fashion retail stores – Metro, Tier 1, Tier 2, Tire 3, Multiple chain stores, Franchisee – concept, types of franchises, global impacts of fashion retailing, organizational structures of fashion retailing, On-site Vs off-site retailing, ethical practices and social responsibility by retailers. Consumer Analysis: Fashion consumer identification and analysis- understanding of the customer, consumer behavior, consumer assessment theories and consumer analysis.
UNIT- II: Merchandise Planning and Assortment Planning Merchandise Planning: Concept of Merchandise planning, Process of merchandise planning, determining the merchandise requirements. Technology tools and merchandise planning.

Assortment planning: The merchandise assortment, assortment planning, Micro merchandising and merchandise compatibility, forecasting methods of clothing assortment planning, forecasting product selection, forecasting order quantity, forecasting short term sales- sales, forecasting methods.

UNIT- III: Sourcing and Buying and Vendor Analysis

Sourcing and Buying: Sourcing defined what needs to be sourced, sources of supply, different ways of buying a garment, selecting, and interacting with merchandise sources, evaluating merchandise. The phases in sourcing.

Vendor Analysis: Vendor, negotiating with vendor, establishing vendor relations, analyzing vendor performance, concluding purchases, Receiving, and stocking merchandise, Re- ordering merchandiser, evaluating on a regular basis.

UNIT- IV: Logistics and Inventory Management

Logistics: Performance goals, supply chain management, Order processing and fulfilment. Warehousing and Distribution Centres- Concepts of Warehousing – Types of Warehouse – Functions of Warehousing – Warehousing Strategy – Warehouse Design – Operational Mechanism of Warehouse. customer transactions and customer service.

Inventory Management and control: Need and importance of Inventory management, Planning and controlling stock levels, ordering, allocation and replenishment, warehousing and distribution centres, Retailers tasks, inventory levels, merchandise security, reverse logistics and inventory analysis

Unit – V: Recent Progresses in Retail merchandising

Technology in Retailing: Role of technology in retailing, technologies in retailing - Data analytics and generative AI, impact of technology on relationships in retailing. Trends in retailing-E-Commerce and the online shopper, mobile retail, pop-up and concept shops.

READING LISTS AND RESOURCES

Compulsory ★★

1. Mastering Fashion Buying and Merchandising Management, Tim Jackson, David ShawMacmillan International Higher Education, 16-Nov-2000.
2. Retail Buying Techniques: Planning, Organising and Evaluating Retail Buying Decisions and Improving Profitability Fiona Elliott, Janet Rider Management Books 2000, 2003
3. Fashion Retailing-A Multi-Channel Approach, Third Edition, Jay Diamond, Ellen Diamond & Sheri Diamond Litt, Fairchild Books, An imprint of Bloomsbury Publishing Inc.London, 2015.

Highly Recommended, not Compulsory ★★

4. Retail Merchandising, Swapna Pradhan,Tata Mcgraw Hill Education Pvt Ltd, New Delhi,2011
5. Strategic Retail Management: Text and International Cases Joachim Zentes, Dirk Morschett, Hanna Schramm-Klein Springer Science & Business Media, 16-Oct-2007
6. Fashion Retailing from Managing to Merchandising, Dimitri Koumbis, Bloomsbury Publishing Inc.London,2014.

Good for Students who have Future Interests ★

7. <https://www.slideshare.net/ujjmishra/retail-buying-merchandising-purchasing>

**SEMESTER-II
CORE PAPER - V
ADVANCED TEXTILE PROCESSING (T)**

Course Code: 25UPTAD1C08	Marks: 100 marks Internal-25 External-75	
L: T:P 4:0:0	Course duration: 60 hrs	Credit:4
Course Description: This course updates the students about the recent advancements in various preparatory process for textile fibres, advanced textile dyeing, printing and finishing methods and effluent treatment of wastewater.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Outline the various preparatory process for textile fibres and ecofriendly processes using enzymes	Cognitive domain
CLO2	Explain the latest dyeing methods and extraction procedures of natural dyes	
CLO3	Discuss the latest printing process used in textile industry	
CLO4	Categorize the advanced textile finishing techniques and process adopted	
CLO5	Evaluate the effluent treatment procedures, their need and application in textile industry	

CONTENTS

UNIT- I: Preparatory processes

Wet processing, typical processing sequence for Cotton, Silk, Wool, polyester (flow chart), Pre-Dyeing preparatory Processing for various textile fibres. Eco-friendly preparatory processes using enzymes.

UNIT- II: Advanced natural dyeing and extraction

Dyeing process - Exhaustion dyeing, bio mordanting and modern pre-treatments, enzyme – assisted dyeing, supercritical fluid extraction, nanotechnology application in natural dyeing, innovative fermentation process, irradiation technologies, aerodynamic dyeing, laser treatment.

