

PERIYAR UNIVERSITY

PeriyarPalkalai 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 2018-2019 and thereafter)

## M.Sc. Textiles and Apparel Design

### Regulations and Syllabus

(Effective from the academic year 2018-2019 and thereafter)

The department was established during the year 2014-2015. The Post graduate course offered by the department is M.Sc. Textiles and Apparel Design which gives an in-depth knowledge of designing, export merchandising, fashion retailing, technical textiles, textile testing, professional sewing and construction and computer application in designing. The Programme is aimed with the following objectives

- a) To provide professional education covering the whole spectrum of activities in Textiles and Apparel
- b) To train every individual to serve as an Apparel/Textile Designer, Retail and Export Merchandiser, Fashion trend consultant and Quality controllers
- c) To promote Self Employment

#### Duration of the Programme

The two-year postgraduate program in M.Sc. Textiles and Apparel Design consists of four semesters under Choice Based Credit System.

#### 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.

#### Teaching Methodologies

The teaching method will be “Student Centered approach” with traditional and modern approach like problem solving, field trip and demonstration.

#### 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.

Scheme for Internal marks	
Theory	Marks
Seminar & Assignment	10 (Each 5 marks)
Internal Tests	10 (Best two out of three tests: Each 5 marks)
Attendance	05
<b>Total</b>	<b>25</b>
Practical	Marks
Internal Tests	25 (Best two out of three tests: Each 12.5 marks)
Attendance	05
Record	10 (Average of marks obtained for each experiment in observation note book)
<b>Total</b>	<b>40</b>

### Scheme for valuation

Evaluation will be done on a continuous basis and will be evaluated four times during the course work. The first evaluation will be in the 7th week, the second in the 11th week, third in the 16th week and the end – semester examination in the 19th week. Evaluation by objective type questions, short answers, essays or a combination of these, but the end semester examination is a University theory examination with prescribed question paper pattern.

Scheme for Valuation for Dissertation	Marks
Internal	50
External	130
Viva Voce	20
<b>Total</b>	<b>200</b>

Credit Hours Calculation		
Lecture(L)	Tutorial(T)	Practical(P) Field Work(F)
1 Hour=1 Credit	1 Hour=1 Credit	2 Hour=1 Credit

### QUESTION PAPER PATTERN

PART - A (20x1=20 Marks)

Objective Type Questions

PART - B (3X5=15 Marks)

Analytical Questions (Write any 3 Questions out of 5)

One Question from Each Unit

PART - C (5X8=40 Marks)

Either or Type

Descriptive Questions

## **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. Team work 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 organisations' 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, analysing 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.

**MAPPING OF PROGRAMME OUTCOMES (POs) WITH PROGRAMME SPECIFIC OUTCOMES (PSOs)**

Programme Education Objectives (PEOs)	Programme Outcomes(POs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A 1	A 2	A 3	A 4	B1	B 2	B3	C1	C2	C 3	C4	C 5
PEO1	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
PEO2	✓			✓							✓	
PEO3	✓		✓		✓		✓	✓			✓	
PEO4	✓	✓					✓	✓	✓		✓	

## MAPPING OF PROGRAMME SPECIFIC OUTCOMES (PSOs) WITH COURSES

Type	Units	Courses	A.Knowledge&Understanding				B.Practical Skills			C.Transferable Skills				
			A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
LEC	5	Research and Design	Red			Red	Red		Red		Red	Red	Red	Yellow
LEC	5	Technical Textiles-I	Red	Blue	Blue	Blue				Yellow	Red	Blue	Blue	Red
LEC	5	Indian Textiles and Apparel Industry	Red		Yellow	Yellow				Blue	Red		Red	
LEC	5	Apparel Quality Standards and Implementation	Red	Red	Yellow			Yellow			Red	Yellow	Red	
LAB	5	Corel Draw Practical	Blue		Yellow	Yellow	Red		Red	Yellow	Red	Red	Red	
LAB	2	Fabric Structure Analysis Practical				Yellow		Red					Blue	
LAB	5	E1.Advanced Fashion Draping Practical	Blue		Red	Blue	Red		Red	Red	Blue	Red	Red	Blue
LAB	5	E1.Textile Business-Start Up Practice	Blue	Red	Red	Blue	Red		Yellow	Red	Red	Red	Red	Red
LEC	5	Sustainable Development for Textiles	Red	Red	Blue	Red	Red		Yellow	Red	Red	Red	Red	Red
LEC	5	Technical Textiles-II	Red		Red	Red				Red	Red	Red	Red	Blue
LEC	5	Non Conventional Natural Fibers	Red	Yellow	Red	Red		Red		Red	Red	Red	Red	Red
LAB	5	Photoshop for Graphic and Fashion Design Practical	Red		Blue		Red	Blue	Red	Yellow	Yellow	Red	Red	
LAB	5	Fashion Illustration Practical	Yellow		Red	Yellow			Red		Blue	Red	Red	Blue
LAB	5	E2.Export Merchandising Practice	Red	Blue	Blue	Red	Red		Yellow	Red	Red	Red	Red	Red
LAB	5	E2.Professional Design and Construction	Red	Yellow	Red	Red	Red	Yellow	Red	Red	Red	Red	Red	Red
EL	-	Summer Internships(6 Weeks)	Red	Red	Red	Red	Blue	Yellow		Blue	Red	Red	Red	Red
LEC	5	Research Methodology	Blue	Yellow		Red		Red	Yellow	Red	Blue	Red	Red	Red

		and Statistics	Strong	Low	No	Strong	No	Strong	Low	Strong	Average	Strong	Strong	Strong
LEC	5	Textile Testing	Strong	Strong	No	Strong	No	No	No	No	Average	Average	Strong	Average
LEC	5	Standards and Specifications for Textiles	Strong	Strong	Strong	Strong	No	Strong	Average	Strong	Strong	Strong	Strong	Average
LAB	5	Textile Testing Practical	Strong	Strong	No	Strong	No	Strong	No	Average	Strong	Average	Strong	Average
LAB	5	Computerized Pattern making Practical	Strong	No	Strong	No	Strong	No	Strong	Strong	Strong	Strong	Strong	Average
LEC	5	E3.Intellectual Property Rights to Textiles and Fashion	Strong	No	Low	Average	No	No	No	Average	Strong	No	Strong	Low
LEC	5	E3.Visual Merchandising	Strong	No	Strong	Average	Average	No	Strong	Strong	Strong	Strong	Strong	Strong
LEC	5	E3.Clothing and Boutique Management	Strong	Low	Strong	Average	Low	No	Average	Strong	Strong	Strong	Strong	Strong
LEC	5	Sourcing and Buying for Retail Merchandising	Strong	Low	Strong	Low	Average	No	Average	Strong	Strong	Strong	Strong	Strong
LAB	5	Designing with Illustrator Practical	Strong	No	Low	Strong	Strong	No	Strong	Low	Strong	Strong	Strong	Low
CR	-	Project and Viva voce	Strong	Strong	Low	Strong	Strong	Average	Average	Low	Strong	Strong	Strong	Strong

LEC - Lecture ,LAB - Laboratory , EL- Experiential Learning, CR – Core Research

Strong Contribution 71%-100%
  Average Contribution 31%-70%
  Low Contribution 1%- 30%
  No Contribution



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

<b>SEMESTER – I</b>											
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	18UPTAD1C01	Research and Design	4	0	0	4	3	25	75	100	
2	18UPTAD1C02	Technical Textiles - I	4	0	0	4	3	25	75	100	
3	18UPTAD1C03	Indian Textiles & Apparel Industry	4	0	0	4	3	25	75	100	
4	18UPTAD1C04	Apparel Quality Standards & Implementation	4	0	0	4	3	25	75	100	
5	18UPTAD1C05	CorelDraw practical	0	0	4	2	3	40	60	100	
6	18UPTAD1C06	Fabric Structure Analysis Practical	0	1	4	3	3	40	60	100	
<b>DISCIPLINE RELATED ELECTIVE (E) FOR SPECIALIZATION (OPTIONAL)</b>											
Designing & Entrepreneurship											
7	E1 18UPTAD1E01	a) Advanced Fashion Draping Practical	0	1	4	3	3	40	60	100	
	18UPTAD1E02	b) Textile Business – Start-up Practice									
<b>ONLINE COURSE(O)</b>											
8	18UPTAD1M01	MOOC	0	0	0	4	0	0	0	0	
		Total	30			28	-			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	18UPTAD1C07	Sustainable Development for Textiles	4	0	0	4	3	25	75	100
10	18UPTAD1C08	Technical Textiles-II	4	0	0	4	3	25	75	100
11	18UPTAD1C09	Non-Conventional Natural Fibers	4	0	0	4	3	25	75	100
12	18UPTAD1C10	Photoshop for Graphic & Fashion Design Practical	0	0	4	2	3	40	60	100
13	18UPTAD1C11	Fashion Illustration Practical	0	0	6	3	3	40	60	100
<b>VALUE EDUCATION (Self Study)</b>										
14		Human Rights	0	0	0	2	3	25	75	100
<b>SKILL BASED ELECTIVE (E) FOR SPECIALIZATION (OPTIONAL)</b>										
(J) Job (S) Self Employment (D) Designing (E) Entrepreneurship										
15	E2 18UPTAD1E03	a) Export Merchandising Practice (J)	0	1	4	3	3	40	60	100
	18UPTAD1E04	b) Professional Design & Construction Practical (S, D)								
	18UPTAD1E05	c) Fashion Photography (E)								
<b>SUPPORTIVE COURSE (S)</b>										
(Can be chosen from Pool of papers offered by other departments)										
16	S1	Supportive to the discipline of the study, Exposure to Un related discipline, Enhancing Proficiency Skill	3	0	0	3	3	25	75	100
<b>INTERNSHIP (EXPERIENTIAL LEARNING)</b>										
Career Exploration and Problem Identification for Research										
17	EL	Summer Internship (6 Weeks)	0	0	0	0	0	0	0	0
Total			30			25	-			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>										
18	18UPTAD1C12	Research Methodology & Statistics	4	0	0	4	3	25	75	100
19	18UPTAD1C13	Textile Testing	4	0	0	4	3	25	75	100
20	18UPTAD1C14	Standards & Specifications for Textiles	4	0	0	4	3	25	75	100
21	18UPTAD1C15	Textile Testing Practical	0	0	6	3	3	40	60	100
22	18UPTAD1C16	Computerized pattern making Practical	0	3	2	4	3	40	60	100
23	18UPTAD1I01	Internship Assessment	0	0	0	2	0	40	60	100
<b>SCOPE ENHANCEMENT ELECTIVE (E) FOR SPECIALIZATION (OPTIONAL)</b>										
(R) Research (T) Teaching (j) Job (E)Entrepreneurship										
24	E3 18UPTAD1E06	a) Intellectual Property Rights to Textiles & Fashion (R)	4	0	0	4	3	25	75	100
	18UPTAD1E07	b) Modern Pedagogy (T)								
	18UPTAD1E08	c) Visual Merchandising (J)								
	18UPTAD1E09	d) Clothing and Boutique Management (E)								
<b>SUPPORTIVE COURSE (S)</b>										
(Can be chosen from Pool of papers offered by other departments)										
25	S2	Supportive to the discipline of the study, Exposure to Un related discipline, Enhancing Proficiency Skill	3	0	0	3	3	25	75	100
<b>ONLINE COURSE(O)</b>										
26	18UPTAD1M02	MOOC	0	0	0	4	0	0	0	0
		Total	30			30	-			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	18UPTAD1C17	Sourcing and Buying for Retail Merchandising	4	0	0	4	3	25	75	100
28	18UPTAD1C18	Designing with illustrator practical	0	0	6	3	3	40	60	100
<b>Core Paper – Research (CR)</b>										
29	18UPTAD1C19	Research Project and Viva Voce	0	0	20	10	-	50	150	200
		Total	30			17	-			400

SUPPORTIVE COURSES OFFERED TO OTHER DEPARTMENT SEMESTER – II & III										
<b>Open Elective (Exposure to Unrelated discipline)</b>										
1	18UPTAD1S01	Hand Embroidery practical	1	1	1	3	3	40	60	100
2	18UPTAD1S02	Basic Sewing practical	1	1	3	3	3	40	60	100

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

**CORE PAPER -1**  
**RESEARCH AND DESIGN**

**Course Code:** 18UPTAD1C01

**Marks:** 75 Marks

**Course Description:**

This course updates the students on Research design process and sourcing of design concept from primary and secondary sources of research, compiling and designing by idea generation and effectively communicates design ideas using different techniques.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Describe the Research design concept, primary and secondary sources of research design	<b>Cognitive level</b>
CO2	Demonstrate three dimensional approaches to research for drape and garment manipulation	
CO3	Compile the design research process and develop story board and concept board	
CO4	Combine ideas in the form of sketching and design drawing using collage, working drawings, art materials etc.	
CO5	Design from research by generating ideas and refining to a collection	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	M			H	M		M		H	H	H	
CO2	M			H	H		H			H	H	
CO3	H			H	H		H		H	H	H	
CO4	H			H	H		H		H	H	H	
CO5	H			H	H		H		H	H	H	H

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Design Research what and why</b>	Brief, Types of brief, Research and its purpose, <b>Where do you find Design research:</b> Choosing a theme or concept, primary sources and secondary sources, sources of inspiration
<b>II</b>	<b>How to compile design research</b>	The sketch book, drawing, collage, juxtaposition, deconstruction, cross-referencing, analysis of research, focus on key elements, Mood, story and concept boards

<b>III</b>	<b>Three dimensional approaches to research</b>	Model and drape, fiber and fabric qualities, recycled garment manipulation
<b>IV</b>	<b>Designing from your research</b>	Bridging the gap, Design development elements, ideas generating exercise, development and refinement of individual garments, selecting and editing ideas to form a collection
<b>V</b>	<b>Communicating ideas</b>	Sketching and design drawing, Templates, Collage, working drawings, art materials, layout and composition, illustration.

