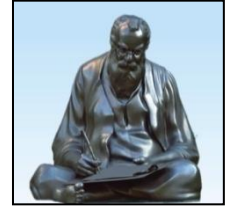


PERIYAR UNIVERSITY

Periyar Palkalai Nagar

Salem-636 011



Department of Textiles and Apparel Design

OUTCOME-BASED CURRICULUM DESIGN FOR  
M.SC. DEGREE IN TEXTILES AND APPAREL DESIGN

Regulations and Syllabus

(Effective from the academic year 2022-2023 and thereafter)

Department of Textiles and Apparel Design  
M.Sc. Programme  
Curriculum Framework

SEMESTER – I										
S.NO	Paper code	Title of the paper	L	T	P/F	C	Exam hours	Internal marks	External marks	Total Marks
<b>CORE PAPERS (C)</b>										
1	22UPTAD1C01	Technical textiles - I	4	0	0	4	3	25	75	100
2	22UPTAD1C02	Indian textiles & apparel industry	4	0	0	4	3	25	75	100
3	22UPTAD1C03	Apparel quality standards & implementation	4	0	0	4	3	25	75	100
4	22UPTAD1C04	Fashion and graphic designing practical	0	0	4	2	3	40	60	100
5	22UPTAD1C05	Fabric structure analysis practical	0	0	4	2	3	40	60	100
6	22UPTAD1C06	Advanced sewing practical	0	1	4	3	4	40	60	100
<b>Subtotal(a)</b>			<b>25</b>			<b>19</b>				
<b>ELECTIVES - SPECIALIZATION</b>										
<b>LEVEL-1: CHOICE BASED(Any one specialization)</b>										
Fashion designing (FD), Entrepreneurship Development (ED), Apparel Export Manufacturing (AEM), Fashion Communication (FC)										
7	E1 22UPTAD1E01	Garment styling (FD)	2	1	2	4	3	25	75	100
	22UPTAD1E02	Textile business Start-Up practical (ED)	0	3	2		3	40	60	100
	22UPTAD1E03	Industrial engineering (AEM)	2	1	2		3	25	75	100
	22UPTAD1E04	Visual merchandising (FC)	2	1	2		3	25	75	100
<b>ONLINE COURSE(O)</b>										
8	22UPTAD1M01	Supportive (Swayam registration)	0	0	0	0	0	0	0	0
<b>Subtotal(b)</b>			<b>5</b>			<b>4</b>				
<b>Total(a+b)</b>			<b>30</b>			<b>23</b>	-			700
<b>EXPERIENTIAL LEARNING (EL)</b>										
Industrial/Field Visits										

**SEMESTER – II**

S.NO	Paper code	Title of the paper	L	T	P/F	C	Exam hours	Internal marks	External marks	Total Marks
<b>CORE PAPERS (C)</b>										
9	22UPTAD1C07	Sustainable development for textiles	4	0	0	4	3	25	75	100
10	22UPTAD1C08	Technical textiles-II	4	0	0	4	3	25	75	100
11	22UPTAD1C09	Non-conventional natural fibers	4	0	0	4	3	25	75	100
12	22UPTAD1C10	Fashion computer communication practical	0	1	4	3	3	40	60	100
13	22UPTAD1C11	Fashion illustration practical	0	0	4	2	3	40	60	100
<b>VALUE EDUCATION (Self Study)</b>										
14		Human rights	0	0	0	2	3	25	75	100
<b>SWAYAM EXAMINATION</b>										
15	22UPTAD1M01	Supportive (Swayam Examination)	0	0	0	2	-	-	-	-
<b>Subtotal (a)</b>			<b>21</b>			<b>21</b>				
<b>ELECTIVES - SPECIALIZATION , LEVEL-2:</b>										
Fashion designing (FD), Entrepreneurship Development (ED), Apparel Export Manufacturing (AEM), Fashion Communication (FC)										
16	E2 22UPTAD1E05	Design research (FD)	2	1	2	4	3	25	75	100
	22UPTAD1E06	Financial management practical (ED)	0	3	2		3	40	60	100
	22UPTAD1E07	Quality control in apparel industry practical (AEM)	0	3	2		3	40	60	100
	22UPTAD1E08	Fashion photography practical (FC)	0	3	2		3	40	60	100
<b>SUPPORTIVE COURSE (S)</b>										
Can be chosen from Pool of papers offered by other departments) Exposure to unrelated discipline, enhancing proficiency skill										
17	S1	Supportive to the discipline of the study.	4	0	0	4	3	40	60	100
<b>INTERNSHIP (EXPERIENTIAL LEARNING) Career Exploration and Problem Identification for Research</b>										
18	EL	Summer internship (6 Weeks)	0	0	0	0	0	0	0	0
<b>Subtotal(b)</b>			<b>9</b>			<b>8</b>				
<b>Total(a+b)</b>			<b>30</b>			<b>29</b>	-			800

**SEMESTER – III**

S.NO	Paper code	Title of the paper	L	T	P/F	C	Exam hours	Internal marks	External marks	Total Marks
<b>CORE PAPERS (C)</b>										
19	22UPTAD1C12	Research methodology & statistics	4	0	0	4	3	25	75	100
20	22UPTAD1C13	Textile testing	4	0	0	4	3	25	75	100
21	22UPTAD1C14	Standards & specifications for textiles	4	0	0	4	3	25	75	100
22	22UPTAD1C15	Retail merchandising	4	0	0	4	3	25	75	100
23	22UPTAD1C16	Textile testing practical	0	1	4	3	3	40	60	100
24	22UPTAD1C17	Computerized pattern making practical	0	0	4	2	3	40	60	100
25	22UPTAD1I01	Internship assessment-Viva Voce	-	-	-	-	-	-	Commended /Highly Commended	-
<b>Subtotal (a)</b>			<b>25</b>		<b>21</b>					
<b>ELECTIVES - LEVEL-3: CHOICE BASED</b>										
Fashion designing (FD),Entrepreneurship Development (ED), Apparel Export Manufacturing (AEM),Fashion Communication (FC)										
26	E3 22UPTAD1E09	Professional Design practical (FD)	0	3	2	4	3	40	60	100
	22UPTAD1E10	Intellectual property rights, branding and marketing (ED)	2	1	2		3	25	75	100
	22UPTAD1E11	Export merchandising practical (AEM)	0	3	2		3	40	60	100
	22UPTAD1E12	Digital Marketing (FC)	0	3	2		3	40	60	100
<b>Subtotal (b)</b>			<b>5</b>		<b>4</b>					
<b>Total (a+b)</b>			<b>30</b>		<b>25</b>		-			700
<b>EXPERIENTIAL LEARNING (EL)</b>										
Industrial/Field Visits										