Dye extraction - Aqueous extraction, solvent extraction, acid/alkali extraction, ultrasound and microwave assisted extraction, enzymatic extraction and fermentation

UNIT- III: Advanced Textile Printing

Printing: Role of Binders and Thickeners. Pigment printing, sublimation printing, natural dye printing, plasma printing, enzyme based printing, Digital printing, inkjet printing, flexographic printing, DTF printing, 3D printing.

UNIT- IV: Latest finishing methods and application

Nanotechnology, microencapsulation, plasma technology, clay finishing, UV protective finish, optical finishes, soil release finishes, abrasion resistant finishes, functional finishes in bio-textiles.

Methods of application – exhaustion process, impregnation method, spraying method, foam application method, coating method, transfer method.

Unit – V: Textile effluent treatment

Definition, nature of effluent composition from various textile processing operations, water consumption in textile industry, need for effluent treatment, effluent treatment methods – physical, chemical and biological, advanced oxidation process for treating textile waste water.

READING LISTS AND RESOURCES

Compulsory ★★ ★

1. Shenai V A , Technology of Textile processing – Vol III, IV, V,VI,VII AND VIII, Sevak publications, Mumbai, 1995.
2. D.G.Dugg and S.Sinclair – Gile’s laboratory course in dyeing, Woodhead publishing limited fourth edition, December, 1989.
3. Palmer John W.,Textile processing and finishing Aids: Recent advances, Mahajan book distributor, 1996
4. Ronald James W, Printing and dyeing of fabrics and plastics, Mahajan book distributor, 1996
5. Textile finishing Basic concepts and application by D.Gopalakrishnan, 2018

Highly Recommended, not Compulsory ★★

6. <https://ebooks.inflibnet.ac.in/hsp09/chapter/preparatory-steps-prior-to-finishing-textiles/>
7. https://www.researchgate.net/publication/377921915_Recent_Advances_in_Natural_Dyeing_Techniques_and_Applications
8. <https://www.homesciencejournal.com/archives/2025/vol11issue1/PartH/11-1-100-189.pdf>
9. <https://pubmed.ncbi.nlm.nih.gov/37630206/>
10. <https://jusst.org/recent-advancements-in-textile-finishing-focused-on-eco-friendly-and-plasma-technology-approach/>
11. https://vigyanvarta.in/adminpanel/upload_doc/VV_0524_13.pdf

Good for Students who have Future Interests ★

12. <https://ebooks.inflibnet.ac.in/hsp09/chapter/preparatory-steps-prior-to-finishing-textiles/>
13. <https://www.citylit.ac.uk/courses/textiles-printing-with-natural-dyes>
14. <https://textilelearner.net/advancements-in-textile-finishing/>
15. https://vigyanvarta.in/adminpanel/upload_doc/VV_0524_13.pdf
16. <https://www.mdpi.com/2071-1050/15/1/81>
17. <https://www.texspacetoday.com/eco-friendly-textile-wastewater-treatment/>
18. <https://www.mdpi.com/2071-1050/15/1/81>

SEMESTER-II CORE PAPER - VI NON-CONVENTIONAL NATURAL FIBERS (T)		
Course Code: 25UPTAD1C09	Marks: 100 marks Internal-25 External-75	
L: T:P 4:0:0	Course duration: 60 hrs	Credit:4
Course Description: This course updates the students on Research outcomes of Non-Conventional Natural fibres produced through renewable resources from Plants, Animals and Agro waste towards Sustainable fibre production practices		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Describe the significance of Non-Conventional Natural fibres and environmental impact of existing natural and synthetic polymers	Cognitive domain
CLO2	Discuss the different fibre separation methods of Non-Conventional Natural Cellulosic and Protein fibres	
CLO3	Prepare a portfolio on potential use and environmental benefits of Non-conventional Natural fibres in diverse fields	
CLO4	Analyze the Physical and Chemical properties of different Non-Conventional Natural fibres and elucidate the benefits and shortcomings for product development	
CLO5	Summarize the scope of Non-Conventional Natural fibers in India for research opportunities and product development	

CONTENTS
UNIT- I: Introduction to sustainability and Natural Cellulose fibers from Renewable Resources: Introduction to Sustainability: Definition, Concept, Dimensions of Sustainability, Environmental impact of Natural fibers and Synthetic Polymers, Alternative Fibers for Environmental Sustainability, Meaning of Non-Conventional fiber and Sustainable fibers, Need for Non-Conventional Natural fibers. Natural Cellulose fibers from Renewable Resources: Introduction to Natural Cellulose fibers from Renewable Resources, Corn Stover- Wheat and Rice Straw Fibers, Sorghum Stems and leaves, Cotton stalks, Palm trees, Banana Pseudo-stems, Sugarcane Bagasse. Extraction of Natural fibers-any two methods.
UNIT- II: Natural Cellulose fibers from Renewable Resources Milkweed fiber, Coconut husk fibers, Pineapple fibers, Switch grass, water hyacinth fiber, Hop stems and Bamboo fibers, Lotus stem and Coffee grounds, Hibiscus, Stinging Nettle and other Ligno cellulosic

sources, Regenerated cellulose fibers from Non-Conventional Cellulosic Resources. Root Fibers – Quadrangularis roots and Vetiver roots.