#### 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

**CORE PAPER -2**  
**TECHNICAL TEXTILES- I**

**Course Code:** 18UPTAD1C02

**Marks:**75 Marks

**Course Description:**

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.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Recall the scope of Technical Textiles and its Applications in various fields and COE for technical textiles and services offered by them	<b>Cognitive level</b>
CO2	Discuss the recent fibres and fabrics used in various applications of technical textiles and the products with their uses.	
CO3	Differentiate the various finishing treatments and the method of application in technical textiles	
CO4	Compare the conventional and non-conventional fibres and fabrics used in heat and flame protection and survival textiles	
CO5	Compare the performance of various waterproof breathable fabrics like densely woven fabrics, membranes and coatings	

Course Learning Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H		H	H				H	H	H	H	H
CO2	H	M		M					H	M	H	H
CO3	H		H	M					H	M	M	H
CO4	H	M		M				M	H	M	M	H
CO5	H	M		M				M	H	M	M	H

Unit	Unit Title	Learning Chapters
I	<b>An overview of technical textiles</b>	Introduction, definition and scope of technical textiles, developments in fibres 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.

II	<b>Advanced technical fibres</b>	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.
III	<b>Latest textile finishing</b>	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.
IV	<b>Thermal protection and survival textiles</b>	Heat and flame protection: Thermal behaviour of fibers and fibers suitable for thermal protection. Survival textiles: Short term survival and long term survival, fibres suitable for suitable clothing against chemical, microbiological and radiation hazards.
V	<b>Recent high altitude clothing</b>	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.

#### READING LISTS AND RESOURCES

##### Compulsory



1. Applications of Nonwovens in Technical Textiles, edited by R Chapman, Woodhead Publishing Ltd,
2. Handbook of Properties of Textile and Technical Fibers, edited by A. R. Bunsell, Woodhead Publishing Ltd
3. High-Performance Fibers, edited by J. W. S. Hearle, Woodhead Publishing Ltd
4. Structure and Properties of High-Performance Fibers, edited by Gajanan Bhat, Woodhead Publishing Ltd
5. Chemical Finishing of Textiles, By W D Schindler, P J Hauser, Woodhead Publishing Ltd
6. Textiles for Protection, edited by Richard A. Scott, Woodhead Publishing Ltd
7. Waterproof and Water Repellent Textiles and Clothing, edited by John T Williams, Woodhead Publishing Ltd

##### 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. Nano finishing of Textile Materials Majid Montazer, Tina Harifi Woodhead Publishing, 20-Jun-2018 - Technology & Engineering

##### Good for Students who have Future Interests



12. <http://www.atjournal.com/>
13. [http://en.wikipedia.org/wiki/Technical\\_textile](http://en.wikipedia.org/wiki/Technical_textile)
14. <https://www.textileschool.com>



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>

**CORE PAPER -3**  
**INDIAN TEXTILES AND APPAREL INDUSTRY**

**Course Code:** 18UPTAD1C03

**Marks:**75 Marks

**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 Outcomes (COs)**




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

S. No	Outcomes	Domains of Learning
CO1	Describe the overview and growth, current status and latest government policies and schemes to promote Indian Textile Industry	<b>Cognitive level</b>
CO2	Identify the key markets, production and export potential of Indian Cotton and Silk Industry	
CO3	Review the production, export opportunities and R&D in Jute and Wool Industry in India	
CO4	Identify the performance of Export and domestic market of textiles and clothing sector and demonstrate the registration process as a vendor in e-com Website	
CO5	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	

Course Outcomes (CLOs)	Programme Specific Outcomes(PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H								H		H	
CO2	H							M	H		M	
CO3	H		M	H				M	H		H	
CO4	H		H					H	H		H	
CO5	H		H	H				H	H		H	

Unit	Unit Title	Learning Chapters
I	<b>Outlook of Indian Textile &amp; Apparel Industry</b>	<b>Overview</b> 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.

II	<b>Recent Progresses of Cotton and Sericulture Industry</b>	<p><b>Cotton Textile Industry:</b> 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.</p> <p><b>Sericulture Industry:</b> Introduction, world silk production, Production and consumption of raw silk, performance of sericulture sector, Research and Development.</p>
III	<b>Recent Progresses of Jute and Woollen Industry</b>	<p><b>Jute and Jute Textile Industry:</b> 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.</p> <p><b>Woollen Industry:</b> Production and consumption, wool producing states, Import and export of wool, Research and development.</p>
IV	<b>Recent Progresses of Manmade &amp; filament yarn and Textiles &amp; Clothing Industry. Emerging trends in E-commerce of textile and Apparel Business</b>	<p><b>Manmade and Filament Yarn Industry:</b> Production, Import and Export, growth.</p> <p><b>Textiles and Clothing industry:</b> Recent import scenario and export performance of Textiles and Ready-Made Garments (Woven and Knits)</p> <p><b>Emerging Trends in E-Commerce of textile and apparel business,</b> Vendor, how to register as a vendor, how to build own e-com website.</p>
V	<b>Recent Progresses of Non-Woven Industry, Research Associations &amp; Clusters</b>	<p><b>Textile Research Associations:</b> ATIRA, BTRA, SITRA, NITRA, MANTRA, SASMIRA, IJIRA, WRA</p> <p><b>Nonwoven:</b> Recent Development in India, Global Consumption of Non-woven, Market Potential in India, Growth Drivers of Non-woven and Market Overview</p> <p><b>Clusters:</b> 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</p>

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b>	
	
1.	India's Textile and Apparel Industry: Growth Potential and Trade and Investment Opportunities, Sundar Shetty, U.S. International Trade Commission.2001
2.	An Introduction to Sericulture, 2/E, Ganga and J.sulochanachetty, Oxford and IBH Publishing, 1997
3.	The Textile Industry in India: Changing Trends and Employment Challenges,Bindhuoberoi, Oxford University Press,2016
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 TransactionsLee, In IGI Global, 30-Sep-2013
5.	The Complete Book on Textile Processing and Silk Reeling Technology: H. Panda Asia Pacific Business Press Inc., Delhi 2010
<b>Highly Recommended, not Compulsory</b>	
	
6.	Textile Industry of India and Pakistan Milan Sharma APH Publishing, 2006
7.	Ministry of Textiles: texmin.nic.in
8.	Fibre2Fashion - Textile Magazine - August 2017 Fibre2Fashion, 01-Aug-2017
9.	Advances in Filament Yarn Spinning of Textiles and Polymers. Dong Zhang Elsevier, 15-Feb-2014
<b>Good for Students who have Future Interests</b>	
	
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_Woollen_Sector_wwt_skbabbar_0.pdf">texmin.nic.in/sites/default/files/Note_Woollen_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>

**CORE PAPER - 4**  
**APPAREL QUALITY STANDARDS & IMPLEMENTATION**

**Course Code:**18UPTAD1C04

**Marks:** 75 Marks

**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 Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Describe the quality principles and quality standards prevailing internationally.	<b>Cognitive level</b>
CO2	Determine the basic principles of TUV SUD and Social Accountability International (SA8000) Standards	
CO3	Recommend the use of Eco - Standards, Certification and Specification in Apparel and Textiles	
CO4	Describe the TQM, Six Sigma, Accepted Quality Level and Readymade Garment Manufacturing quality process	
CO5	Describe the durability characteristics of trims and test the garment quality and label Quality	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	H				H			H		H	
CO2	H	H	M						H		H	
CO3	H	H	M			H			H	M	H	
CO4		H							H		H	
CO5	H	H							H		H	

Unit	Unit Title	Learning Chapters
I	<b>Standards and Test Methods</b>	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, ASTM Standards for Conditioning, Chemical and Thermal properties of Textiles,

		<p>ASTM Cotton Fiber Standards, ASTM fabric test methods, ASTM Flammability tests, ASTM Standards for yarn and fiber.</p> <p>AATCC – AATCC Testing methods for color fastness to Acids, Alkalis, Crocking, Perspiration, Light, Qualitative and Quantitative methods of fiber analysis, Dye and Pigment Migration, Aqueous Liquid Repellency, Water / Alcohol Solution Resistance</p>
II	<b>TUV SUD and Social Accountability International</b>	<p>TUV SUD – TUV SUD Technical guidance on Nickel, Organo tin Compounds, Alkyl phenol ethoxylates, Chlorinated Organic Careers.</p> <p>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.</p>
III	<b>Eco standards and Eco Specifications</b>	<p>Eco Standards and Certification – ISO 14000, Eco Mark, OekoTex 100 Standards, GOTS – Requirements for Organic Fiber Production under GOTS, General Requirements for Chemical Inputs under GOTS, OHSAS</p> <p>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.</p>
IV	<b>Total Quality Management and Accepted Quality level</b>	<p>TQM – Implementation phases of TQM – 5’S, Daily Work Management (DWM), Six Sigma – SIPOC flow at garment industry, Lean Six Sigma</p> <p>Accepted Quality Level (AQL) – AQL 1.5, AQL 2.5, AQL 4.0</p> <p>Manufacturing of Readymade Garments (RMGs) – Defect analysis – Zero Defect – 3M’s for approaching Zero Defects, Stage wise defect occurrence in RMG Production.</p>
V	<b>Garment Quality test and Labelling Parameters</b>	<p>Garment Quality tests for dimensions – Stitch quality, Seam quality</p> <p>Durability characteristics of Trims – Resistance of Zippers, Buttons, Snaps, Buckles to abrasion, bursting and corrosion.</p> <p>Labelling: Labelling parameters, Eco – labelling.</p>

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★ ★ ★	
1.	ISO 9000 Quality Systems Handbook - updated for the ISO 9001:2008 standard David Hoyle Routledge, 26-Oct-2009
2.	Quality Planning and Analysis: From Product Development Through Use Joseph M. Juran, Frank M. Gryna Tata McGraw-Hill, 1982 - Quality assurance
3.	Managing Quality in the Apparel Industry By Pradip V. Mehta, Satish K. Bhardwaj Nift Publication.
4.	Quality Assurance for Textiles and Apparel 2nd Edition Sara J. Kadolph Bloomsbury Academic, 25-Jun-2007
5.	Physical Testing of Textiles, Saville, B.P Woodhead Publishing Ltd and CRC Press LLC, 1999
<b>Highly Recommended, not Compulsory</b> ★ ★	
6.	Managing Quality in the Apparel Industry Pradip V. Mehta, Satish K. Bhardwaj New Age International, 1998
7.	Eco textiles: The Way Forward for Sustainable Development in Textiles M Miraftab, A. Richard Horrocks Elsevier, 30-Jan-2007
8.	Garment Manufacturing Technology Rajkishore Nayak, Rajiv Padhye Elsevier, 26-May-2015
9.	Supply Chain Safety Management: Security and Robustness in Logistics Michael Essig, Michael Hülsmann, Eva-Maria Kern, Stephan Klein-Schmeink Springer Science & Business Media, 29-Nov-2012
10	Eco Fashion: Top-Labels entdecken die Grüne Mode Kirsten Diekamp, Werner Koch Stiebner Verlag GmbH, 2010
11	Fundamentals of Total Quality Management Jens J. Dahlgaard, Ghopal K. Khanji, Kai Kristensen Routledge, 28-Jan-2008
<b>Good for Students who have Future Interests</b> ★	
12	Terotechnology: 10th Conference on Terotechnology Radek, N. Materials Research Forum LLC, 25-Aug-2018

**CORE PAPER -5**  
**COREL DRAW PRACTICAL**

**Course Code:**18UPTAD1C05

**Marks:** 60 Marks

**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 Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Describe the Corel draw work space, tools, shortcuts keys and file formats.	<b>Psychomotor Level</b>
CO2	Perform application of colours, colour swatches and various fill options by applying tracing and drawing tools	
CO3	Create typography styles using align and distribution, repeat setting and apply countless effects to texts.	
CO4	Design different styles of garment for men's, women's and children	
CO5	Develop different styles of accessories for men's, women's and children	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H				H		H		H	H	H	
CO2	H				H		H		H	H	H	
CO3					H		H		H	H	H	
CO4					H		H	H	H	H	H	
CO5	H		H	H	H		H	H	H	H	H	

Unit	Unit Title	Learning Chapters
I	<b>Introduction to COREL DRAW</b>	Corel Draw and uses, About Tools and menu bar, How to create a new Document, Corel Draw Tool and functions, Shortcut keys and uses, Importing and exporting images, New page setup and size making, Saving and printing the file, Convert Corel draw to jpeg format and AI format, what is GIF format, CRD format, JPEF format, PNG format, Print Publishing: Print preview and setup, print the designs, Rulers, grid guidelines and wire Frame.