SEMESTER – IV											
S.NO	Paper code	Title of the paper	L	T	P/R	C	Exam hours	Internal marks	External marks	Total Marks	
<b>Core Papers (C)</b>											
27	22UPTAD1C18	Digital fashion designing	0	1	4	3	3	40	60	100	
<b>Core Paper – Research (CR)</b>											
28	22UPTAD1C19	Research project and viva Voce	0	0	20	10	-	50	150	200	
<b>Subtotal (a)</b>			25			13					
<b>ELECTIVES - LEVEL-4: CHOICE BASED</b>											
Fashion designing (FD), Entrepreneurship Development (ED), Apparel Export Manufacturing (AEM), Fashion Communication (FC)											
29	22UPTAD1E13	Draping, drafting, construction, & fit analysis practice (FD)	0	3	2	4	3	40	60	100	
	22UPTAD1E14	Clothing boutique management (ED)	2	1	2		3	40	60	100	
	22UPTAD1E15	Logistics (AEM)	2	1	2		3	25	75	100	
	22UPTAD1E16	Branding practical (FC)	0	3	2		3	40	60	100	
<b>Subtotal(b)</b>			5			4					
<b>Total(a+b)</b>			30			17					

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

COURSE TYPE	NUMBER OF CREDITS
CORE COURSE	70
ELECTIVE(4X4)	16
SUPPORTIVE(1X4)	04
SUPPORTIVE (SWAYAM)	02
HUMAN RIGHTS	02
<b>TOTAL</b>	<b>94</b>

**SEMESTER-I**  
**CORE PAPER -1**  
**TECHNICAL TEXTILES- I**

Course Code: 22UPTAD1C01	Marks: 100 marks Internal-25 External-75	
L:T:P 4:0:0	Course duration: 60 hrs	Credit:4
<p>Course Description:</p> <p>This course updates the students about the recent advancements in technical Textiles and various centres of excellence all over India, recent - technical fibres, finishing, flame protective clothing, survival textiles and high altitude clothing like water proof breathable fabrics.</p>		

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 its Applications in various fields and COE for technical textiles	Cognitive Domain
CLO2	Discuss the recent fibres and fabrics used in various applications of technical textiles.	
CLO3	Differentiate the various finishing treatments and the method of application in technical textiles	
CLO4	Compare the conventional and non-conventional fibres and fabrics used in heat and flame protection and survival textiles	
CLO5	Compare the performance of various waterproof breathable fabrics and assessment techniques.	

**CONTENTS**

**UNIT- I: An overview of technical textiles**

Introduction, definition and scope of technical textiles, milestones in the developments in fibers and applications of technical textiles – Agro textiles, building textiles, clothing textiles, geo textiles, home textiles, Industrial textiles, medical textiles, mobile textiles, environmental textiles, packaging textiles, protective textiles, and sports textiles - products and their uses. Centre of Excellence for various technical textiles applications

**UNIT- II: Advanced technical fibers**

Technical fibers- 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, civil and agricultural engineering, automotive and aeronautics, medical and hygiene applications and protection and defence.

**UNIT- III: Latest textile finishing**

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- IV: Thermal protection and survival textiles**

Heat and flame protection: Thermal behaviour of fibers, fibers suitable for thermal protection- inherently flame-retardant fibers, flame retardation of conventional textile fibers-FR viscose. FR nylon, FR acrylic fibers. Fire retardant finishes-cellulosic fiber fabrics, Flame retardant finishes for polyester, flame retardant finishes for polyester cellulosic blends, flame retardant finishes for wool, glass fiber fabrics. Survival textiles: Short term survival and long-term survival, fibers suitable for suitable clothing against chemical, microbiological and radiation hazards.

**UNIT- V: Recent high-altitude clothing**

Waterproof breathable fabrics- introduction, types of waterproof breathable fabrics- densely woven fabrics, membranes- types of membranes, methods of incorporation of membranes, Coatings-types of coatings and method of production. Waterproof breathability assessment techniques- measurement of resistance to penetration and absorption of liquid- Bundesmann rain tester, WIRA shower tester and AATCC rain tests, Measurement of Wind Resistance and Water Vapour Permeability-ASTM standards.

**TECHNICAL TEXTILES- I**

Assessment based on Cognitive process dimension:  
K1-Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Outcome	Section A 20 questions	Section B 5 questions	Section C 10 questions	Portion Covered in Units
CLO1	K1/K2	K4	K2/K2	I
CLO2	K1/K2	K4	K2/K2	II
CLO3	K1/K2	K4	K3/K3	III
CLO4	K1/K2	K4	K2/K2	IV
CLO5	K1/K2	K4	K3/K3	V

**READING LISTS AND RESOURCES**

Compulsory



1.	Handbook of Technical Textile, A.R. Horrocks and S.C. Anand, (2000). Woodhead Publishing Ltd
2.	Handbook of Properties of Textile and Technical Fibers, edited by A. R. Bunsell, Woodhead ,(2009). Elsevier Science
3.	Wellington Sears Handbook of Industrial Textiles. Adanur, S. (2017). United States: CRC Press.
4.	High-Performance Fibres, edited by J. W. S. Hearle ,(2001). United Kingdom: Elsevier Science.
5.	Structure and Properties of High-Performance Fibers, edited by Gajanan Bhat, (2016). Elsevier Science.
6.	Chemical Finishing of Textiles, By W D Schindler, P J Hauser,( 2004). Elsevier Science.
7.	Textiles for Protection, edited by Richard A. Scott,(2005). Elsevier Science.
8.	Waterproof and Water Repellent Textiles and Clothing, edited by John T Williams, (2017). Elsevier Science.
Highly Recommended, not Compulsory	
	