UNIT- III: Natural Protein Fibers (Innovative and Renewable resources)

Lacewing Silk, Mussel Byssus fibers, Hagfish proteins, Spider silks, Honeybee, poultry feathers, Animal Hair fibers (Chiengora), Casein, plant protein, Lysozyme,

UNIT- IV: Fibers from Biotechnology

Introduction, Production of Bacterial Cellulose, Agricultural Residues as Feed stocks for production of Bacterial cellulose, Blends of Bacterial Cellulose fibers, Application of Bacterial Cellulose, Regenerated Cellulose Films and Bio hybrid Yarns and Bio plastic.

Unit – V: Emerging Non-Conventional Fibers and Bio composites from Renewable resources

Bio composites from Renewable resources, Emerging Non-Conventional fibers from Fruits and Vegetable scraps: Oranges, Apple, Grapes, and others. Leather alternatives from: Fish, Mushrooms, apples, pineapples, and others.

READING LISTS AND RESOURCES

Compulsory



1. Sustainable Fibers for Fashion Industry, Volume 1, Subramanian Senthilkannan Muthu, Miguel Angel Gardetti, Springer, 23-Mar-2016
2. Handbook of Sustainable Luxury Textiles and Fashion, Volume 1, Miguel Angel Gardetti, Subramanian Senthilkannan Muthu, Springer, 10
3. Material Revolution 2: New Sustainable and Multi
4. Handbook of Composites from Renewable Materials, Physico
5. <https://www.businesswire.com/news/home/20180415005117/en/Key>

Highly Recommended, not Compulsory



6. Innovative Biofibers from Renewable Resources Narendra Reddy, Yiqi Yang Springer, 05-Dec-2014
7. Biofiber Reinforcements in Composite Materials Omar Faruk, Mohini Sain Elsevier, 25-Sep-2014

Good for Students who have Future Interests



8. Emerging Technologies for Materials and Chemicals from Biomass, Volume 476 Roger M. Rowell, Tor P. Schultz, Ramani Narayan, American Chemical Society. Cellulose, Paper, and Textile Division American Chemical Society, 1992

SEMESTER-II
ELECTIVE – III (DISCIPLINE CENTRIC): *FASHION DESIGNING* (FD)
DESIGN RESEARCH (T)

Course Code: 25UPTAD1D05

Marks: 100 marks

Internal-25 External-75

L: T:P 2:1:2

Course duration: 75 hrs

Credit:4

Course Description:

This course develops a strong understanding of the design research process and become familiar with many research methods. Develop an understanding of the principles of inspiration research, information research and compiling research and how to apply them in design project.

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Demonstrate the fundamental research process for a collection.	Cognitive Level
CLO2	Evaluate the effectiveness of inspiration, information, fabric and colour research.	
CLO3	Design a comprehensive research plan.	
CLO4	Compile and analyze the research findings.	
CLO5	Design from research by generating and refining ideas to form a collection.	

CONTENTS

UNIT- I: Design Research: what and why

What is a collection, how to start a collection. What is research, types of research: Primary research, secondary research, Why undertake Primary and secondary research, the purpose of research, types of briefs, and what is in a brief?

What should research contain: Shapes and structure: define shape and silhouette. Proportion and line: rules of proportion and line. Details: what is the main objective of garment detail? what are the details applied to a garment? sources of inspiration for garment details. Colour: why colour is an important element in the design process. Textures: what does texture mean to a designer? why is the selection of fabric important in the design process? what are the factors that influence fabric selection? Print and surface decoration: list the possible surface decorations and surface finishes. Cultural influences: what are the areas where designers can find ideas for design inspiration? Historical influences: how does historical dress or costume provide valuable insight for creative ideas? Contemporary trends: events, cultural trends, global changes, social trends, political trends. Tangible and material research: objects and items to be collected during research.

UNIT- II: Information and Inspiration research, fabric and colour research

Meaning of inspiration, idea, theme and Concept, Choosing a theme: abstract, conceptual and narrative
Researching: Notetaking, brainstorming, Spider diagrams to develop a theme, How to expand your research,
Information research and inspiration research: online fashion resources, fashion blogs, social media sites, magazines, online magazines, libraries, books and journals, internet, museums and art galleries, copyright, travel, flea market and second hand shops, recycled garment manipulation, architecture, natural world, film, theatre and music, shopping, vintage fairs, street and youth culture, new technologies, sustainability and ethics. How to organize your research.