II	<b>Tracing &amp; Drawing</b>	Tracing and drawing with pen tool and freehand tool, Adjusting Anchor points with pen tool and shape tool, Adding Outline stroke 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 silhouette .How to give outline for the object, Increasing and decreasing the outline point, Color palette: Uniform fill, Color the objects, Color models-RGB and CMYK colors,creating, Opening and editing custom color palettes, Palette Editing, Make color swatches, Texture fill dialog, Pattern fill dialog, Gradient effect with fountain fill
III	<b>Align and distribution Repeat Settings Layer management Effects</b>	<b>Align and distribution:</b> Align object to art board, Align object to other object <b>Repeat Settings:</b> Transformation, Position the object, Rotate the object, Scaling and sizing the object <b>Layer management:</b> To forward the object, To back the object <b>Effects:</b> Color balance, Hue saturation, Brightness and contrast, Contouring the objects, Power clip the images, extract and edit the images, Bitmapping the image and giving effects.
IV	<b>Character &amp; Graphics</b>	<b>Character:</b> Work with Text, Typography and uses, Managing sizes, Adding and removing fonts, Typography design, <b>Graphics:</b> Draw or trace flowers and objects, Draw vector graphics and add colors, Draw graphics mix with Photoshop layers, Draw typography graphics and fix it to silhouettes.
V	<b>Designing</b>	<b>Designing:</b> Designing garments, Draw men's shirt with details, Draw women's Kutras with details, Draw trousers with details, Coloring the garment, Draw accessories like belt shoes, caps buttons, bows and buckles

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★★	
1.	CorelDraw 12: The Official Guide, Steve Bain, Dreamtech press, 2004
2.	CorelDRAW X7: The Official Guide Gary David Bouton McGraw Hill Professional, 21-Oct-2014
3.	COREL DRAW TRAINING GUIDESatish Jain/M.GeethaBPB Publications, 02-Jun-2018
<b>Highly Recommended, not Compulsory</b> ★★	
4.	CorelDraw 10 for Windows Phyllis Davis, Steve Schwartz Peachpit Press, 2002
<b>Good for Students who have Future Interests</b> ★	
5.	CorelDRAW 12: The Official Guide Steve Bain, Nick Wilkinson McGraw Hill Professional, 2004

**CORE PAPER - 6**  
**FABRIC STRUCTURE ANALYSIS PRACTICAL**

**Course Code:** 18UPTAD1C06

**Marks:** 60 Marks

**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 Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Demonstrate fabric structure analysis for at least 10 samples: <ul style="list-style-type: none"> <li>• Ends and Picks Per inch by Pick Glass method for woven fabrics</li> <li>• Course and Wales Per inch by Pick Glass method for Knit fabrics</li> <li>• Count of warp and weft by ravelling out method for woven fabrics</li> </ul>	<b>Psychomotor Level</b>
CO2	Complete design, draft and peg plan for any 10 basic and advanced woven fabric swatches	
CO3	Identify the knit design, Structure analysis for any 3 Basic Weft knitted swatches Course and wales per inch by pick Glass method for Knit fabrics	
CO4	Calculate count of yarn, GSM and Loop length for any 2 knit fabrics with Three- way technique	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1						H					H	
CO2						H					M	
CO3				H		H					H	

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Analysis of Elementary Weaves</b>	Analyze the given fabric swatch and furnish the following details. a) Design b) Draft c) Peg-plan d) Ends and Picks per inch e) Count of warp and weft Plain weave, Mat weave, Twill weave, Herring-bone twill weave, Pointed twill weave, Satin weave and Sateen weave.
<b>II</b>	<b>Analysis of</b>	Analyze the given fabric swatch and furnish the following

	<b>Decorative/Fancy weaves</b>	<p>details.</p> <p>a) Design b) Draft c) Peg-plan d) Ends and Picks per inch e) Count of warp and weft</p> <p>Honeycomb weave, Huckaback weave, Crepe weave, Terry weave, Leno weave, Backed cloth, Double cloth, Extra warp figuring weave and Simple dobby designs.</p>
<b>III</b>	<b>Analysis of Knitted fabrics</b>	<p>Analyze the given fabric swatch and furnish the following details.</p> <p>a) Design b) Needle set-out c) Loop length d) Courses and Wales per inch e) Count of yarn f) Grams/ Sq. Mt</p> <p>1) Single jersey Plain 2) 1 X 1 Rib 3) Interlock 4) Pique 5) Honeycomb 6) Flat back rib 7) Cardigan 8) Derby rib</p>
<b>IV</b>	<b>Analysis of three-way techniques of knit fabrics</b>	<p>Analyze the given fabric swatch and furnish the following details.</p> <p>a) Design b) Needle set-out c) Loop length d) Courses and Wales per inch e) Count of yarn f) Grams/ Sq. Mt</p> <p>1) Single jersey (3-way technique- Knit, Tuck, Float) 2) Interlock (3-way technique- Knit, Tuck, Float)</p>
<b>LABORATORY EQUIPMENTS:</b>		
1) Pick Glass 2) Beesley Balance 3) Loop length Tester 4) GSM Cutter 5) Electronic Balance		

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★★	
1.	Fabric Structure and Analysis, Gokernesan, N, New Age International Publishers, New Delhi, 2004
2.	“Watson’s Textile Design and Colour”, Vol.1, Grosicki Z. J., Woodhead Publications, Cambridge England, 2004.
3.	“Knitting Technology”, Spencer D.J., III Edition ., Textile Institute, Manchester, 2001.
4.	“Knitting Technology”, Ajgaonkar D.B., Universal Publishing Corporation, Mumbai, 1998
<b>Highly Recommended, not Compulsory</b> ★★	
5.	Woven Fabric Engineering Polona Dobnik Dubrovski BoD – Books on Demand, 18-Nov-2010
6.	Knitting: Colour, structure and design Alison Ellen Crowood, 21-Dec-2013
7.	Specialist Yarn and Fabric Structures: Developments and Applications R H Gong Elsevier, 14-Sep-2011
<b>Good for Students who have Future Interests</b> ★	
8.	<a href="https://www.textileadvisor.com">https://www.textileadvisor.com</a> > 2018/11 > fabric-analyses
9.	<a href="https://www.textilebook.com">https://www.textilebook.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_

**ELECTIVE PRACTICAL - 1**  
**ADVANCE FASHION DRAPING PRACTICAL**

**Course Code:** 18UPTAD1E01

**Marks:** 60 Marks

**Course Description:**

The course offers unique contents for a designer job role wherein the learners could envision three-dimensional view of the creative designs and examine the fit of the garment for customized designs through draping techniques. The learners acquire basic to advanced draping skills to perform creatively in apparel designing.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Demonstrate Proficiency in draping, marking and trueing foundation patterns: Front Bodice, Back Bodice, Sleeve, Front Skirt, Back Skirt and Basic Straight trousers	<b>Psychomotor Level</b>
CO2	Demonstrate the draping techniques for at least two collars and yokes	
CO3	Drape at least five styles of bodices by integrating darts, tucks, pleats, neckline, waistline and armhole variations	
CO4	Show at least three variations in skirt draping	
CO5	Create at least one Apparel Prototype chosen from the casual wear, sportswear, princess dress or traditional wears through draping technique	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	L		H	M	H		H	H	L	H	H	M
CO2	L		H	M	H		H	H	L	H	H	M
CO3	L		H	M	H		H	H	L	H	H	M
CO4	M		H	H	H		H	H	H	H	H	M
CO5	H		H	H	H		H	H	H	H	H	M

Unit	Unit Title	Learning Chapters
I	<b>Basic preparation and basic pattern</b>	Draping, Marking and trueing for Bodice, skirt and trouser
II	<b>Yokes &amp; Collars</b>	<b>Yokes:</b> Fitted midriff, Bodice yoke, Shirt yoke, Hip yoke <b>Collars:</b> Mandarin, Band, Convertible, Shirt and Peter pan collar

III	<b>Incorporating Dart and Fullness Variations in Bodices</b>	<ul style="list-style-type: none"> <li>• Front bodice with underarm dart. Back bodice with Neckline dart, Waist line dart, Dart at waist line and Center front, The French dart, Double French dart, Flange dart, Neckline dart, Bust line dart at Center front and Armhole dart</li> <li>• Pleats, darts, tucks and gathers, Neckline variations, Armhole variations and Waistline variations</li> </ul>
IV	<b>Variations in skirt</b>	Tapered skirt, Eased skirt, Dirndl skirt, Dome skirt, flared skirt and variations in flared skirt, Peg skirt Sarong skirt and Pleated skirt
V	<b>Prototype</b>	Apparel Prototype from the casual wear, sportswear, princess dress or traditional wears through draping technique

### READING LISTS AND RESOURCES

#### Compulsory



- |   |   |
|---|---|
| 1 | Draping for Fashion Design, Jaffe, Jaffe Hilde, Pearson Education India, 2009   |
| 2 | Draping: The Complete Course, Karolyn Kiisel, Laurence King Publishing, 2013  |
| 3 | Draping for Apparel Design, Helen Joseph-Armstrong, Bloomsbury Academic, 2013   |
| 4 | Cutting and Draping Party and Eveningwear: Dressmaking and pattern cutting for special occasion clothes Dawn Cloake Pavilion Books, 01-Oct-2016 |

#### Highly Recommended, not Compulsory



- |   |   |
|---|---|
| 5 | Draping for Apparel Design Helen Joseph-Armstrong Bloomsbury Academic, 15-Feb-2013                          |
| 6 | Draping for Fashion Design Hilde Jaffe Pearson Education India, 2000  |
| 7 | Patternmaking: a comprehensive reference for fashion design Sylvia Rosen Pearson Prentice Hall, 13-Feb-2004 |
| 8 | Patternmaking for Menswear: Classic to Contemporary Myoungok Kim, Injoo Kim A&C Black, 16-Apr-2001          |

#### Good for Students who have Future Interests



- |   |   |
|---|---|
| 9 | Digital Pattern Cutting For Fashion with Lectra Modaris®: From 2D pattern modification to 3D prototyping, Patricia Grice Bloomsbury Publishing, 01-Nov-2018 |
|---|---|

**ELECTIVE PRACTICAL - 2**  
**TEXTILE BUSINESS- STARTUP PRACTICE**

**Course Code:** 18UPTAD1E02

**Marks:** 60 Marks

**Course Description:**

Start-up Practice enlighten on how to assess an idea in the background of a Textiles and Apparel business opportunity. The learners will understand financial basics, Intellectual property rights of what is required for Start-up and develop a business plan and gain more information onto develop a network of connections.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Perform idea identification assessment task	<b>Psychomotor Level</b>
CO2	Demonstrate IP registration process	
CO3	Coordinate financial basics	
CO4	Create Business Plan	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	H	H	H	H		L	H	H	H	H	H
CO2		H	H		H			H	H	H	H	H
CO3		H	H		H			H	H	H	H	H
CO4	H	H	H	H	H		M	H	H	H	H	H

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Idea identification &amp; Assessment</b>	<ol style="list-style-type: none"> <li>Identifying an Idea</li> <li>Assessing the idea</li> <li>Understanding Target segment</li> <li>Sizing the Market</li> <li>Analysing the environment and Competitive advantage</li> </ol>
<b>II</b>	<b>Building a Legal foundation</b>	<ol style="list-style-type: none"> <li>Choosing the right legal structure</li> <li>Introduction to permits, registrations and compliances</li> <li>Introduction to intellectual property rights</li> <li>Importance and types of IPRS</li> <li>IP registration process</li> </ol>