9.	Handbook of Medical Textiles, Edited by V Bartels, (2011). India: Elsevier Science.
10.	Smart Fibres, Fabrics and Clothing: Fundamentals and Applications Xiaoming Tao, (2001). Elsevier Science.
11.	Nano finishing of Textile Materials, By Majid Montazer, Tina Harifi , (2018). Elsevier Science.
Good for Students who have Future Interests	
	
12.	<a href="http://www.atjournal.com/">http://www.atjournal.com/</a>
13.	<a href="http://en.wikipedia.org/wiki/Technical_textile">http://en.wikipedia.org/wiki/Technical_textile</a>
14.	<a href="https://www.textileschool.com">https://www.textileschool.com</a>
15.	<a href="http://www.bch.in">http://www.bch.in</a>
16.	<a href="http://www.bbc.co.uk/schools/gcsebitesize/design/textiles/productiontechniquesrev5.shtml">http://www.bbc.co.uk/schools/gcsebitesize/design/textiles/productiontechniquesrev5.shtml</a>
17.	<a href="http://textilelearner.blogspot.com/2011/03/description-of-textile-finishing_1796.html">http://textilelearner.blogspot.com/2011/03/description-of-textile-finishing_1796.html</a>
18.	<a href="http://texmin.nic.in/sites/default/files/scheme_technical_textile_070116.pdf">http://texmin.nic.in/sites/default/files/scheme_technical_textile_070116.pdf</a>
19.	<a href="http://www.indiantextilejournal.com/news/NewsLine.asp?id=1105">http://www.indiantextilejournal.com/news/NewsLine.asp?id=1105</a>
20.	<a href="https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622">https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622</a>
21.	<a href="http://www.softtextile.biz/wwwsofttextilebiz/technical-textiles">http://www.softtextile.biz/wwwsofttextilebiz/technical-textiles</a>
22.	<a href="https://textInfo.files.wordpress.com/2012/10/handbook_of_technical_textile_.pdf">https://textInfo.files.wordpress.com/2012/10/handbook_of_technical_textile_.pdf</a>
23.	<a href="http://scitechnol.com/textile-engineering/technical-textile.php">http://scitechnol.com/textile-engineering/technical-textile.php</a>
24.	<a href="http://www.teonline.com/knowledge-centre/study-technical-textiles.html">http://www.teonline.com/knowledge-centre/study-technical-textiles.html</a>
25.	<a href="http://technotex.gov.in">http://technotex.gov.in</a>
26.	<a href="http://www.atjournal.com/">http://www.atjournal.com/</a>
27.	<a href="http://en.wikipedia.org/wiki/Technical_textile">http://en.wikipedia.org/wiki/Technical_textile</a>
28.	<a href="https://www.textileschool.com">https://www.textileschool.com</a>



**SEMESTER-I  
CORE PAPER -2  
INDIAN TEXTILES AND APPAREL INDUSTRY**

Course Code: 22UPTAD1C02	Marks: 100 marks Internal-25 External-75	
L:T:P 4:0:0	Course duration: 60 hrs	Credit:4
<b>Course Description:</b> 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.

**UNIT- II: Recent Progresses of Cotton and Sericulture Industry**

**Cotton Textile Industry:** Overview of cotton industry in India, key markets and export destinations, Production, Area and Productivity, Cotton consumption, Cotton Trade, cotton prices, Major cotton producing countries.

**Sericulture Industry:** Introduction, world silk production, Production and consumption of raw silk, performance of sericulture sector, Research and Development.

### 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, Export performance, Import of Raw jute and jute goods, Regulatory organizations in jute sector, major areas of Research in jute sector, Application of jute in technical textiles. Woolen Industry: Production and consumption, wool producing states, Import and export of wool, Research and development.

### 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).

Emerging Trends in E-Commerce of textile and apparel business, Vendor, how to register as a vendor, 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 India, Global Consumption of Non-woven, Market Potential in India, Growth Drivers of Non-woven and Market Overview.

Clusters: Definition, Cluster Concept, Policy framework for clusters in India, Mega Handloom Clusters, Power loom mega clusters, Tirupur Knitwear Clusters, Ludhiana Knitwear and Apparel Clusters and Karur clusters.

#### INDIAN TEXTILES AND APPAREL INDUSTRY

Assessment based on Cognitive process dimension:

K1-Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Outcome	Section A 20 questions	Section B 5 questions	Section C 10 questions	Portion Covered in Units
CLO1	K1/K2	K4	K2/K3/K4	I
CLO2	K1/K2	K4	K2/K3/K4	II
CLO3	K1/K2	K4	K3/K4/K5	III
CLO4	K1/K2	K4	K3/K4/K5	IV
CLO5	K1/K2	K4	K3/K4/K5	V