Fabric research: why fabric research is important, sourcing of fabrics, choosing fabrics, collecting and storing fabric samples, attending fabric fairs. Colour research: how to create a colour palette, colour distribution and colour forecasting.

UNIT- III: Market research

Early market research: Identify market, identify muse, understand the different market levels and genres of the industry: haute couture, pret a porter, luxury super brands, mid-level brands and designers, independent designer labels, casual wear and sportswear brands , high street, women's wear, men's wear, children's wear.

Quantitative and Qualitative research, Methods of data collection, Identifying and analysing the competition, Brand identity: demographics, advertising, public relations. Trend forecasting agencies: WGSN, Promostyl, ethnographic research. Trends: micro and macro, Ethical concerns: Sustainable Fashion or Eco fashion

Market research for a collection, Market research to develop Mood board and story board for domestic and international market. Qualitative design research and consumer behaviour: Consumer analysis, lifestyle, values, motivations, and fashion adoption. Buying mood and Buying trend

UNIT- IV: Compiling and analysis of research

Ways to compile, assemble and document research: sketchbooks, storyboards, drawing-techniques and art materials, collage, juxtaposition, scrapbooks, photography, photocopying, Sampling and customization, deconstruction, modelling on the stand, and cross-referencing.

Analysis of research, focus on key elements and compile a set of concept or focus research pages. triangulation, interplay between images, Making a board of your own: how to create a mood board, what are the key elements that mood board should contain.

UNIT- V: Design development , communicating ideas and current trends in designing

Collaged research on figures, draping on the stand, photomontage with drapery, triangulation, investigative approach, interplay between images.

Design development exercises: techniques to begin the process of design development using the collaged figures, techniques to refine the garments, unifying your collection

Approaches to render your ideas: sketching and design drawing, creating six-figure templates, illustrating with collage, art materials, difference between fashion design sketching and illustration, working drawings, layout and composition. creating a toile or sample.

Current trends in fashion designing: Overview of Artificial Intelligence and metaverse in fashion designing.

READING LISTS AND RESOURCES

Compulsory ★★

1. Basics Fashion Design 01: Research and Design, Simon Seivewright, A&C Black, 2012
2. Basics Fashion Design 04: Developing a Collection, Elinor Renfrew, Colin Renfrew, AVA, Publishing, 2009
3. Doing Research in Fashion and Dress: An Introduction to Qualitative Methods, Yuniya Kawamura, Berg, 2011
4. Basics Fashion Design 05: Fashion Drawing, John Hopkins, AVA Publishing, 2009
5. Fashion Design Research, Ezinma Mbonu, Laurence King Publishing, 2014

Highly Recommended, not Compulsory ★★

6. Design Research in Education: A Practical Guide for Early Career Researchers Arthur Bakker Routledge, 2018
7. Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches Patricia Leavy Guilford Publications, 13-Apr-2017

Good for Students who have Future Interests ★

8. Designing and Managing Your Research Project: Core Skills for Social and Health Research David Thomas, Ian D Hodges SAGE, 21-Sep-2010

SEMESTER-II ELECTIVE – III (DISCIPLINE CENTRIC): <i>ENTREPRENEURSHIP DEVELOPMENT</i>(ED) FINANCIAL MANAGEMENT PRACTICAL (P)		
Course Code: 25UPTAD1D06	Marks: 100 marks Internal-40 External-60	
L: T:P 0:3:2	Course duration: 75 hrs	Credit:4
Course Description: Management of working capital sometimes becomes more important than the management of long-term funds because the day-to-day operations of any business largely depend upon the source of finance. Many firms have been seen in the past closing down for the want of short-term finance. The profitability of any business to a larger extent is affected by this source of finance due to efficient management of current assets and current liabilities. Hence, learning about financial management has become more important and critical in the modern scenario.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Prepare Profit & Loss Account, Balance Sheet and ascertain the current business situation through management information systems and key performance indicator.	Cognitive and Psychomotor Level
CLO2	Describe the working capital management	
CLO3	Plan the finance and long-term investments	
CLO4	Take financial decision and measuring the performance	
CLO5	Analyze financial statements using breakeven analysis	

CONTENTS	
UNIT – I: Introduction to Financial statements, management Information systems and key Performance indicators	
Components of financial statements: <u>Profit and Loss Account:</u> revenues, direct cost, gross profit, overheads, net profit or loss <u>Components of Balance Sheet:</u> assets and liabilities: fixed assets, shareholders' funds, borrowings and networking capital <u>Cash flow:</u> inflow and outflow of cash	Exercises: • Preparation of Trial Balance • Preparation of Trading, Profit & Loss Account • Preparing Trading, Profit & Loss Account and Balance Sheet • Calculating Gross Merchandizing Value • Calculating Revenue Run Rate

Components of Management Information system(MIS): budget vs actual, unit metrics- understand each component cost structure.