<b>III</b>	<b>Financial Basics</b>	<ol style="list-style-type: none"> <li>1. Introduction to Financial statements</li> <li>2. Management Information systems</li> <li>3. Introduction to Working capital Management</li> <li>4. Introduction to Break even analysis</li> <li>5. Elements of cost and Break-even point</li> <li>6. Cost change and margin of safety</li> </ol>
<b>IV</b>	<b>Introduction to Business Planning</b>	<ol style="list-style-type: none"> <li>1. Importance of Business plan</li> <li>2. Elements of Business Plan</li> <li>3. Format of a Business Plan</li> </ol>

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b>	
★ ★ ★	
1.	Start-up: A Practical Guide to Starting and Running a New Business, Tom Harris, Springer, 07-Aug-2018
<b>Highly Recommended, not Compulsory</b>	
★ ★	
2.	Draping for Apparel Design Helen Joseph-Armstrong Bloomsbury Academic, 15-Feb-2013
3.	Draping for Fashion Design Hilde Jaffe Pearson Education India, 2000
4.	Patternmaking: a comprehensive reference for fashion design Sylvia Rosen Pearson Prentice Hall, 13-Feb-2004
5.	Patternmaking for Menswear: Classic to Contemporary Myoungok Kim, Injoo Kim A&C Black, 16-Apr-2014
<b>Good for Students who have Future Interests</b>	
★	
6.	Digital Pattern Cutting For Fashion with LectraModaris®: From 2D pattern modification to 3D Prototyping, Patricia Grice Bloomsbury Publishing, 01-Nov-2018

**CORE PAPER - 7**  
**SUSTAINABLE DEVELOPMENT FOR TEXTILES**

**Course Code:** 18UPTAD1C07

**Marks:** 75 Marks

**Course Description:**

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

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Discuss the concepts of sustainability, chemical and green manufacturing of textiles, rules for using chemicals and waste management for textiles and clothing	Cognitive level
CO2	Describe the Eco-friendly chemical processing, Red listed textile chemicals Eco Labelling and eco standards, eco-friendly dyes, energy efficient production systems and methods	
CO3	Explain the organic manufacturing of fibres like cotton, wool, silk, polyester, bamboo, lyocell and PLA and reduction of carbon footprints in textile industry	
CO4	Differentiate the importance of recycling and up cycling of textiles with respect to production, process and innovation of fibres	
CO5	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	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)											
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	H	H	H		M	H	H	H	H	H	H



CO2	H	H		H		H		H	H	H	H	H
CO3	H	H		H		H		H	H	H	H	H
CO4	H	H		H		H		H	H	H	H	H
CO5	H	H	H	H		H		H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>An overview of sustainable development</b>	Introduction: The basic concepts of Sustainable Development; Agreement on sustainable development and governance among UN member countries; Difference between chemical & green process in manufacturing, rules/ recommendations for using chemicals, raw materials & waste management for sustainable textiles & clothing
II	<b>Eco-friendly processing, Eco-labelling and Eco- standards</b>	Eco- friendly chemical processing: Modern approaches to eco-friendly wet processing of woven and knitted clothing. Red listed textile chemicals, their sources and remedies. Eco-friendly dyes and their method of dyeing; Energy efficient production methods and processing techniques. Eco- labeling and various eco- standards, enzymes and natural dyes; Energy saving production systems, methods and products;
III	<b>Organic and sustainable textiles</b>	Organic and Sustainable textile: Organic fibre production & Processes; Organic cotton, wool, silk, bamboo, Regenerated fibres- Lyocell, PLA, Recycled fibres- PET. Reduction of carbon footprints in textile processing and finishing;
IV	<b>Recycling and up cycling of textiles</b>	Introduction and importance of recycling and up cycling for growing source of innovative design in the fashion and accessories, processing, production and their applications.
V	<b>Ethical manufacturing and corporate social responsibility</b>	Ethical Manufacturing: Ethical and environmental issues relating to textile and fashion industry. 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 Nova Publishers, 2007
2.	Ecotextiles: The Way Forward for Sustainable Development in Textiles M Miraftab, A. Richard Horrocks Elsevier, 30-Jan-2007
3.	Sustainable Textiles: Life Cycle and Environmental Impact Richard Blackburn Elsevier, 19-Oct-2009

4.	Handbook of Sustainable Textile Production Marion I Tobler-Rohr Elsevier, 27-Jun-2011
<b>Highly Recommended, not Compulsory</b> ★★	
5.	Water Recycling in Textile wet processing, Skelly J. K., Wood head publishing Ltd, UK, 2003.
6.	Handbook of Environmental laws, Acts, Guidelines, Compliances and standards, Vol.1, Trivedi R.K., Enviro Media, India, 1996
<b>Good for Students who have Future Interests</b> ★	
7.	<a href="https://ec.europa.eu/europeaid/case-studies/sustainable-textiles-sustainable-development_en">https://ec.europa.eu/europeaid/case-studies/sustainable-textiles-sustainable-development_en</a>
8.	<a href="https://www.1millionwomen.com.au/blog/a-z-glossary-of-sustainable-fibres/">https://www.1millionwomen.com.au/blog/a-z-glossary-of-sustainable-fibres/</a>
9.	<a href="https://www.sustainablefashionmatterz.com/what-is-sustainable-fashion">https://www.sustainablefashionmatterz.com/what-is-sustainable-fashion</a>
10.	<a href="https://smallbusiness.chron.com/legal-ethical-issues-manufacturing-companies-74890.html">https://smallbusiness.chron.com/legal-ethical-issues-manufacturing-companies-74890.html</a>
11.	<a href="http://www.indiantextilejournal.com/articles/FAdetails.asp?id=5518">http://www.indiantextilejournal.com/articles/FAdetails.asp?id=5518</a>
12.	<a href="https://www.un.org/sustainabledevelopment/sustainable-development-goals/">https://www.un.org/sustainabledevelopment/sustainable-development-goals/</a>
13.	<a href="http://www.sulphurdyes.com/Eco%20Friendly%20Chemical%20processing%20of%20Textile%20&amp;%20Environmental%20Management.pdf">http://www.sulphurdyes.com/Eco%20Friendly%20Chemical%20processing%20of%20Textile%20&amp;%20Environmental%20Management.pdf</a>

## CORE PAPER - 8 TECHNICAL TEXTILES- II

**Course Code:** 18UPTAD1C08

**Marks:** 75 Marks

### Course Description:

This course updates the students about the recent advancements in agro textiles, sports textiles, geo textiles and medical textiles, textiles used in transportation, military and defence, marine and rail applications and latest developments in smart and intelligent textiles and their applications.

### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Outline the fibres, fabrics used and application of textiles in agriculture and sports.	
CO2	Explain the fibres and fabrics used, properties and functions of	

	geotextiles and applications of medical textiles.	<b>Cognitive level</b>
<b>CO3</b>	Discuss the fibres and fabrics used in transportation textiles and their functions	
<b>CO4</b>	Categorize the fibres, yarns and fabrics suitable for military and defence textiles	
<b>CO5</b>	Classify the smart textiles and intelligent textiles and their applications in various field	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)											
	A.Knowledge&Understanding				B.Practical Skills			C.Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
<b>CO1</b>	H		H	H				H	H	H	H	M
<b>CO2</b>	H		H	H				H	H	H	H	M
<b>CO3</b>	H		H	H				H	H	H	H	M
<b>CO4</b>	H		H	H				H	H	H	H	M
<b>CO5</b>	H		H	H				H	H	H	H	M

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>An overview of agro and sports textiles</b>	Agro textiles – Introduction, need, fibres used for agro textiles, properties required for agro textiles, manufacturing processes of agro textiles, role of nonwovens in agro textiles, applications of agro textiles and their uses, Sports textiles – fibres and fabrics used for sports textiles, applications of sports textiles and their uses.
<b>II</b>	<b>Geo-textiles and medical textiles</b>	Geo-textiles – 1 Introduction, fibres used in geo-textiles, Essential properties of geo-textiles – mechanical response, filtration ability and chemical resistance and functions of geo-textiles – Medical Textiles – Introduction, fibres used, speciality fibres used in medical textiles – alginate, chitin, chitosan, collagen, catgut, super absorbent fibres, applications of medial textiles.
<b>III</b>	<b>Textiles in transportation</b>	Introduction, fibres requirements, textiles in passengers cars – interior design, requirements – fibre selection, yarn type and fabric structure, other parts of car interior – seat belts and airbags, textiles in other road vehicles, rail applications Textiles in aircraft, marine applications.

<b>IV</b>	<b>Military and defence textiles</b>	Introduction, textiles for protection, thermal insulation materials, water proof breathable materials, military combat clothing systems, camouflage concealment and deception, flame retardant, heat protective textiles, ballistic protective materials, biological and chemical protection.
<b>V</b>	<b>Smart and Intelligent textiles</b>	Smart textiles – components, Classification – active smart, passive smart and ultra smart textiles and their applications. Intelligent Textiles – phase change materials, shape memory polymers, chromic and conductive materials and their applications.

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★★	
1.	Handbook of Technical Textile, A.R. Horrocks and S.C. Anand, Woodhead Publishing Ltd, 2000
2.	Wellington Sears Handbook of Industrial Textiles, Sabita Adanur, CRC Press, 1995
3.	Textiles for Protection, edited by Richard A. Scott, Woodhead Publishing Ltd
4.	Handbook of medical textiles by V.T. Bartels, Woodhead Publishing Ltd, 2011
5.	An Introduction to healthcare and medical textiles by Wen Zhong, DES tec publications, Inc, 2013.
<b>Highly Recommended, not Compulsory</b> ★★	
6.	<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>
7.	<a href="http://www.indiantextilejournal.com/news/NewsLine.asp?id=1105">http://www.indiantextilejournal.com/news/NewsLine.asp?id=1105</a>
8.	<a href="https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622">https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622</a>
9.	<a href="http://www.softtextile.biz/wwwsofttextilebiz/technical-textiles">http://www.softtextile.biz/wwwsofttextilebiz/technical-textiles</a>
10.	<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>
<b>Good for Students who have Future Interests</b> ★	
11.	<a href="http://www.atjournal.com/">http://www.atjournal.com/</a>
12.	<a href="http://en.wikipedia.org/wiki/Technical_textile">http://en.wikipedia.org/wiki/Technical_textile</a>
13.	<a href="https://www.textileschool.com">https://www.textileschool.com</a>
14.	<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>
15.	<a href="https://textilelearner.blogspot.com/2012/02/introduction-of-medical-textiles.html">https://textilelearner.blogspot.com/2012/02/introduction-of-medical-textiles.html</a>
16.	<a href="https://textilelearner.blogspot.com/2012/03/sports-textilesporttech-properties-of.html">https://textilelearner.blogspot.com/2012/03/sports-textilesporttech-properties-of.html</a>
17.	<a href="https://en.wikipedia.org/wiki/E-textiles">https://en.wikipedia.org/wiki/E-textiles</a>

## CORE PAPER - 9 NON CONVENTIONAL NATURAL FIBRES

**Course Code:** 18UPTAD1C09

**Marks:** 75 Marks

### **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 Outcomes (COs)**




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

S. No	Outcomes	Domains of Learning
CO1	Describe the significance of Non Conventional Natural fibres and environmental impact of existing natural and synthetic polymers	<b>Cognitive level</b>
CO2	Discuss the different fibre separation methods of Non-Conventional Natural Cellulosic and Protein fibres	
CO3	Prepare a portfolio on potential use and environmental benefits of Non-conventional Natural fibres in diverse fields	
CO4	Analyze the Physical and Chemical properties of different Non-Conventional Natural fibres and elucidate the benefits and shortcomings for product development	
CO5	Summarize the scope of Non-Conventional Natural fibers in India for research opportunities and product development	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	M	H	H		H		H	H	H	H	H
CO2	H		H	H		H		H	H	H	H	H
CO3	H		H	H		H		H	H	H	H	H
CO4	H	M	H	H		H		H	H	H	H	H
CO5	H	M	H	H		H		H	H	H	H	H

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Introduction to sustainability and Natural Cellulose fibres from Renewable Resources:</b>	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 <b>Natural Cellulose fibres from Renewable Resources:</b> Introduction to Natural Cellulose fibres from Renewable Resources, Corn Stover- Wheat and Rice Straw Fibres, Sorghum Stems and leaves, Cotton stalks, Palm trees, Banana Pseudo-stems, Sugarcane Bagasse.
<b>II</b>	<b>Natural Cellulose fibres from Renewable Resources</b>	Milkweed fibre, Coconut husk fibres, Pineapple fibres, Switch grass, Hop stems and Bamboo fibres, Lotus stem and Coffee grounds, Hibiscus, Stinging Nettle and other Lignocellulosic sources, <b>Regenerated cellulose fibres from Non-Conventional Cellulosic Resources.</b>
<b>III</b>	<b>Natural Protein Fibres (Innovative and</b>	Lacewing Silk, Mussel Byssus fibres, Hagfish proteins, Spider silks, Honeybee, poultry feathers, Animal Hair fibres (Chiengora), Casein, plant protein, Lysozyme