#### 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.	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
5.	The Complete Book On Textile Processing And Silk Reeling Technology, By Panda, H. (2010). India: NIIR Project Consultancy Services.
Highly Recommended, not Compulsory ★ ★	
6.	Textile Industry of India and Pakistan, By Milan Sharma ,(2006 ).APH Publishing
7.	Ministry of Textiles: texmin.nic.in
8.	Fibre2Fashion - Textile Magazine, (2018).Fibre2Fashion.
9.	Advances in Filament Yarn Spinning of Textiles and Polymers, edited by Dong Zhang,(2014).Elsevier.
Good for Students who have Future Interests ★	
10	<a href="https://www.fashionatingworld.com/...2/manmade-fibers-present-huge-scope-for-india">https://www.fashionatingworld.com/...2/manmade-fibers-present-huge-scope-for-india</a>
11	<a href="https://www.india.gov.in/development-mega-cluster-scheme-ministry-textiles">https://www.india.gov.in/development-mega-cluster-scheme-ministry-textiles</a>
12	<a href="http://www.csb.gov.in/silk-sericulture/silk/">www.csb.gov.in/silk-sericulture/silk/</a>
13	<a href="http://texmin.nic.in/about-us/textile-research-associations">texmin.nic.in/about-us/textile-research-associations</a>
14	<a href="https://www.india.gov.in/development-mega-cluster-scheme-ministry-textiles">https://www.india.gov.in/development-mega-cluster-scheme-ministry-textiles</a>
15	<a href="http://www.indiantradeportal.in/vs.jsp?lang=1&amp;id=0,30,50,206">www.indiantradeportal.in/vs.jsp?lang=1&amp;id=0,30,50,206</a>
16	<a href="http://texmin.nic.in/sites/default/files/Note_Woolen_Sector_wwt_skbabbar_0.pdf">texmin.nic.in/sites/default/files/Note_Woolen_Sector_wwt_skbabbar_0.pdf</a>
17	<a href="https://www.ibef.org">https://www.ibef.org</a> > Exports
18	<a href="http://www.dcmsme.gov.in/clusters/clus/indsme.htm">www.dcmsme.gov.in/clusters/clus/indsme.htm</a>

**SEMESTER-I  
CORE PAPER - 3  
APPAREL QUALITY STANDARDS & IMPLEMENTATION**

Course Code: 22UPTAD1C03	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 latest approaches in Apparel Quality Standards and the process involved in implementing the standards for different certification modules. It further demonstrates the environmental specifications for apparel production and the methods involved in the quality aspect of readymade garment manufacturing.

**Course Learning Outcomes (CLOs)**

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

S. No	Outcomes	Domains of Learning
CLO1	Describe the quality principles and quality standards prevailing internationally.	Cognitive Domain
CLO2	Determine the basic principles of TUV SUD and Social Accountability International (SA8000) Standards	
CLO3	Recommend the use of Eco - Standards, Certification and Specification in Apparel and Textiles – ISO 14000 Standards	
CLO4	Describe the TQM, Six Sigma, Accepted Quality Level and Readymade Garment Manufacturing quality process	
CLO5	Describe the durability characteristics of trims and test the garment quality and label Quality	

**CONTENTS**

**UNIT- I: Standards and Test Methods**

Introduction to Quality and Standards, QMS – ISO, ASTM, AATCC, BS, BIS, DIN, ISO – Effective tools for implementation, ISO/TC 38, 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, Alkalis, Crocking, Perspiration, Light, Dye and Pigment Migration, Aqueous Liquid Repellency, Water / Alcohol Solution Resistance, CEN(European Committee for Standardization).

## UNIT- II: TUV SUD and Social Accountability International

TUV SUD – TUV SUD Technical guidance on Nickel, Organo tin Compounds, Alkyl phenol ethoxylates, Chlorinated Organic Careers. 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 – REACH and STEP

## UNIT- III: Eco standards and Eco Specifications

Eco Standards and Certification – ISO 14000 and ISO 14001 Employees Safety, Eco Mark, OekoTex 100 Standards, GOTS – Requirements for Organic Fiber Production under GOTS, General Requirements for Chemical Inputs under GOTS, OHSAS Certification of BCI, GRS and Fair trade

Eco Specifications and restrictions in Apparel and Textiles – Sensitizing dye stuffs, Allergic dyes, Carcinogenic amines, red listed as per eco specifications, chemicals used in dry cleaning which deplete ozone, pH Value, Formaldehyde contents, heavy metal contents, pesticides and herbicides, azoic dyestuffs.

## UNIT- IV: Total Quality Management and Accepted Quality level

TQM – Implementation phases of TQM – 5'S, Daily Work Management (DWM), Six Sigma – SIPOC flow at garment industry. Accepted Quality Level (AQL) – AQL 1.5, AQL 2.5, AQL 4.0, AQL1.0, AQL 6.5, AQL10 C0. Manufacturing of Readymade Garments (RMGs) – Defect analysis – Zero Defect – 3M's for approaching Zero Defects, Stage wise defect occurrence in RMG Production.

## 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: Labelling parameters, Eco – labelling.

### APPAREL QUALITY STANDARDS & IMPLEMENTATION

Assessment based on Cognitive process dimension:

K1-Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Outcome	Section A 20 questions	Section B 5 questions	Section C 10 questions	Portion Covered in Units
CLO1	K1/K2	K4	K3/K4/K5	I
CLO2	K1/K2	K4	K2/K3	II
CLO3	K1/K2	K4	K2/K3/K4	III
CLO4	K1/K2	K4	K2/K3/K6	IV
CLO5	K1/K2	K4	K3/K5/K6	V

## 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. Quality Planning and Analysis: From Product Development Through Use, By Joseph M. Juran, Frank M. Gryna,(1982).Tata McGraw-Hill
3. Managing Quality in the Apparel Industry, By Mehta, P. V., Bhardwaj, S. K. (1998).India: New Age International (P) Limited.
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. Managing Quality in the Apparel IndustryPradip V. Mehta, Satish K. Bhardwaj ,(1998).New Age International
7. Eco textiles: The Way Forward for Sustainable Development in Textiles, edited by M Miraftab 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 – 4**  
**FASHION AND GRAPHIC DESIGNING PRACTICAL**

Course Code: 22UPTAD1C04	Marks: 100 marks Internal-40 External-60	
L:T:P 0:0:4	Course duration: 30 hrs	Credit:2

**Course Description:**

This course updates the students to use Corel Draw Software very effectively for multiple domains. They can further work with advanced graphics including the older version to upcoming new version of this software.