Key performance indicators for business Booking Vs Revenue, GMV vs Revenue, Revenue run rate, Gross profit, Lifetime value, Customer acquisition cost, monthly turn, Average revenue per user, conversion rate, cohort analysis.

- Preparing Trading account to calculate gross profit and gross loss.
 - Calculating customer cost
- Preparing Cohort Chart

UNIT- II: Working Capital management

Working capital management: Importance, components of working capital management: permanent or temporary/fluctuating, List the factors that influences the working capital requirement, Why adequate working capital is required.

Operating cycle: The importance and use of the Operating Cycle concept for estimating working capital requirements for your start-up. Understanding longer and shorter operating cycle with examples.

Financing and management of working capital: Various sources to raise funds for working capital and management of working capital.

Vendor contracts: What are the key terms in vendor contract.

Exercises:

- Preparing estimate of working capital requirement
- Preparing statement showing determination for net working capital
- Calculating operation cycle in days

UNIT- III: Financial Management & long term investments

Financial management and long-term investments: Short term and long-term investments: CAPEX, OPEX, Planning and evaluating long term investments, importance of long-term investment decision, Payback period, Net present value method.

Exercises

- Computing CFO to Capital Expenditure.
- Calculating free cash flow for firm (FCFF)
- Determining cash flow for equity holders (FCFE)
- Comparing CAPEX and OPEX
- Computing Cash flow from operations direct method

- Computing Cash flow from operations
Indirect method
- 7. Computing Cash flow from investment

UNIT- IV: Capital structure and taxation

Capital structure: Define capital structure, what are long term sources of finance, what is the difference between debt and equity. List the forms and features of equity, List the forms and features of debt.

Financial leverage and capital planning: capital structure decision, what is financial leverage and trading on equity, how to take financial decision, sources of funds.

Measuring performance: ratio analysis and its importance, categories of ratio:

liquidity ratio, leverage ratios, turnover ratios, profitability ratios.

Taxation: direct tax and indirect tax

Exercises

- Preparation of statement showing value of firm and overall cost of capital
- Preparation of statement showing value of firm and calculation of cost of equity.
- Calculation of implied rate of return
- Calculation of cost of debt, interest of debt and number of equity share to be issued.
- Calculation of earnings per share

Unit – V: Break Even analysis

Introduction to Break even analysis, Elements of

Cost involved in break-even analysis, and what are the ways costs can be controlled. What is break-even point, Break-even point through contribution, Why should contribution be calculated, Cost change and margin of safety, what is the use of break-even analysis

Exercises

- Calculation of financial break-even point under algebraic method
- Determination of break-even points under contribution margin approach
- Graphical presentation method of break-even chart

READING LISTS AND RESOURCES

Compulsory



1. Principles of Managerial Finance (Lawrence J. Gitman & Chad J. Zutter) 14th Edition.
2. Besley, S. & Brigham, E. F. *Essentials of managerial finance*. New York: Harcourt Brace College Publishers.
3. Van Horne, J. C. & Wachowich, J. M. *Fundamentals of financial management*. New Delhi: Prentice Hall Inc.
4. Ross, S. A., Westerfield, R. W. & Jordon, B. D. *Fundamentals of corporate finance*. New Delhi: Tata McGraw Hill.
5. Shashi K. Gupta, R. K. Sharma – Financial Management Theory and Practice, Kalyani Publishers, 2001.
6. IM Pandey – Essentials of Financial Management, 4th Edition, Vikas Publishing

7.	P. C. Tulsian – Financial Management, S. Chand
8.	Prasanna Chandra – Fundamentals of Financial Management, 3rd Edition, TMH
9.	S. C. Kuchhal – Financial management - An Analytical and Conceptual Approach, Chaitanya Publishing House, Allahabad, 2001.

SEMESTER-II ELECTIVE – III (DISCIPLINE CENTRIC): APPAREL EXPORT MANUFACTURING (AEM) LOGISTICS (T)		
Course Code: 25UPTAD1D07	Marks: 100 marks Internal- 25 External- 75	
L: T:P 2:1:2	Course duration: 75 hrs	Credit:4
Course Description: This course aims the young budding entrepreneurs to make decisions and workflow in minimalized way to increase the output. It creates passion in the field of logistics, supply chain and provide competitive edge solutions.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Categorize the way of Minimizing the production cost by effective logistics	Cognitive & Psychomotor Domain
CLO2	Demonstrate the Implementation of supply chain and efficient operations flow	
CLO3	Identify the skills in selecting port and cargo management	
CLO4	Summarize the effective way of distributing the goods and services	
CLO5	Select the modern transportation methods for shipment of goods	