	<b>Renewable resources)</b>	
<b>IV</b>	<b>Fibres from Biotechnology</b>	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.
<b>V</b>	<b>Emerging Non-Conventional Fibres and Bio composites from Renewable resources</b>	<b>Bio composites from Renewable resources</b> , Emerging Non-Conventional fibres from <b>Fruits and Vegetable scraps</b> : Oranges, Apple, Grapes and others. <b>Leather alternatives from</b> : Fish, Mushrooms, apples, pineapples and others

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> 	
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.	<a href="https://www.businesswire.com/news/home/20180415005117/en/Key">https://www.businesswire.com/news/home/20180415005117/en/Key</a>
<b>Highly Recommended, not Compulsory</b> 	
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
<b>Good for Students who have Future Interests</b> 	
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

### **CORE PAPER - 10**

### **PHOTOSHOP FOR GRAPHIC AND FASHION DESIGN PRACTICAL**

**Course Code:** 18UPTAD1C10

**Marks:** 60 Marks

**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 Outcomes (COs):**

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

S.No	Outcomes	Domains of Learning
CO1	Perform the basic operations of Adobe Photoshop, Manipulate the workspace, layers and Channel	<b>Psychomotor Level</b>
CO2	Scanning of fabric swatches and Mask the swatch for texture mapping.	
CO3	Execute creatively the Filter effects, User defined brush presets, path and characters	
CO4	Create design pattern, print repeat and graphics	
CO5	Prepare Mood board and story board with Advanced Graphics	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H				H		H				H	
CO2					H	H	H			H	H	
CO3	H				H		H		H		H	
CO4	H		H		H	H	H			H	H	
CO5	H		H		H		H	H		H	H	

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Introduction to Adobe Photoshop</b>	<b>Introduction:</b> Photoshop need for Fashion industry <b>Work Space Overview:</b> Top Menu Bar, How to create a new Document, Photo Shop Tool Palette, Shortcut keys and uses.
<b>II</b>	<b>Working with layers and channels</b>	Preparing Files and creating a colour Palette <b>Scanning:</b> Basics, scanning and aligning fabrics <b>Layers:</b> Use and Function in Design, Exercises on Layers <b>Masks:</b> How to use mask in Adobe Photoshop <b>Channels:</b> Working with channels.
<b>III</b>	<b>Creating Filters, brush presets, working with path and Character</b>	<b>Filters:</b> Filters and uses, working with filters, giving effects to pictures <b>Brushes Presets:</b> Brushes and uses, Add New brushes <b>Path:</b> Path and uses, working with Paths <b>Character:</b> Work with Text, Typography and uses
<b>IV</b>	<b>Creating design pattern, print</b>	Understanding Swatches, Working with Repeat of a pattern <b>Pattern:</b> Define, Create woven patterns

	<b>repeat and working with graphics</b>	<b>Print Repeat: Fundamentals and Creating Print Repeat Graphics: Preparing Graphics, How to make Graphics</b>
<b>V</b>	<b>Working with Advanced Graphics</b>	<b>Forecasting and trend analysis: Prepare Mood board and story board and making graphics based on the mood board and story board.</b>

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★★ ★	
1.	Rendering Fashion, fabrics and prints, Pearson education, 2007
2.	Adobe Photoshop for Textile Design, Frederick Chipkin, Origininc, 2012
3.	The Photoshop Workbook: Professional Retouching and Compositing Tips, Tricks, and Techniques, Peachpit Press; Glyn Dewis, 01 edition 2015
4.	Fashion Designer's Handbook for Adobe Illustrator, Marianne Centner, Frances Vereker, John Wiley & Sons, 2011.
5.	Adobe Illustrator CS6 on Demand, Perspection Inc., Steve Johnson, Que Publishing, 2012
6.	Adobe for Fashion: Illustrator CS6, Robin Schneider, Lulu.com, 2012
<b>Highly Recommended, not Compulsory</b> ★★ ★	
7.	The Graphic Designers Digital Toolkit: A project-based introduction to Adobe Photoshop CS6, Illustrator CS6 and InDesign CS6, 7 <sup>th</sup> Edition, Allan Wood, Cengage Learning, 2014
8.	Adobe creative team of designers, Classroom in a book, Adobe Press (July 5, 2013) ISBN: 978-0321929495
9.	Adobe Illustrator CC Classroom in a Book, Adobe Press 1 <sup>st</sup> Edition Brian Wood, (Dec 18, 2015) ISBN: 978-0134308111
10	The Designer Collection Revealed: Adobe In Design CS5, Photoshop CS5 and Illustrator CS5 (Adobe Creative Suite), Chris Botello, Elizabeth Eisner Reding, Cengage Learning 1 <sup>st</sup> Edition (Aug 20, 2010)
<b>Good for Students who have Future Interests</b> ★	
11.	The Graphic Designers Digital Toolkit: A project based introduction to Adobe Photoshop CS6, Illustrator CS6 and InDesign CS6, Allan Wood, 6 <sup>th</sup> Edition, Cengage Learning
12.	The Designer Collection Revealed: Adobe In Design CS5, Photoshop CS5 and Illustrator CS5 (Adobe Creative Suite), Chris Botello, Elizabeth Eisner Reding, Cengage Learning 1 <sup>st</sup> Edition (Aug 20, 2010)

### **CORE PAPER - 11**

### **FASHION ILLUSTRATION PRACTICAL**

**Course Code:** 18UPTAD1C11

**Marks:** 60 Marks

**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 Outcomes (COs)**

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



S. No	Outcomes	Domains of Learning
CO1	Perform basic fashion drawing skills: Human body and different kinds of figures and poses	<b>Psychomotor Level</b>
CO2	Sketch : 1. Costumes on silhouettes using lines, checks, shapes and fullness 2. Two and three dimensional figures 3. Create a design for figure irregularities.	
CO3	Design different styles of Seasonal garments and Sportswear for a specific theme and Styles for Fashion show costumes and Bridal costumes	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1			H				H		M	H	H	
CO2			H				H		M	H	H	
CO3	M		H	M			H		M	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>Introduction to Figure Illustration</b>	<b>Introduction to Fashion Head Theory:</b> Practice 8,10 and 12 head theory. Different poses of stick figures, block figures and flesh figures. <b>Draw different kinds of figures:</b> Normal, tall and thin, tall and thick, short and thin, short and heavy and athletes. Structures of hands & legs and Hair styles. <b>Colours:</b> Using different mediums of colours on a costume match the colours with colour complexion.
II	<b>Costumes on silhouettes</b>	<b>Costumes on silhouettes.</b> Single, two and three dimension of figures with pattern, design and Texture. Mix matching costumes on a silhouette <b>Fullness on garment:</b> pleats, smocking, gathering and ruffles. Different types of lines, checks and shapes on a garment.

<b>III</b>	<b>Design Fashion Show, Bride Groom and Seasonal Garments</b>	<p><b>Fashion Show costumes:</b> Party wear, occasional wear, ethnic and trendy wears. Design journal of a traditional wear to high fashion.</p> <p><b>Designing Sportswear:</b> Design a new uniform for a preferable game e.g., cricket team.</p> <p><b>Figure Irregularities:</b> Design a garment for the person having figure problems.</p> <p><b>Seasonal garments:</b> Designing garment with a theme of spring, autumn and summer seasons.</p> <p><b>Costumes for Bridal wear:</b> Create new designs for a bride groom of Tamil Nadu, Karnataka, Andhra and North India with suitable accessories and ornaments</p>
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<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b>	
★ ★ ★	
1.	Fashion Sketchbook, Bina Abling, 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.	Figure Drawing for Fashion Design, Elisabetta Drudi, Pepin Press, 2010
6.	Inside Fashion Design, Sharon Lee Tate Longman, 1999
7.	20th-century Fashion: The Complete Sourcebook, John Peacock, Thames and Hudson, 1993
<b>Highly Recommended, not Compulsory</b>	
★ ★	
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, Maitelafuente, Rockport publishers, 2007
<b>Good for Students who have Future Interests</b>	
★	
11.	Patrick John Ireland, New Fashion Figure Templates new edition, Batsford Ltd, 2007
12.	John Peacock, 20th-century Fashion: The Complete Sourcebook, Thames and Hudson
13.	Elisabetta Drudi, Figure Drawing for Fashion Design, Pepin Press, 2010

### **ELECTIVE PRACTICAL - 3**

### **EXPORT MERCHANDISE PRACTICE**

**Course Code:** 18UPTAD1E03

**Marks:** 60 Marks

**Course Description:**

This course covers the skills and knowledge to conduct Survey on Market trends, Understand costing and documentations required in Merchandising department.

**Course Outcomes (COs)**




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

S. No	Outcomes	Domains of Learning
CO1	Carry out Survey on Market trends of fabrics, trims and accessories	<b>Psychomotor Level</b>
CO2	Identify and Prepare database of Vendors	
CO3	Preparation of the BOM and Evaluation	
CO4	Develop samples and Create a template for Purchase order and Performa invoice	
CO5	Prepare Pre production and final Garment Inspection report	

Course Outcomes (CLOs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	M	M	H	H			H	H	H	H	H
CO2	H	M	M	H	H			H	H	H	H	H
CO3	H	M	M	H	H		H	H	H	H	H	H
CO4	H	M	M	H	H		M	H	H	H	H	H
CO5	H	M	M	H	H		M	H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>Market Trend assessment</b>	Prepare a document by Selecting a Current Export Garment and Analyse the Market Trends on fabrics, trims and accessories
II	<b>Identification of Vendors/ Supplier</b>	<ol style="list-style-type: none"> <li>1. Develop a database by locating the vendors details in nearby region</li> <li>2. Collect all the relevant swatches to meet the design brief</li> </ol>
III	<b>Preparation of the BOM and Evaluation</b>	Prepare Specification sheet, Cost sheet, Bill of Material (BOM), SAM (Standard Allowed Minute) and TNA (Time and Action Calendar) for the Selected Style
IV	<b>Confirmation of Merchandise Plan</b>	<ol style="list-style-type: none"> <li>1. Construct Size set samples</li> <li>2. Create a template for purchase order for a given style</li> <li>3. Create a template for Performa invoice for a given style</li> </ol>
V	<b>Pre-Production and final inspection</b>	Prepare a complete document for pre-production meeting and final inspection procedures

	<b>documents</b>	
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<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b>	
	
1.	Apparel Merchandising, Reashad Bin Kabir, Saiful Islam Tanvi, Lulu.com
2.	Apparel Merchandising: The Line Starts Here, Jeremy A. Rosenau, David L. Wilson, A&C Black, 2014
3.	Apparel Manufacturing: Sewn Product Analysis, 4/E, Glock Ruth E., Glock, Pearson Education India, 2005
4.	Costing for the Fashion Industry, Michael Jeffrey, Nathalie Evans, Berg, 2011
<b>Highly Recommended, not Compulsory</b>	
	
5.	Indispensable Facets of Apparel Merchandising, Saiful Islam Tanvir, Tanvir Saiful Islam, LAP Lambert Academic Publishing, 2014
6.	Quality Assurance for Textiles and Apparel 2nd Edition, Sara J. Kadolph, Bloomsbury Academic, 2007
<b>Good for Students who have Future Interests</b>	
	
7.	Retail Product Management: Buying and Merchandising Rosemary Varley Routledge, 11-Jan-2013

**ELECTIVE PRACTICAL - 4**  
**PROFESSIONAL DESIGN AND CONSTRUCTION PRACTICALS**

**Course Code:**18UPTAD1E04

**Marks:**60 Marks

**Course Description:**

This course covers the skills and knowledge to conduct design research, create design concepts, develop prototype and evaluate the design processes for design brief.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Demonstrate the ability to conduct design research	<b>Psychomotor Level</b>
CO2	Specify the recorded information in a sketch book to develop a concept for design brief	
CO3	Confirm the Design Brief	
CO4	Appraise the Constructed Prototype for the design brief	
CO5	Compile the development processes and document its outcomes	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H		H	H	H		H	H	H	H	H	H
CO2	H		H	H	H		H	H	H	H	H	H
CO3	H	H	H	H	H	H	H	H	H	H	H	H
CO4	H	H	H	H	H	H	H	H	H	H	H	H
CO5				H	H		H	H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>Conduct Fashion Design Research</b>	1. Generate ideas for the theme or Concept 2. Undertake Consumer and Market research
II	<b>Determine key criteria for design brief</b>	1. Prepare croquis drawing, technical drawing/working drawing and document 2. Create a template for cost sheet and Specify the budget in the cost sheet for the design brief and specify the timing to complete the brief in a template
III	<b>Confirm the Design Brief</b>	Prepare the cost sheet, techpack, spec sheet and time constraints for a design brief
IV	<b>Design Processes</b>	Construct the prototype Sample
V	<b>Implement design</b>	Evaluate the prototype samples and record in a template

	<b>process</b>	
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<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b>	
★ ★ ★	
1.	Textile Design: Principles, Advances and Applications A Briggs-Goode, K Townsend Elsevier, 15-Apr-2011
2.	Apparel Manufacturing Technology T. Karthik, P. Ganesan, D. Gopalakrishnan CRC Press, 05-Aug-2016
<b>Highly Recommended, not Compulsory</b>	
★ ★	
3.	Handbook for Fashion Designing: Best Drafting Techniques Ritu Jindal Mittal Publications, 1998
<b>Good for Students who have Future Interests</b>	
★	
4.	A Practical Approach to Costume Design and Construction, Volume 2 Beverly Jane Thomas Allyn and Bacon, 1982
5.	A Practical Guide to Costume Mounting Lara Flecker Routledge, 11-Jan-2013

## EXPERIENTIAL LEARNING INTERNSHIP

**Course Code:** 18UPTAD1I01

**Marks:** 60 Marks

### Course Description

The student will be required to undergo a summer internship for a total duration of 6 weeks in their chosen area of interest after the Semester II. Depending on the interest of the students they undergo internship in garment industries, hosiery units, dyeing units, export houses, buying houses, research organizations, testing labs, museums, conservation organizations, designers and many more.