**Course Learning Outcomes (CLOs)**

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

S. No	Outcomes	Domains of Learning
CLO1	Describe the Corel draw workspace, tools, shortcuts keys and file formats.	Cognitive &Psychomotor Domain
CLO2	Perform application of colours, colour swatches and various fill options by applying tracing and drawing tools	
CLO3	Create typography styles using align and distribution, repeat setting and apply countless effects to texts.	
CLO4	Design different styles of garment for men’s, women’s and children	
CLO5	Develop different styles of accessories for men’s, women’s and children	

**CONTENTS**

**UNIT- I: Corel Draw & its applications.**

About tools and the menu bar, How to create a new document, Corel Draw Tool and its features: Shortcut keys and uses, Importing and exporting images, new page layout and size creation, Saving and printing the file, Convert Corel Draw to JPEG format and AI format. What is the GIF format, CRD format, JPEF format, PNG format. Print Publishing: Print preview and setup, then print the designs. rulers, grid guidelines, and wire frames.

**UNIT- II: Tracing& Drawing**

Tracing and drawing with the pen tool and freehand tool, adjusting anchor points with the pen tool and shape tool, Adding outline strokes and sizes, Copy and paste objects, shaping the objects, Weld, trim, intersect, simplify, front minus back, back minus front, Duplicate the object. How to Draw the Men’s and Women’s Silhouettes. How to give an outline of the object, Increasing

and decreasing the outline point, Colour Palette: uniform fill, Colour the objects. colour models- RGB and CMYK colours, creating, opening, and editing custom colour palettes, Palette Editing, Make colour swatches, Texture fill dialog, pattern fill dialog, Gradient effect with fountain fill.

### UNIT- III: Align & distribution Repeat Settings, Layer management Effects

Align and distribution: Align and distribute objects on art boards. Align an object with another object. Repeat Settings: Transformation, Position the object; Rotate the object, Scaling and sizing the object Layer management: To forward the object; To back the object. Effects: New perspective drawing features, Colour balance; Hue saturation, Brightness, and contrast. Contouring the objects. Power clip the images. Extract and edit the images. Bitmapping the image and giving the effects. Creating objects with volume and 3D Appearance.

### UNIT- IV: Character & Graphics

Character: Work with text, typography, and uses, managing sizes. Typography design: font addition and removal. Draw or trace flowers and objects, draw vector graphics and add colors, draw graphics mixed with Photoshop layers, draw typography graphics, and fix them to silhouettes. Use the CorelDraw template workflow to share, sync, and manage symbols with the Assets docker.

### UNIT- V: Designing for a brand

Create your own brand name and logo. Create your own visiting card. Create your company letterhead. Create your clothing line with accessories, for example (men's wear, women's wear, children's wear). Colour the garment, draw accessories like belts, shoes, caps, buttons, bows, and buckles. Design labels, tags, boxes, and bags. Create your brand's advertisement poster for social media. Create a holiday greeting for your customers. Create a promotion invitation

### READING LISTS AND RESOURCES

Compulsory



1. CorelDraw 12: The Official Guide, Steve Bain, (2004). Dreamtech press
2. CorelDRAW X7: The Official Guide, Gary David Bouton, (2014).McGraw Hill Professional
3. COREL DRAW TRAINING GUIDE Satish Jain/M.Geetha , (2018).BPB Publications

Highly Recommended, not Compulsory



4. CorelDraw 10 for Windows, By Phyllis Davis, Steve Schwartz (2002).Peachpit Press

Good for Students who have Future Interests



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



**SEMESTER-I**  
**CORE PAPER - 5**  
**FABRIC STRUCTURE ANALYSIS PRACTICAL**

Course Code: 22UPTAD1C05	Marks: 100 marks Internal-40 External-60	
L:T:P 0:0:4	Course duration: 30 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: <ul style="list-style-type: none"> <li>Ends and Picks Per inch &amp; Count of warp and weft by Pick Glass method for woven fabrics</li> <li>Identification of crimp percentage for woven fabrics</li> </ul>	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**

Analyze the given fabric swatch and furnish the following details.

Plain weave, Matt weave, Twill weave, Herring-bone twill weave, Pointed twill weave, Satin weave and Sateen weave.

- a) Design b) Draft c) Peg-plan d) Ends and Picks per inch e) Count of warp and weft f) Grams/Sq. Mt g) Crimp

**UNIT- II: Analysis of Decorative/Fancy weaves**

Analyze 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, 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/Sq. Mt g) Crimp

### UNIT- III: Analysis of Weft and Warp Knitted fabrics

Analyze the given fabric swatch and furnish the following details.

Weft Knitted fabrics: Single jersey Plain, 1 X 1 Rib, Interlock Pique, Honeycomb, Flat back rib, Cardigan, Derby rib.

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/ Sq. Mt

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

Analyze 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/ Sq. Mt

### 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. | “Knitting Technology”, AjgaonkarD.B., (1998). Universal Publishing Corporation, Mumbai                       |

Highly Recommended, not Compulsory



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

Good for Students who have Future Interests



- |     |   |
|-----|---|
| 8.  | <a href="https://www.textileadvisor.com">https://www.textileadvisor.com</a> › 2018/11 › fabric-analyses     |
| 9.  | <a href="https://www.textileebook.com">https://www.textileebook.com</a> › Textile Design                    |
| 10. | <a href="https://www.scribd.com">https://www.scribd.com</a> › doc › knitted-fabric-analysis-calculation     |
| 11. | <a href="https://www.researchgate.net">https://www.researchgate.net</a> › publication › 277075606_Analysis_ |

**SEMESTER-1**  
**CORE PAPER –6**  
**ADVANCED SEWING PRACTICAL**

Course Code: 22UPTAD1C06	Marks: 100 marks Internal-40 External-60	
L:T:P 0:1:4	Course duration: 45 hrs	Credit:3
<p>Course Description:</p> <p>This course covers skill and knowledge about the advance industrial machineries and operation techniques. Students learn to design and develop a creative product.</p>		