CONTENTS
UNIT- I: Overview of logistics and types
Logistics – Introduction, Functions of logistics – Growing importance of logistics management – Strategic logistics planning process – Components of logistics management–Types of logistics.
UNIT- II: Supply chain management
Supply chain Management: Introduction – Functions – Apparel supply chain management – activities and importance, types of supply chain models, Difference between supply chain management and Logistics. Import cycle & Export cycle – Port terminal Facilities – Container Freight Station (CFS) inside a terminal - Reasons for congestion of a terminal - Window system in a terminal – Different type of cargos.
UNIT- III: Role of Ports in Export Logistics
Difference between major and minor ports: Ports in India - Natural harbours - Major ports of the World - Largest port in the world - Port officials and their roles. Port as a custodian of the cargo - Cargo receivers. Berthing in shipping – Functions, Types of berth, Factors influencing berth restrictions, Port equipment's, Procedure for customs clearance process.
UNIT- IV: Air Transportation

Frighth handling and its Role & importance. History of air cargo mail, air freight, air express, and overnight air express. Other Multi-modal forms of transport – definition, key aspects and benefits.

Unit – V: Shipment Processes in E Commerce

E-commerce & it importance. - Types of operations in E-commerce – First mile process flow. Importance of first mile in e-commerce logistics.

Shipment pickup process, Pick up operations, staff-roles and responsibilities. Safety and security of shipments during pickup-Pickup documentation.

Importance of Last mile in the supply chain, Last mile delivery challenges for e-commerce, trends in last mile delivery. Delivery process & its challenges.

Reverse pickup process in last mile operations, challenges in Reverse Pickup process, Innovations in last mile logistic technology, Trends in last mile delivery, last mile delivery market and future prospects. Warehouse functions and it types. shipment tracking process.

READING LISTS AND RESOURCES

Compulsory



1. Douglas M.Lambert, James S. Stock and Lisa M. Ellram (1998), Fundamentals of Logistics Management, The McGraw Hill Companies, New York.
2. Gaurdin, Kent N., Global Logistics Management (2001), Blackwell Publishers Ltd., Oxford
3. Thorston Blecker, Wolfgang Kersten and Christian M. Ringle, Innovative Methods in Logistics and Supply Chain Management,(2014), epubli GMBH, Berlin.

Highly Recommended, not Compulsory



4. Martin Christopher, Logistics and Supply Chain Management (2000), Financial Times Management, Pitman Publishing, London.

Good for Students who have Future Interests



5. <https://builtin.com/logistics>
6. <https://logistikknowhow.com/en/material-flow-and-transport-en/overview-of-the-term-logistics-definitions-specializations-and-job-descriptions/>
7. <https://www.netsuite.com/portal/resource/articles/erp/logistics.shtml>

SEMESTER-II
ELECTIVE – III (DISCIPLINE CENTRIC): *FASHION COMMUNICATION*(FC)
FASHION PHOTOGRAPHY (P)

Course Code: 25UPTAD1D08

Marks: 100 marks

Internal-40 External-60

L: T:P 0:3:2

Course duration: 75 hrs

Credit:4

Course Description:

This course dealt the Fashion Photography practice and helps the student to acquire practical skills in fashion Photography through exploration of different styles, and its applications.

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Perform basic Camera skills: Inculcate basic camera handling and shoot like a pro.	Psychomotor Level
CLO2	Photo shoot: Different kind of model poses and using software to Edit Images.	
CLO3	Develop a Broucher - Fashion portfolio and Catalogue.	

CONTENTS

UNIT- I: Camera skills and working knowledge

Learning Basic camera Techniques and Features,

Hands on Training with camera.

- **Lenses and Optics- Learning about focal lengths:**

- Introduction to the concept of focal length and how it relates to lenses.

- Conduct a fashion photography shoot of fashion items experimenting with different lenses and compare the photos for perspective and composition.

- Exposure and Light Metering- Photography vocabulary: aperture, shutter speed, ISO- Equivalent Exposures- Metering- Modes.

- **Shooting Videos**

UNIT- II: Photography Skills

- Fundamentals of Photography-Nature-Landscape-Wide-Close-up.

- Understanding the Object (Model, Product, Nature) and clicking the best of it.

- Practicing-Light, Trails-motion, Blur-Exposure, White balance.

- Camera Angle-Focal Length-Depth of Field, Composition, Golden triangle.

- Sourcing props and enhancing the product.

- Makes stories and reels for social media, long videos -YouTube.

- Still photography, candid photography, motion photography.
- Brand videos, high volume, digital photography for apparel Accessories.
- Screen recording, Recording Mp4, Use of Digital Drawing Apps.
- Color Psychology
- Music copy right issues

UNIT- III: Creation of Magazine, Broucher, Catalogue, and retouching Images.