Industries, Institutions/organizations chosen should be of good professional standing. The student must participate in the on-going activities of the agency/ establishment, acquire skills and knowledge, gather information and prepare a report to be presented in the department for assessment after the completion of the internship period.

### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Recognize the industry customs and practices	<b>Cognitive &amp; Psychomotor Level</b>
CO2	Combine interpersonal skills, team working skills, professionalism and management experience	
CO3	Analyze Quality Standards followed by different buyers and different working conditions	
CO4	Enhance communication skills and facilitates professional networking and knowledge sharing	
CO5	Compose the Strength and challenges of the Industry	
CO6	Report Submission	

Course Outcomes (Cos)	Programme Specific Outcomes (PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	H	H	H	H	H		H	H	H	H	
CO2	H	H	H	H	H			H	H	H	H	H
CO3	H	H	H	H	H			H	H	H	H	H
CO4	H	H		H		H			H	H	H	H
CO5	H		H						H	H	H	H
CO6												

<b>S.No</b>	<b>Topics</b>	<b>Duration</b>
1.	Overview of the industry/Institution	1 <sup>st</sup> week
2.	On Site study	2 <sup>nd</sup> week
3.	Understand the work nature of the different department, work process, personnel involved in the department.	3 <sup>rd</sup> week
4.	Observe the documentation process by communicating with various levels of manager	4 <sup>th</sup> week
5.	Data analysis: SWOT analysis of the industry.	5 <sup>th</sup> week
6.	Submission of report	6 <sup>th</sup> week



**CORE PAPER-12**  
**RESEARCH METHODOLOGY AND STATISTICS**

**Course Code:**18UPTAD1C12

**Marks:** 75 Marks

**Course Description:**

The objective is to provide the knowledge and skills to perform well in the course of their dissertation work. It comprises the fundamental concepts of research, undergo practice in review of Literature, understand research design, data collection and analysis and acquire an understanding to write the dissertation independently.

**Course Outcomes (COs)**

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




S. No	Outcomes	Domains of Learning
CO1	Recall the fundamental concepts of Research <ul style="list-style-type: none"> <li>• Meaning, types of Research and steps in research process</li> <li>• Understand the process of Literature review and find the research gap</li> <li>• Demonstrate the techniques to select Research Problem, Objectives, Research Question and Hypothesis</li> </ul>	<b>Cognitive level</b>
CO2	Distinguish appropriate research design and methodologies to apply to a specific research project	
CO3	Select the right and proper method for data collection	
CO4	Summarize the format for research report writing	
CO5	Explain the descriptive statistics, chi square test and Analysis of Variance	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	M			H		H			H		H	H
CO2	H	L		H		H			H		H	H
CO3	H			H		H			H	H	H	H
CO4	M	L		H		H		H	H	H	H	H
CO5	L			H		H		H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>Fundamental Concepts of Research</b>	<b>Research:</b> Meaning, definition, Objectives, types of research, Steps in research process. <b>Research Problem:</b> Formulating Research Problem, Defining the research problem, Selection of Research Problem and Technique involved in defining a problem.

		<p><b>Review of Literature:</b> Understanding and completing Literature review, Preparing a Literature review, Identifying, Choosing and Locating Relevant Literature, Reading and Taking Notes, Taking Your Review from Descriptive to Critical Level.</p> <p><b>Research Objectives, Questions and Hypothesis</b>  What are objectives, Questions and Hypotheses. How to develop and write good research Objectives, How to frame Research Question  Hypothesis: Definition, Formulating a Hypothesis, Deductive and Inductive Hypothesis building, Types of Hypothesis</p>
II	<b>Research Approach Design and strategy</b>	<p><b>Understanding Variables:</b> Definition and Types of Variables  <b>Research Design/Proposal</b> - Research Design – Meaning, Types of Research Design, Basic principles of experimental designs, Types of experimental design, Developing a research Plan. Sampling – Census and sample survey, steps in sampling design, criteria for selecting a sampling procedure, characteristics of a good sample design, different types of sample design.</p>
III	<b>Data Collection and Data Presentation</b>	<p>Definition of Primary and Secondary data, Sources of Primary and Secondary data  <b>Data Collection Methods: Quantitative Data collection methods:</b> Interviews and Types of Interviews ( Face to face Interviews, Telephone Interviews, Computer Assisted Personal Interviewing) Questionnaires (Paper-pencil questionnaires, web based questionnaires) Scientific Experiments and Laboratory test methods  <b>Qualitative Data Collection Methods:</b> In depth Interview, Focus Group, Observation method, Document review, Ethnography  <b>Data Processing</b> – Steps in Data processing for <b>Quantitative Studies</b> and <b>Qualitative studies</b>  <b>Data Presentation:</b> Textual, Tabular ( Components of table, features of a good table, kind of tables, classification of data and tabular presentation) and Graphical</p>
IV	<b>Generalisation and Write Up and Research Ethics</b>	<p><b>Report Writing</b> - Research Report – Format of research report, main body of the report, references and appendices, style of writing, typing the report, pagination, tables and figures, bibliography, footnotes, margins, quotations, evaluating the report.  <b>Checks and Prevention of Plagiarism:</b>Plagiarismtypes, issues and consequences. Ways and means of protecting from plagiarism</p>

<b>V</b>	<b>Statistics</b>	Meaning and scope of statistics, role of statistics in research, measures of central tendency and dispersion. Co-efficient of Correlation and its Interpretation, Rank Correlation, Regression equation, Application of Chi – Square test, ANOVA test.
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<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b>	
	
1.	Research Methodology: Methods and Techniques, C R Kothari, New Age International (P) Ltd, Delhi, 2011.
2.	Introduction to Research in Education, Donald Ary, Lucy Jacobs, Asghar Razavieh, Christine Sorensen, Cengage Learning, 2009
3.	Research Methodology: A Step By Step Guide For Beginners, 2/E, Ranjit Kumar, Pearson Education India, 2018
4.	An Introduction to Statistical Methods, S P Gupta, Vikas publishing House, Delhi, 2009.
<b>Highly Recommended, not Compulsory</b>	
	
5.	Research Methodology: An Introduction, Wayne Goddard, Stuart Melville, Jut and Company Ltd, 2004
6.	Research Methodology and Statistical Techniques, Santosh Gupta, Deep and Deep Publications, 1999
<b>Good for Students who have Future Interests</b>	
	
7.	Statistical Method- An Introductory text. J.Medo, New Age publishers, Delhi, 2005

**CORE PAPER-13**  
**TEXTILE TESTING**

**Course Code:** 18UPTAD1C13

**Marks:** 75 Marks

**Course Description:**

This course updates the students about the textile testing objectives and measuring atmospheric conditions like moisture content and moisture regain, determining fibre properties, testing the various yarn and fabric properties and colour fastness tests.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Discuss the Quality Parameters and standards of textile testing	<b>Cognitive Level</b>
CO2	Outline the methods, procedures and instruments to determine the fibre length, fibre fineness and fibre strength	
CO3	Explain the Yarn testing methods for count, twist, strength and unevenness	
CO4	Describe the suitable testing methods for fabric weight, count, thickness, crease recovery, abrasion, stiffness, strength, drape and pilling	
CO5	Distinguish the Comfort related properties such as air permeability, water and vapour transmission and heat transmission and various colour fastness tests	

Course Learning Outcomes (COs)	Programme Specific Outcomes(PSs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	H		H					M	M	H	M
CO2	H	H		H					M	M	H	M
CO3	H	H		H					M	M	H	M
CO4	H	H		H					M	M	H	M
CO5	H	H		H					M	M	H	M

Unit	Unit Title	Learning Chapters
I	<b>An overview of textile testing and humidity</b>	<b>Textile testing and its objectives:</b> Introduction to standards – Importance, types, International Quality parameters and standards like AATCC, ASTM, BIS etc. <b>Moisture and Humidity</b> – its importance and relationship to textiles, Standard atmospheric conditions, Measurement of humidity – Wet and Dry bulb hygrometer, Sling hygrometer, Measurement of moisture regain and content by Conditioning oven and Shirley moisture meter
II	<b>Testing of fibre properties</b>	<b>Fibre testing</b> – Fibre length and its importance; Methods of measuring fibre length - Baer sorter; Fibre fineness – Sheffield method and ATIRA fibre fineness tester; Fibre Maturity – Caustic soda swelling method; Fibre strength – Measurement of strength using Pressley tester and Stelometer, Fibre Quality Index; Analysis of trash and lint content in cotton by Shirley trash analyser
III	<b>Determination of yarn properties</b>	<b>Yarn testing</b> – Determination of yarn count, Instruments used for determination of count by Quadrant balance Twist and its significance – Estimation of twist by Twist contraction method and Take – up twist tester; Measurement of yarn strength using CRL, CRT and CRE principles, CSP determination, Study of instruments – Single thread strength tester and Lea strength tester; Yarn evenness – Random and periodic variations, Index of irregularity, Yarn appearance board and ASTM standards, Uster Evenness tester, UsterClassimat; Influence of yarn hairiness on fabric quality
IV	<b>Determination of fabric properties</b>	<b>Fabric testing</b> – Determination of fabric weight; Count determination; Importance of cover factor; Crimp properties – Shirley crimp tester; Measurement of thickness by Shirley thickness gauge; Measurement of crease recovery – Shirley crease recovery tester; Abrasion resistance – serviceability, wear and measurement by Martindale abrasion tester; Fabric strength – Tensile, Tearing and Bursting strength testers; Assessment of pilling in fabric – ICI pill box tester, Measurement of fabric drape; Objective measurement of fabric handle – Kawabata Evaluation Systems for Fabric (KESF) and Fabric Assurance by Simple Testing (FAST) testers
V	<b>Testing of fabric comfort</b>	<b>Comfort related properties</b> - Assessment of air permeability, water and vapour transmission, heat transmission; Colour Fastness – Importance and factors affecting colour fastness, Colour fastness to Washing, Sunlight, Crocking, Pressing and Perspiration, Grey scales and ratings

## READING LISTS AND RESOURCES

### Compulsory



- |    |   |
|----|---|
| 1. | Principles of Textile Testing, J.E.Booth, 3 <sup>rd</sup> Edition 1986, CBS Publishers & Distributors, 1996   |
| 2. | Textile Testing, P.Angappan and R.Gopalakrishnan, 4 <sup>th</sup> revised edition, SSMITT Students Co-operative Stores, Komarapalayam.  |
| 3. | Hand Book of Textile Testing and Quality Control, E.B.Groover and D.S.Hamby, 1 <sup>st</sup> U.S. Edition, 1960, Wiley Eastern Reprint 1988, Published by Mohinder Singh Sejwal (for Wiley Eastern Limited), New Delhi, India |
| 4. | Hand Book of methods of test for cotton fibers, yarns and fabrics, V.S.Sundaram and R.L.N.Iyengar, CTRL, Mumbai, 1969   |
| 5. | Fabric testing by Jinlian Hu, first edition, Woodhead publishing, 2008  |
| 6. | Physical testing of textiles by B.P.Saville, Woodhead publishing series in textiles, Elsevier, 1999   |

### Highly Recommended, not Compulsory



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|----|--|
| 7. | A practical guide to textile testing by K.Amutha, CRC Press, 2016.   |
| 8. | Methods of Test for Textiles – B.S.Handbook No.12, 1974, British Standards Institution, New Delhi, India <a href="https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622">https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622</a> |
| 9. | Textile testing: fibre, yarn and fabric, by Arindam Basu, South India Textile Research Association, 2006.  |

### Good for Students who have Future Interests



- |    |   |
|----|---|
| 7. | <a href="https://books.google.co.in/books/about/Textile_Testing">https://books.google.co.in/books/about/Textile_Testing</a> . |
|----|---|

**CORE PAPER-14**  
**STANDARDS AND SPECIFICATIONS FOR TEXTILES**

**Course Code:** 18UPTAD1C14

**Marks:** 75 Marks

**Course Description:**

This course introduces the students to standard test methods for identification of fibres which are very important to a number of industries including textiles, forensic and design. For Purpose of fashion or aesthetics, standards and specifications of fabrics both woven and knit for different types of apparel that are acceptable to consumer are incorporated.