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**

<ol style="list-style-type: none"> <li>1. Sewing machine attachments</li> <li>2. Static &amp; dynamic</li> <li>3. Horizontal guide attachments &amp; Vertical guide attachments.</li> <li>4. Folders</li> <li>5. Piping folder</li> <li>6. Sleeve attachments</li> <li>7. Side attachments</li> <li>8. Loop attachments &amp; hemming attachments.</li> <li>9. Footers</li> <li>10. Double action footer</li> <li>11. Gathering</li> <li>12. Ruffles</li> <li>13. Zipper</li> <li>14. Rolled hem</li> <li>15. Right angle bias attachments</li> <li>16. Single fold bias binder</li> <li>17. Tape binder</li> <li>18. Cord edge piping</li> </ol>	<p>Operation techniques using footers and folders</p>
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## 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

1. Construct Quilting bag
2. Mobile pouches
3. Chair covers
4. 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-1

### ELECTIVE SPECIALIZATION - FASHION DESIGNING (FD)

#### GARMENT STYLING

Course Code: 22UPTAD1E01	Marks: 100 marks Internal-25 External-75	
L:T:P 2:1:2	Course duration: 75 hrs	Credit:4
<b>Course Description:</b> 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 colour principles and techniques.	

## CONTENTS

### UNIT- I : Categories of fashion and Technical design terms and technical sketches

Categories of fashion & size ranges

1. Prepare a table of basic categories in women's apparel and size ranges.
2. Prepare a table of basic categories in men's apparel and size ranges.
3. Prepare a table of basic categories in children's apparel and size ranges.

Garment Terminology: Terminology of a shirt, dress, jacket, pants, and hats.

Drawing specifications: Understand different types of sketches: Personal sketch, fashion sketch, floats and flats. What is a technical sketch. What is float and flat, how are floats and flats different? How are they similar. Prepare a technical sketch for a shirt and show the font size and line weights.

Drawing to scale of technical sketch (flats): What is 1:8, 1:4 and 1:1 scale and where it is applicable. Draw a flat sketch of women's tank top, men's long sleeve knit shirt, pants to scale 1:8

with correct stitch details by hand drawing method. Other details to be included in drawing flats: Side views, imaginary position and inside views.

## **UNIT- II : Elements and Principles of Design, Silhouettes & Design details related to silhouettes**

### Elements & Principles of Design

#### Silhouettes:

1. Silhouettes changes by waist position: Define the terms sheath, empire waist, high waist, dropped waist and chemise silhouettes and draw the silhouettes
2. Classic dress silhouettes defined by shape: Define the terms Trapeze or tent, tunic and skirt, jumper, princess, baby doll and surplice and draw the silhouettes
3. Dress Silhouettes changed by design details: Define the terms Shirt waist, coatdress, slip dress, peasant, cheongsam and caftan draw the silhouettes
4. Skirt silhouette defined by shape and design details: Define the terms basic straight skirt, gored skirt, sarong skirt, dirndl skirt, pegged skirt, pouf skirt, culotte, trumpet skirt, peasant or gypsy skirt, hobble skirt, gathered flared skirt and draw the silhouettes.
5. Silhouettes based on the length of the garment. Draw the outline of skirt and pant -name the parts of different length.
6. Pant silhouettes defined by shape and design detail: Define the terms Bell bottoms, drawstring pant, active pant, trouser style, knickers and draw the silhouettes.
7. Overalls: Define the terms Bib overalls, pegged, paper bag waist, palazzo, harem, jodhpurs, dhoti, gaucho.
8. Women's underwear category: Define the terms and draw Bottom styles: Full cut brief, high cut brief, boy cut, bikini brief, string bikini, thong.
9. Brassiere: Parts of bra and draw women's bra styles

#### Design Details related to silhouette of garment:

1. Sleeve and cuff : Define the terms and draw set in sleeves with various caps (High cap height, medium cap height, no cap) set in sleeve variation for short sleeve (cap, tulip, puff, lantern, flutter, cuff and pinafore) set in sleeve variations for long sleeve (Tailored with French cuff, gathered, bishop, bell, log o mutton, Juliet, peasant) set in sleeve variations for outer wear (Knit cuff, rugged outerwear cuff, trench coat, motorcycle, polo overcoat, tailored overcoat) raglan variations (Raglan sleeve straight seam, raglan sleeve shaped seam, saddle sleeve) kimono and dolman (Kimono sleeve with gusset, dolman sleeve batwing variation, dolman variation)
2. Necklines: Define the terms and draw different shapes of neckline (square, crew, keyhole, v neck, scoop, sweetheart, ballet, bateau (boat), cowl, halter, one shoulder, asymmetrical,

peasant, decollete, built-up neckline), Technical aspect of neck design: draw specs for necklines.

3. Collars: Define the terms and draw Collar styles (polo, mock turtle, Henley, tailored shirt, convertible closed, convertible open, wing, mandarin, Peter pan, bow collar, Jonny, cascade bertha, sailor, shawl), Technical aspects of collar design, lapel styles (peak, fish mouth, double breasted, round peak, clover) and shawl collar variations (shawl variations, scalloped shawl, notched shawl, reverse)
4. Pockets: Define different types of pockets (patch pocket, single welt, seam to seam pocket, on-seam pocket)

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

Garment shaping devices:

1. Influence of single and double-pointed darts in apparel fitting, technical aspects of dart design. Draw the darts details on a bodice.
2. Uses of pleats in garment styling, types of pleats: Knife pleats, Box and inverted pleats, cluster pleats, mechanically engineered pleats (accordion, crystal and sunburst) , designers' choices of pleats: straight pleats, contoured pleats, tapered pleats, Placement variations for design detail: Side pleats, action pleats, style pleats, kick pleats. Draw the fabric and estimate for the pleat.
3. Use gathers in garment styling, draw the gathering details on a bodice and bottoms.
4. Application of easing in tailored garment. Draw the position of easing in tailored garment
5. Application of elastic, draw cord and lacing as shaping device.
6. Seam shaping: Define the terms and draw the application area of Princess seams, Gores (4 -gore line, 6-Gore line and 10-Gore trumpet flare) yoke (variation of yoke) godets (variation of godets on skirts) gussets (draw gussets on bodice and pants) slits and vents (draw slits and vents in tops and bottom).
7. Designers' choices of various shaping devices. Create 12 tops by mixing and matching the shaping devices.