- Working with Layers and Channels
- Working with Path and Character - Patches and healing brushes
- Edit visual contents for multiple platforms (eg: Amazon, Flipkart, Myntra)
- Perform and retouching images after shoot
- Colour grading and Skin retouching techniques
- Creating Broucher - Magazines. and Catalogue.
- Manipulate smiles on faces, correct noses, remove blemishes, etc.
- Use of Editing software for creating incredible video

READING LISTS AND RESOURCES

Compulsory ★★ ★

1. Vanon, rossella, Lighting people.. N.p.: Routledge, 2023.
2. Adler, Lindsay. The Photographer's Guide to Posing: Techniques to Flatter Everyone. United States: Rocky Nook, 2017.
3. Lindbergh, Peter. Peter Lindbergh. on Fashion Photography. 40th Ed. Germany, Taschen, 2020.
4. Kazanjian, Dodie. Vogue: The Covers (updated Edition). Hong Kong, Harry N. Abrams, 2017.
5. Gerke, Alondra, et al. Photography Masterclass: Your Complete Guide to Photography. N.p., Independently Published, 2019.
6. Judge, Al. Mastering Aperture, Shutter Speed, ISO, and Exposure: How They Interact and Affect Each Other. United States, CreateSpace Independent Publishing Platform, 2013.
7. Click You!! - Your first book on Photography. N.p., n.p.

Highly Recommended, not Compulsory ★★ ★

8. Garrett, John, and Harris, Graeme. Collins Complete Photography Projects. United Kingdom, Collins, 2013.
9. The Beginner's Photography Guide: The Ultimate Step-by-Step Manual for Getting the Most from Your Digital Camera. United States, DK Publishing, 2016.

**SEMESTER-II
ELECTIVE -IV GENERIC
FASHION ILLUSTRATION (P)**

Course Code: 25UPTAD1G02	Marks: 100 marks Internal-40 External-60	
L: T:P 0:0:4	Course duration: 60 hrs	Credit:2
Course Description: This course dealt the Illustration practice and helps the student to acquire practical skills in fashion sketching through exploration of different styles, and its applications.		

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Perform basic fashion drawing skills: Human body and different kinds of figures and poses and textural applications	Cognitive & Psychomotor Domain
CLO2	Sketch: 1. Costumes on silhouettes using lines, checks, shapes, and fullness 2. Two- and three-dimensional figures 3. Create a design for figure irregularities.	
CLO3	Design different styles of Seasonal garments and Sportswear for a specific theme and Styles for Fashion show costumes and Bridal costumes	

CONTENTS

UNIT- I: Introduction to Figure Illustration

Introduction to Fashion Head Theory: Practice male and female fashion figure proportions, Basic block with measurements according to 8, 10 and 12 head theory. Different poses (front, back and side view) of stick figures, block figures and flesh figures. Blocking the human body. Bodyline reading through different poses.

Draw different kinds of figures: Normal, tall and thin, tall and thick, short and thin, short and heavy and athletes. Draw features of eyes, nose, lips, face, hands, arms, legs, and feet (with/without shoes). Illustrate different hair styles for male and female.

Colours: Using different medium of colours on a costume match the colours with colour complexion.

Textural Applications- Experiment with techniques- blending, hatching, cross-hatching, contour hatching, stippling and dry brushing to illustrate fabric textures and surface qualities.

Application of light and shadow to enhance depth, realism, and material effects in fashion garment illustrations.

UNIT- II: Costumes on Silhouettes

Costumes on silhouettes: Single, two and three dimensions of figures with pattern, design, and texture. Mix matching costumes on a silhouette. Introduce different types of lines, checks and shapes on a garment.

Fullness on garment: Pleats, smocking, gathering and ruffles.

Figure Irregularities: Design a fashionable garment for the person having figure problems- Long and thin, long and stout, short and thin, short and stout, narrow hips, large bust, and short waist.

Integration of AI: Generate body-type specific garment ideas, Design garment for solutions to figure irregularities.

UNIT- III: Design Fashion Show, Bride Groom, and Seasonal Garments

Fashion Show garments: Illustrate Party wear, occasional wear, ethnic and trendy wears. Design journal of a traditional wear to high fashion.

Designing Sportswear: Design a new uniform for a preferable game e.g., cricket team.

Seasonal garments: Designing garment with a theme of spring, autumn and summer seasons.

Costumes for Bridal wear: Create new designs for a bride groom of Tamil Nadu, Karnataka, Andhra, and North India with suitable rendering of fashion accessories, handbags, belts, jewellery and shoes.

Digital Integration: Digitizing hand-drawn silhouettes (scan + trace), Applying patterns to digital flat sketches, Refining smocking/pleat guides.