An important and emerging part of Medical textiles is hygiene and health sector. As Medical textiles cover a broad range of functionalities, antimicrobials being the most important function an understanding to evaluate the effectiveness of Antimicrobials on textiles are supplemented in the course. The standards of hygiene and health sector items such as sanitary napkins face mask, medical drapes and gowns are integrated in the course for new research and product development.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
<b>CO1</b>	Explain the standard test methods for identification of fibres in Textiles and Standard Practice for Conditioning and Testing Textiles	<b>Cognitive level</b>
<b>CO2</b>	Describe the procedure and evaluation techniques to test antibacterial and antifungal textiles	
<b>CO3</b>	Explain the woven and knit fabric performance specification for women's, girls', men's and boys' wear	
<b>CO4</b>	Compare the standard performance requirements acceptable to consumer for underwear fabrics, swimwear and denim fabrics	
<b>CO5</b>	Describe the standard procedures to manufacture health and hygiene products such as Sanitary Napkins, Surgical face mask, Surgical gowns and first aid dressing	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
<b>CO1</b>	H	H	H	H				H	H	H	H	
<b>CO2</b>	H	H	H	H		H	H	H	H	H	H	H
<b>CO3</b>	H	H	H	H		H		H	H	H	H	
<b>CO4</b>	H	H	H	H		H	H	H	H	H	H	H
<b>CO5</b>	H	H	H	H		H	H	H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>Standard Test Methods For Identification of Fibers in Textiles and Conditioning of Textiles</b>	<ol style="list-style-type: none"> <li>1. Standard Test Methods for Identification of Fibers in Textiles</li> <li>2. Fiber analysis Qualitative</li> <li>3. Fiber analysis: Quantitative</li> <li>4. Standard Practice for Conditioning and Testing Textiles Scope, Terminology: Moisture Content, Moisture equilibrium, Precondition, Standard atmosphere for preconditioning textiles, Standard atmosphere for testing textiles, Apparatus, Preparation of Test Apparatus and Calibration, Procedure, Standard atmosphere for testing various materials</li> </ol>
II	<b>Antimicrobial Textiles</b>	<ol style="list-style-type: none"> <li>1. Applications and Objectives, Antimicrobial Textiles and their fields of Application, Two types of Activity – Passive Antimicrobial Principles and Active Antimicrobial Principles</li> <li>2. Antibacterial Activity Assessment of Textile Materials: Agar Plate Method</li> <li>3. Antibacterial Activity Assessment of Textile Materials: Parallel Streak Method</li> <li>4. Antibacterial Finishes on Textile Materials: Purpose and scope, Principle, Terminology-Activity, Antibacterial agent, Zone of Inhibition, Safety Precautions, Uses and Limitations, Test Organisms, Materials, Media and Reagents, Test Specimen, Procedure, Evaluation, Precision and Bias</li> <li>5. Antifungal Activity on Textile Materials: Mildew and Rot Resistance of Textile Materials: Purpose and scope, Principle, Terminology-Fungicide, Fungistatic, Mildew resistance, Rot resistance Antibacterial agent, Zone of Inhibition, Safety Precautions</li> </ol>
III	<b>Standard performance Specification for Woven and Knit Fabrics</b>	<ol style="list-style-type: none"> <li>1. Standard Performance Specification for Women’s and Girls’ Woven Sportswear, Shorts, Slacks, and Suiting Fabrics</li> <li>2. Standard Performance Specification for Women’s and Girls’ Knitted Sportswear fabrics: Scope, Specification Requirements, Significance and use, Sampling and Test methods</li> <li>3. Standard Performance Specification for Men’s and Boys’ Woven Dress Suit Fabrics and Woven Sportswear Jacket, Slack, and Trouser Fabrics</li> <li>4. Standard Performance Specification for Men’s and Boys’ Knitted Dress Suit Fabrics and Knitted Sportswear Jacket, Slack, and Trouser Fabrics</li> <li>5. Standard Performance Specification for Men’s and Boys’ Knitted Dress Shirt Fabrics: Scope, Specification Requirements, Significance and use, Sampling and Test methods</li> </ol>



IV	<b>Standard Performance Specification for Woven Fabrics, Underwear Fabrics, Denim Fabrics &amp; Swimwear Fabrics</b>	<ol style="list-style-type: none"> <li>1. Standard Performance Specification for Woven Blouse, Dress, Dress Shirt and Sport Shirt Fabrics: Scope, Significance and Use, Test methods</li> <li>2. Standard Performance Specification for Brassiere, Slip, Lingerie and Underwear fabrics: Scope, Significance and use, Test methods</li> <li>3. Standard Specification for 100 % Cotton Denim Fabrics: Scope, Significance and use, Sampling, Specification requirement, Test methods</li> <li>4. Standard Performance Specification for Knit Swimwear Fabrics</li> <li>5. Standard Performance Specification for Woven Swimwear Fabrics: Scope, Significance and use, Sampling, Specification requirement, Test methods</li> </ol>
V	<b>Health Care and Hygiene Products</b>	<ol style="list-style-type: none"> <li>1. Specifications For Sanitary Napkins: Materials, Sizes, Manufacture, Workmanship and Finish, Requirements, Tests, Packing and Marking</li> <li>2. Specifications for Surgical Face Masks</li> <li>3. Specification for Surgical Drapes, Gowns and Clean Air Suits, Used as Medical Devices, for Patients, Clinical Staff and Equipment - Test Method to Determine the Resistance to Wet Bacterial Penetration</li> <li>4. Specifications for First – aid-dressings</li> </ol>

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★★	
1.	An Index of State Specifications and Standards: Covering Those Standards and Specifications Issued by State Purchasing Offices of the United States, Volume 13 Linda L. Grossnickle U.S. National Bureau of Standards, 1973
2.	Quality Assurance for Textiles and Apparels, Fairchild publications, 2nd Edition, Sara J Kasolph, 2007.
3.	Physical Testing of Textiles, Saville, B.P. Woodhead Publishing Ltd and CRC Press LLC, 1999
4.	Managing Quality in the Apparel Industry Pradip V. Mehta, Satish K. Bhardwaj New Age International, 1998
5.	Publications of the National Bureau of Standards Catalog United States. National Bureau of Standards U.S. Government Printing Office, 1971
6.	Publications of the National Institute of Standards and Technology Catalog, Volume 1 National Institute of Standards and Technology (U.S.) The Institute, 1980
<b>Highly Recommended, not Compulsory</b> ★★	
7.	Product Safety and Restricted Substances in Apparel Subrata Das CRC Press, 26-Oct-2016 Foreign Regulations Affecting U.S. Textile/apparel Exports U.S. Department of Commerce, International Trade Administration, 1994
8.	Supply Chain Safety Management: Security and Robustness in Logistics Michael Essig, Michael Hülsmann, Eva-Maria Kern, Stephan Klein-Schmeink Springer Science & Business Media, 29-Nov-2012
<b>Good for Students who have Future Interests</b> ★	
9	Fabric Testing Jinlian Hu Elsevier, 09-Sep-2008

**CORE PAPER-15**  
**TEXTILE TESTING PRACTICALS**

**Course Code:** 18UPTAD1C15

**Marks:**60 Marks

**Course Description:**

This course will help the students to learn about the determination of fibre length, testing various yarn and fabric properties and colour fastness tests.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Determine the Mean length, Effective length, Short fibres percentage and Dispersion percentage by Baer sorter method	<b>Psychomotor Level</b>
CO2	Perform yarn tests for crimp percentage, evenness and single yarn strength	
CO3	Analyse fabric test such as weight, count, thickness, crease recovery, abrasion, stiffness, bursting strength, tearing strength, drape and pilling	
CO4	Assess various colour fastness tests like perspiration, crocking, washing, laundrometer, pressing and sunlight	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	H		H		H		M	H	M	H	M
CO2	H	H		H		H		M	H	M	H	M
CO3	H	H		H		H		M	H	M	H	M
CO4	H	H		H		H		M	H	M	H	M

Unit	Unit Title	Learning Chapters

I	<b>Testing of fibres</b>	Determination of Fibre Length Using Baer sorter and Preparation of Baer sorter diagram
II	<b>Testing of yarns</b>	Determination of yarn evenness and imperfections, yarn strength and crimp percentage.
III	<b>Testing of fabrics</b>	Determination of the tensile strength, stiffness, abrasion resistance, crease recovery, drape, bursting strength, tearing strength, Pilling and shrinkage of the given fabric.
IV	<b>Fabric colour fastness tests</b>	Testing the Colour Fastness of the given fabric by Crock meter, perspirometer, launderometer and sunlight.

#### READING LISTS AND RESOURCES

##### Compulsory



1. Principles of Textile Testing, J.E.Booth, 3<sup>rd</sup> Edition 1986, CBS Publishers & Distributors, 1996
2. Textile Testing, P.Angappan and R.Gopalakrishnan, 4<sup>th</sup> revised edition, SSMITT Students Co-operative Stores, Komaraplayam.
3. Hand Book of Textile Testing and Quality Control, E.B.Groover and D.S.Hamby, 1<sup>st</sup> U.S. Edition, 1960, Wiley Eastern Reprint 1988, Published by Mohinder Singh Sejwal (for Wiley Eastern Limited), New Delhi, India
4. Hand Book of methods of test for cotton fibers, yarns and fabrics, V.S.Sundaram and R.L.N.Iyengar, CTRL, Mumbai, 1969
5. Methods of Test for Textiles – B.S.Handbook No.12, 1974, British Standards Institution, New Delhi, India

##### Highly Recommended, not Compulsory



6. A practical guide to textile testing by K.Amutha, CRC Press, 2016.
7. Methods of Test for Textiles – B.S.Handbook No.12, 1974, British Standards Institution, New Delhi, India <https://technicaltextile.net/articles/finishing-techniques-for-medical-textiles-3622>
8. Textile testing: fibre, yarn and fabric, by Arindam Basu, South India Textile Research Association , 2006.