Style variables and characteristics :\_Give details and illustrate.

1. Tops-Tee shirts: Draw Tee, Henley, Polo, Tank, camisole, racerback, sports bra, double layer tee, trapeze tee, tee shirt dress, sweatshirt, hoodie, thermal fleece layering.
2. Shirts and blouses: Draw the Shirt, Tuxedo shirt, Western cut, blouse, shell, peasant blouse, camp shirt, tunic, surplice wrap top
3. Dresses: Draw Sheath, A-Line, Princess, Empire waist, Dropped waist, Fit and flare, Tent-trapeze, strapless, shift, wedge, shirt waist, shirt dress, coat dress, maxi.

4. Skirts: Draw Straight, pegged, A-Line, Dirndl, flare, circle, yoke, kilt, sunburst pleating, knife pleating, box pleats, inverted pleat, coulotte, gored, wrap, trumpet, tiered/peasant, hi-low, handkerchief, sarong, gaucho.
5. Pants: Draw Flat front pleated wide leg/flared, cigarette, tuxedo, capri, ochy, 5 pocket jean, boot cut/stove pipe-jean, bell bottoms, elephant leg pant, daisy duke/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**

Fabrics: Importance of fabrics and its usage for apparel products, explain hand, hand sample, role of yarn size that makeup fabrics.

1. Woven fabric and its terminology - Lengthwise grain, selvedge, crosswise grain, bias, true bias, draw and show the application of bias cut for various parts of a garment, draw the areas of bias used as a trim, what happens if garments cut off grain, bowed fabric and fabric skew, Woven fabric weight – selection indicator and weight comparison.
2. Fabric terminology for weft knit and jersey construction, types of knits, quality issues related to knit fabric.
3. Fabric layout, making markers, Plaid and pattern matching, matching even plaids, matching uneven plaids, cutting instructions matching plaids for some areas of garments.
4. Technical design aspects of cutting: 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
5. Develop the understanding of different fabrics and how it drapes embellished or embroidered fabrics.

Prints:

1. Popular Printing techniques: Screen Printing, Digital Printing techniques, Foil Printing
2. List the current print patterns by visiting e.com portal of fabric suppliers
3. Traditional dyeing and printing techniques: Methods, techniques, application, colours and motifs used.
  - 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.
  - Mordant Painted textiles- Kalamkari of Sickenaiikkenpet, Kodali karuppur of Tamil Nadu, Matai-ni-pachhedi of Ahmedabad, Kanat of Golconda of Telangana, Kalamkari of Masulipatnam, Kalamkari of Srikalahasti.



- Printed textile Practices – Bagru, Sanganer and Khari of Rajasthan, Ajrakh, Rogan, Saudagiri, Mud, Khari of Gujarat, Bagh and Khari of Madhya Pradesh.
- Resist dyed textiles- Fabric: Laheriya, Mothra, Bhopalshahi, Bandhani/ Bandhej.
- Yarn resistant textiles – Patola and Mashru of Gujarat, Pochampalli of Telengana, Telia Rumal of Andhra Pradesh, Bandhas of Odisha

## **UNIT- V : Colour and styling techniques**

### **Colour:**

1. Colour wheel ( primary colours, secondary colours, tertiary colours), additive colour system, subtractive system, CMYK colour system, PMS system and RGB system
2. Characteristics of colour : Hue, value, saturation, tint, tone, Shade, mute, fluorescent, warm, cool, neutral.
3. Positive and negative factors of Primary, secondary and neutral colours
4. Colour harmony: Complementary, split complementary, double complementary, near complement, double complement, analogous, triadic, tetradic and monochromatic, accented neutral.
5. Rules for building the colour palette
6. Combining colours: Build colour schemes with hues of 12 step colour wheel.
7. The power of contrast: explore the seven types of contrast
8. Colour composition: Proportion and saturation, Principles of figure and ground, Symmetry: symmetrical balance, Radial balance, Approximate symmetry, Asymmetrical balance
9. Colour and colour ways: Considering various tones and saturations within one colour, experimenting with different textures of hue.
10. Seasonal colour palette, developing colour palette to give more options
11. Colour proportions: contrast of quantity, contrast of saturation, contrast of value, contrast of neutral and chroma, contrast of temperature

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.

## GARMENT STYLING

Assessment based on Cognitive process dimension:

K1-Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Outcome	Section A 20 questions	Section B 5 questions	Section C 10 questions	Portion Covered in Units
CLO1	K1/K2	K4	K3/K4/K6	I
CLO2	K1/K2	K4	K3/K4/K6	II
CLO3	K1/K2	K4	K3/K4/K6	III
CLO4	K1/K2	K4	K3/K4/K6	IV
CLO5	K1/K2	K4	K3/K4/K6	V

### 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



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

**SEMESTER-1**

ELECTIVE SPECIALIZATION – ENTREPRENEURSHIP DEVELOPMENT (ED)

**TEXTILE BUSINESS STARTUP PRACTICAL**

Course Code: 22UPTAD1E02	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	
CLO4	Demonstrate the registration process of start-up	
CLO5	Write business plan	

**CONTENTS****UNIT- I: Fundamentals of Start-up Creativity and Innovation**

1. Entrepreneurial Mind, Entrepreneurial Mindset, 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

6. Problem validation and discovery: Evaluate the customer motivation and commitment
7. Identifying target segment and market sizing
  - Understand your target segment
  - Sizing the market
  - Analysing the environment and competitive advantage
  - Feasibility analysis

### 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

1. Importance of Business plan
2. Elements of Business Plan
3. Format of a Business Plan
4. Creating an effective business plan

### READING LISTS AND RESOURCES

#### Compulsory



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|----|---|
| 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)                                  |

#### Highly Recommended, not Compulsory



- |    |   |
|----|---|
| 6. | 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



- |    |  |
|----|--|
| 7. | Value Proposition Design, How to Create Products and Services Customers Want By Alexander Osterwalder, Yves Pigneur, Gregory Bernarda, Alan Smith, Trish Papadacos. (2015) |
|----|--|

## SEMESTER- 1

ELECTIVE SPECIALIZATION : APPAREL EXPORT MANUFACTURING (AEM)

### INDUSTRIAL ENGINEERING(IE)

Course Code: 22UPTAD1E03

Marks: 100 marks

Internal-25 External-75

L:T:P 2:1:2

Course duration: 75hrs

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, Types - Centralized IE and Factory IE, Job positions of IE. Basic knowledge and skills needed for IE. Resource utilization and arrangement for various styles of Garment production. Preproduction meeting.