READING LISTS AND RESOURCES

Compulsory ★★

1. Fashion Sketchbook, Bina Abing, 6th Edition Fairchild Books, 2012
2. Figure Drawing For Fashion Design Illustrated, Tisiannapaci, Pepin Press; 2nd edition, 2010
3. Fashion Illustration: Inspiration and technique, Anna kipper, David and Charles, 2011
4. New Fashion Figure Templates, Patrick John Ireland, Batsford, 2017
5. Artist's Drawing Techniques: Discover how to draw landscapes, people, still lifes, and more, Thomas Newbolt (Consulting Editor), (2017), Dorling Kindersley.
6. Fashion Drawing, Kathryn Hagen, (2017), second edition, cengage learning.
7. 20th-century Fashion: The Complete Sourcebook, John Peacock, Thames and Hudson, 1993

Highly Recommended, not Compulsory ★★

8. Understanding Fashion, E. Rouse, Wiley, 1991
9. Fashion Illustration: Inspiration and technique, Anna kipper, David and Charles, 2011
10. Contemporary Fashion Illustration Techniques, Naoki Watanabe, Rockport Publishers, 2009
11. Essential Fashion Illustration: Poses, Maite Lafuente, Rockport publishers, 2007

Good for Students who have Future Interests ★

12. Patrick John Ireland, New Fashion Figure Templates new edition, Batsford Ltd, 2007
13. John Peacock, 20th-century Fashion: The Complete Sourcebook, Thames, and Hudson
14. Elisabetta Drudi, Figure Drawing for Fashion Design, Pepin Press, 2010

SEMESTER-II
SKILL ENHANCEMENT COURSE 1 (SEC)
FASHION DIGITAL COMMUNICATION (P)

Course Code: 25UPTAD1SE1

Marks: 100 marks

Internal-40 External-60

L: T:P 0:1:4

Course duration: 75 hrs

Credit:3

Course Description:

The given paper enables the students to use Adobe Photoshop Software very effectively. They can further work with advanced graphics including the older versions to upcoming new version of Adobe Photoshop. Knowledge acquired in working with Adobe Photoshop will enable one to learn and work with Adobe Illustrator easily.

Course Learning Outcomes (CLOs)

By the End of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CLO1	Perform the basic operations of Adobe Photoshop, Manipulate the workspace, layers, and Channel	Psychomotor Level
CLO2	Scanning of fabric swatches and mask the swatch for texture mapping.	
CLO3	Execute creatively the Filter effects, User defined brush presets, path, and characters	
CLO4	Create design pattern, print repeat and graphics	
CLO5	Prepare Mood board and story board with Advanced Graphics	

CONTENTS

UNIT- I: Introduction to Adobe Photoshop

Introduction: Photoshop needs for the fashion industry. Work Space Overview: Top menu bar; How to create a new document; Photo Shop Tool Palette, Shortcut keys and uses. Difference between cloud documents and Adobe Creative Cloud Files.

UNIT- II: Working with layers and channels

Preparing files and creating a colour palette

Scanning: Basics, scanning and aligning fabrics

Layers: Their application and function in design

Exercises on layers Masks: How to use a mask in Adobe Photoshop Channels: Working with channels.

Exercises on Facial features: Pimples, dark circle, Hairline adjustment

UNIT- III: Creating Filters, Brush presets, working with Path, Character and Plugins

Filters and uses working with filters, giving effects to pictures. Brushes presets: Brushes and applications: Add new brushes. Path: Path and its applications; Working with paths Character: Work with text, typography, and Photoshop 3D—Using Depth Maps, Bump Maps, and Normal Maps. Plugins.

UNIT- IV: Creating design patterns, printing repeats, and working with graphics

Understanding swatches, Working with repeat of a pattern

Pattern: Define, create woven patterns

Print Repeat: Fundamentals and creating print repeat

Graphics: Preparing graphics; How to make graphics.

Camera raw filter: Basic, Curve, Detail, Color Grading, effects and calibration

Creating Apparel accessories like Buttons, Labels Etc.

Unit – V: Working with Advanced Graphics

Forecasting and trend analysis:

Part-A

Image editing, Create and apply presets, Special effects, Collage work, Web page designing, Fashion magazine design, Creating catalogue and Brochure and Apparel Tags.

Part-B

Theme board, Mood board, Colour board, Story board, Swatch, and texture board.

READING LISTS AND RESOURCES

Compulsory ★★ ★

1. Rendering Fashion, fabrics and prints, Pearson education, 2007
2. Adobe Photoshop for Textile Design, Frederick Chipkin, Origininc, 2012
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Highly Recommended, not Compulsory ★★

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10. The Graphic Designers Digital Toolkit: A project-based introduction to Adobe Photoshop CS6, Illustrator CS6 and InDesign CS6, 7th Edition, Allan Wood, Cengage Learning, 2014

Good for Students who have Future Interests ★

11. The Graphic Designers Digital Toolkit: A project-based introduction to Adobe Photoshop CS6, Illustrator CS6 and InDesign CS6, Allan Wood, 6th Edition, Cengage Learning
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