### UNIT- II: Production Follow-Up

Analyze garment operations – operation bulletin, Time study-Tools, Method and Template, Operator cycle time (OCT) Chart, General sewing data (GSD), Standard allowed minute (SAM) calculation, production plan-Target setting - Target Achieving techniques-Valuable and non-valuable time- Operator Training.

### UNIT- III: Production Build-up

Consumption – Thread – fabric. Avoid thread wasting in sewing line. Costing – operation wise, Batch cost and profit & loss calculations. Production reports – Hourly production, day production and 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 the bligs and motion.

#### UNIT- V: Production Management

Layout: Types- Batch Setting – Change over 5S Analysis, Line balancing, Bottle Neck Analysis, Down time management, WIP management, Waste Observation(TIMWOOD) Method, Method Study, Man, Machine Ratio, Motivation and Combination Important.

### INDUSTRIAL ENGINEERING(IE)

Assessment based on Cognitive process dimension:

K1-Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Outcome	Section A 20 questions	Section B 5 questions	Section C 10 questions	Portion Covered in Units
CLO1	K1/K2	K4	K2/K4	I
CLO2	K1/K2	K4	K2/K3/K4	II
CLO3	K1/K2	K4	K3/K4/K5	III
CLO4	K1/K2	K4	K3/K4/K5/K6	IV
CLO5	K1/K2	K4	K2/K3/K4	V

#### 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 Interests



8. <https://www.onlineclothingstudy.com/2021/10/industrial-engineering-in-garment.html#:~:text=In%20the%20garment%20business%2C%20industrial,by%20the%20industrial%20engi neering%20team.>
9. [https://www.researchgate.net/publication/322950792\\_Industrial\\_Engineering\\_in\\_Apparel\\_Manufacturing](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](https://www.youtube.com/watch?time_continue=4&v=qXFUqCijkUs&feature=emb_logo)
11. <https://youtu.be/NzhUZ6jyrtU>

<b>SEMESTER- 1</b>		
<b>ELECTIVE SPECIALIZATION : FASHION COMMUNICATION</b>		
<b>VISUAL MERCHANDISING</b>		
Course Code: 22UPTAD1E12	Marks: 100 marks Internal-25 External-75	
L:T:P 2:1:2	Course duration: 75 hrs	Credit:4
<b>Course Description:</b> 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 tool box, Visual merchandisers in department store, Multiple chain store and small retail outlets. Broad areas of Visual display-Exterior and Interior, Store layout types, Virtual Visual Merchandising.  
Display Design Basics-Line, composition, Texture, Colour and Lighting.

### **UNIT- II: Exterior Display**

Exterior Presentation: Exterior Signs, Store entrance, Marquees, Banners, Awnings, Walks and Entries and Landscaping

### UNIT- III: Interior Display

Interior Presentation: Interior display in selling area and sales support area, Areas of display- Windows, Highpoints, Focal points, Nesting Tables, Staircase landings, Step raisers, Lift area, Dangers, Cash counters, pillars, and entrances. Planogram, strategy for creating attractive retail display.

### 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:

Fixtures: Types of fixtures, selecting display fixtures.

Signage: What signage can do for customer, retailer, vendor and community, various types of signs.

Props: Advantages and types of props. Role of mannequins in clothing store for effective visual presentation.

Common errors in creating window display, Promotional and seasonal display techniques

### VISUAL MERCHANDISING

Assessment based on Cognitive process dimension:

K1-Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Outcome	Section A 20 questions	Section B 5 questions	Section C 10 questions	Portion Covered in Units
CLO1	K1/K2	K4	K3/K4/K5	I
CLO2	K1/K2	K4	K3/K4/K6	II
CLO3	K1/K2	K4	K3/K4/K5/K6	III
CLO4	K1/K2	K4	K3/K4/K5/K6	IV
CLO5	K1/K2	K4	K3/K4/K5	V

### READING LISTS AND RESOURCES

Compulsory



1. Visual Merchandising, Swati Bhalla, Anuraag S, (2010). Tata McGraw-Hill Education
2. Visual Merchandising for Fashion, Sarah Bailey, Jonathan Baker, (2014). A&C Black
3. Fashion Retailing: A Multi-Channel Approach, Diamond, (2007). Pearson Education India



4.	Retail Product Management: Buying and merchandising, Rosemary Varley, (2014). Routledge
5.	Retail Business Kit for Dummies, Rick Segel, John Wiley & Sons, (2009)
6.	Visual Merchandising: window and In-store displays for retail store, Third Edition, Tony Morgan, (2016). Laurance King Publishing
Highly Recommended, not Compulsory ★ ★	
7.	Stores of the Year, Issue 12 Martin, (2000). M. Pegler Visual Reference Publications
8.	Store Presentation & Design: An International Collection of Design, (2004). Martin M. Pegler Visual Reference Publications.
Good for Students who have Future Interests ★	
9	Visual Merchandising and Display: Studio Instant Access, 7th Edition, Martin M. Pegler, Anne Kong, (2018). Bloomsbury Academic
10	Silent Selling: Best practices and effective strategies in visual merchandising, 3 <sup>rd</sup> Edition, Judith A. Bell, Kate Ternus, (2006). Fairchild Publications