##### Good for Students who have Future Interests



9. Fabric Testing JinlianHuElsevier, 09-Sep-2008

**CORE PAPER -16**  
**COMPUTERIZED PATTERN MAKING PRACTICAL**

**Course Code:**18UPTAD1C16

**Marks:** 60 Marks

**Course Description:**

This course updates the students to use CAD Software very effectively for pattern making and grading. They can further work with advanced CAD Techniques including manipulating, dart manipulation, marker making and Plotting the garment patterns.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Design patterns for children’s wear for basic and complex styles	<b>Psychomotor Level</b>
CO2	Design patterns for women’s wear for basic and complex styles	
CO3	Design patterns for men’s wear for basic and complex styles	
CO4	Grade the patterns for children’s wear, women’s wear and men’s wear for different sizes	
CO5	Plan different layouts for marker efficiency to minimize fabric wastage	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A.Knowledge&Understanding				B.Practical Skills			C.Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H		H		H		H	H	H	H	H	M
CO2	H		H		H		H	H	H	H	H	M
CO3	H		H		H		H	H	H	H	H	M
CO4	H		H		H		H	H	H	H	H	M
CO5	H		H		H		H	H	H	H	H	M

Unit	Unit Title	Learning Chapters
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<b>I</b>	<b>Prepare Garment patterns for children's wear</b>	Yoke frock Baba suit Summer frock Skirt and tops
<b>II</b>	<b>Prepare Garment patterns for Women's wear</b>	SalwarKameez Tops Nightie Princess line dress
<b>III</b>	<b>Prepare Garment patterns for men's wear</b>	Slack shirt Full sleeve T-Shirt Bermuda Pleated trouser Bell bottom
<b>IV</b>	<b>Grading the Garment Pattern</b>	Grading the Garment pattern for Children's, Women and men's wear
<b>V</b>	<b>Prepare Marker Plan for Garment Pattern</b>	Prepare final marker plan for effective layout for the Graded Garment pattern for Children's, Women and men's wear

#### READING LISTS AND RESOURCES

##### Compulsory



1. Patternmaking for Fashion Design, Helen Joseph Armstrong, Pearson Education, 2011
2. Patternmaking: a comprehensive reference for fashion design, Sylvia Rosen, Pearson Prentice Hall, 2004
3. Metric Pattern Cutting for Children's Wear and Babywear, Winifred Aldrich, John Wiley & Sons, 2012
4. Metric Pattern Cutting for Menswear, Winifred Aldrich, John Wiley & Sons, 2012
5. Computer Aided Pattern Design and Product Development, Auto cad, Beazley Alison and Bond Terry, 2004
6. Tukacad Manual

##### Highly Recommended, not Compulsory



7. Computer Aided Designing and design concept and application. Veisinet, D.D. (1987)
8. CAD in Clothing and Textiles, Blackwell Science Ltd Aldrich, W. (1994)

##### Good for Students who have Future Interests



7. Textile Engineering: An introduction, Walter de Gruyter GmbH & Co KG. Yasir Nawab,
8. Pattern Cutting and Making Up: The Professional Approach, Volume 1 Martin Shoben, Janet Ward Routledge, 1987

**ELECTIVE PAPER-6**  
**INTELLECTUAL PROPERTY RIGHTS TO TEXTILES AND FASHION**

**Course Code:** 18UPTAD1E06

**Marks:** 75 Marks

**Course Description:**

This course updates the students on Intellectual Property Rights for Textiles and Apparel Design, identify different property rights and classify the methods of filing the property rights. Understand copy right, trade mark, industrial design process and patent filing process in detail.




**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Describe the objectives and functions of intellectual property rights.	<b>Cognitive level</b>
CO2	Summarize the industrial design protection process, design act, Criteria and qualification for registration	
CO3	Practice drafting procedure for Intellectual Property rights	
CO4	Compare Copy right and Trade mark right for fashion design	
CO5	Differentiate Geographical indication of goods for fashion design and Patenting fashion products	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H								H		H	
CO2	H								H		H	
CO3	H		M	H				H	H		H	L
CO4	H		M	H				H	H		H	L
CO5	H		M	H				H	H		H	L

Unit	Unit Title	Learning Chapters
I	<b>Introduction to Intellectual Property rights</b>	What are Intellectual property rights, Objectives of IP law, Legal rights for fashion designers- Types of Rights, Fashion design piracy.
II	<b>Industrial Design protection</b>	What is Design Act 2000, Objective of design act, understanding design act, Criteria and qualification for registration, Duration of the registration of design, Cost of filing design, Penalty of the piracy of registered design, Procedure for registration of design.
III	<b>Copy Right Protection</b>	Understanding copy right act for fashion design, Requirements of copyright protection, who owns the copy right at work, Copy right and Design overlap, Difference between copy right and design law, Nature and scope of protection, Terms of protection.
IV	<b>Trademark Protection for fashion Design</b>	What is trade mark, Types of trade mark, how trade mark protects the brand name, what trade mark done in fashion, Duration of Registration.
V	<b>Geographical indication</b>	<b>Geographical indication:</b> What is GI? Protection of GI, Examples of GI in textiles and clothing in India, why do geographical locations need protection, How GI is protected. <b>Patent:</b> What is patent? Why patent right, who can apply for patent, Types of patent, Scope of protection.

READING LISTS AND RESOURCES	
<b>Compulsory</b> 	
1.	Information Booklet for Applicants for Registration of Designs-Department of industrial policy and promotion, Ministry of commerce and industry, Government of India.
2.	Managing Intellectual Property: The Strategic Imperative, Vinod V. Sople, PHI Learning Pvt. Ltd., 2006
3.	Using Design Protection in the Fashion Industry, Ulla Vad Lane-Rowley, Wiley, 1997
4.	Fashion Law: A Guide for Designers, Fashion Executives, and Attorneys, Guillermo C. Jimenez, Barbara Kolsun, A&C Black, 2014
5.	Creating Economy: Enterprise, Intellectual Property, and the Valuation of Goods Barbara Townley, Philip Roscoe, Nicola Searle Oxford University Press, 10-Jan-2019
<b>Highly Recommended, not Compulsory</b> 	
6.	Textile Design Protection: Copyright, CAD and Competition” in Technovation, Vol. 20 (1), pp. 47-53. Dickson, Keith and Coles, Anne-Marie (1999),
7.	Intellectual Property and Innovation Management in Small Firms, Coles, Anne-Marie, Dickson, Keith and Woods, Adrian (2003), "Copyright Protection Strategies by Small Textile Firms" in Robert A. Blackburn (ed) Routledge, London & New York.
<b>Good for Students who have Future Interests</b> 	
7.	The Importance of Copyright for the Textile, Apparels and Lifestyle Sector – Case Studies”, Presentation at “Training The Trainers” Workshop on Intellectual Property Rights for The National Institute of Fashion Technology, New Delhi Balakrishnan, Jyotsna (2005),

8.	Geographical Indications: UNCTAD's Initiatives", Presentation at the Regional Conference on IPR Protection through Geographical Indications, co-organized by the UNCTAD India Programme and the Textiles Committee, Lucknow, India, 4- 5 September. Banga, Rashmi (2008),
9.	Structural Adjustment in Textiles and Clothing in the Post-ATC Trading Environment", OECD Trade Policy Working Paper No. 4, TD/TC/WP(2004)23/FINAL Audet, Denis (2004),

**ELECTIVE PAPER-8**  
**VISUAL MERCHANDISING**

**Course Code:** 18UPTAD1E08

**Marks:** 75 Marks

**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 Outcomes (COs)**

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


S. No	Outcomes	Domains of Learning
CO1	Recall the fundamental concepts of Visual merchandising and role of visual merchandiser in retail outlets	<b>Cognitive level</b>
CO2	Demonstrate the promotional merchandising Techniques for exterior display	
CO3	Select the appropriate visual merchandising tools to achieve a good interior display presentation	
CO4	Predict an innovating and eye catching window display with suitable display techniques	



<b>CO5</b>	Categorize the tools used in visual merchandising display	
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Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	M		H	M			M	H	H	H	H	H
CO2	M		H	M	M		H	H	H	H	H	H
CO3	H		H	H	M		H	H	H	H	H	H
CO4	H		H	H	M		H	H	H	H	H	H
CO5	H		M		M		H	M	H	H	M	H

Unit	Unit Title	Learning Chapters
I	<b>Overview of Visual Display</b>	<b>Essentials of Visual Display:</b> What is Visual Merchandising? How and where visual merchandisers work. <b>Display Design Basics</b> -Line, composition, Texture, Colour and Lighting.
II	<b>Exterior display</b>	<b>Exterior Presentation:</b> Exterior Signs, Marquees, Banners, Awnings, Walks and Entries and Landscaping,
III	<b>Interior display</b>	<b>Interior Presentation:</b> Interior display in selling area and sales support area, Areas of display- Windows, Highpoint, Focal point, Nesting Tables, Staircase landings, Step raisers, Lift area, Danglers, Cash counters, pillars and entrances
IV	<b>Window display</b>	<b>Window Display:</b> Scope of Window display, Window display designing process, types of window display, how to create eye-catching and innovative displays that will draw the customer into the retailer and prove the success of your window design
V	<b>Signage fixtures and props</b>	<b>Signage, Fixtures and Props:</b> 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. Common errors in creating window display, Promotional and seasonal display techniques

READING LISTS AND RESOURCES	
<b>Compulsory</b> 	
1.	Visual Merchandising, Swati Bhalla, Anuraag S, Tata McGraw-Hill Education, 2010
2.	Visual Merchandising for Fashion, Sarah Bailey, Jonathan Baker, A&C Black, 2014.
3.	Fashion Retailing: A Multi-Channel Approach, Diamond, Pearson Education India, 2007

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

## ELECTIVE PAPER-9 CLOTHING BOUTIQUE MANAGEMENT

**Course Code:** 18UPTAD1E09

**Marks:** 75 Marks

### **Course Description:**

This course is designed to develop the entrepreneurship skills and help aspiring students to become successful entrepreneurs. It is to familiarise the students with the process and procedure of setting up new venture.

### **Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Infer the government norms to start a boutique business	<b>Cognitive level</b>
CO2	Plan and execute the procedure for boutique development	
CO3	Formulate themselves with skills required to establish and excel in boutique handling and promotion	
CO4	Appraise the impact of technologies and new business strategies	
CO5	Create a Plan and organize the daily running of boutique business	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H		H	H				H	H	H	H	H
CO2	H		H	H			H	H	H	H	H	H
CO3	H	H	H				H	H	H	H	H	H
CO4	H	H	H	H			H	H	H	H	H	H
CO5	H		H	H	H		H	H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>Steps in starting a boutique business</b>	How to start a boutique: Creating a business plan, finding ideal location, financial planning
II	<b>Procedures to start a business</b>	Government norms to run a boutique, Interior designing, sourcing of raw materials and Inventory planning
III	<b>Study on relationship with supplier and consumers</b>	Buyer supplier relationships, consumer relationship, Tips and Tricks to attract the customer
IV	<b>Recent technologies in boutique handling</b>	Essential Technology support to run a boutique and Labour management, Warehouse.
V	<b>Skills related to marketing and promotion and R&amp;D</b>	Quality control, Research and development and analysis, Marketing and Promotion and maintenance of boutique

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★ ★ ★	
1.	Opening a Boutique Clothing Store: How to Start your Own Unique Boutique, Briana Stewart Bull City Publishing, 2014
2.	FabJob Guide to Become a Boutique Owner, Tag Goulet, DebraMikaelsen, Catherine Goulet, FabJob Incorporated, 2011.
3.	Fashion Unraveled: How to Start, Run and Manage an Independent Fashion Label, Jennifer Lynne Matthews, 2009
<b>Highly Recommended, not Compulsory</b> ★ ★	
4.	Start Your Own Clothing Store and More: Women's, Men's, Children's, Specialty(Startup Series), Entrepreneurs press and Charlene Davis, Paperback – January 1, 2011, Third edition
<b>Good for Students who have Future Interests</b> ★	
5.	Business Boutique: A Woman's Guide for Making Money Doing What She Loves Christy Wright Ramsey Press, 17-Apr-2017.
6.	Retail Management: A Strategic Approach Barry Berman, Joel R. Evans Macmillan, 1983
7.	Entrepreneurship and Venture Management: Text and Cases Kenneth W. Olm, George G. Eddy C.E. Merrill Publishing Company, 1985
8.	Start Your Own Clothing Store and More: Women's, Men's, Children's, Specialty Entrepreneur Press, 01-Jan-2011
9.	Clothing Line Start Up Secrets: How to Start and Grow A Successful Clothing Line Brianna Stewart, Brian ClietteBull City Publishing, 04-Jun-2014
10.	Boutiques and Other Retail Spaces: The Architecture of Seduction David Vernet, Leontine de Wit Routledge, 17-Aug-2007

**CORE PAPER -17**  
**SOURCING AND BUYING FOR RETAIL MERCHANDISING**

**Course Code:** 18UPTAD1C17

**Marks:**75 Marks

**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 Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Classify the field of fashion retailing and retail formats, study on organizational chart of retail and Identifying and understanding consumer behaviour.	<b>Cognitive level</b>
CO2	Review the concept of merchandise planning and forecasting methods of assortment planning	
CO3	Identify the sourcing techniques for the development of the retail business and evaluate the vendor relations and vendor performance for sourcing and buying	
CO4	Demonstrate the performance goals of supply chain management	
CO5	Summarize the role of technology in sourcing and buying for retail in the field of textiles and apparel sector	

Course Outcomes (COs)	Programme Specific Outcomes(PSOs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	M	H	M	M		M	H	H	H	H	H
CO2	H		M	H	M		M	H	H	H	H	H
CO3	H		H		H		M	H	H	H	H	H
CO4	H	M	H		M		M	H	H	M	H	H
CO5	H		H		M		M	H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	<b>Fashion Retailing Structure and Consumer Analysis</b>	Introduction to fashion retailing: Classification of retailers, Retail formats, organizational structures, fashion retailing organization charts, fashion consumer identification and analysis-consumer behaviour, consumer assessment theories and consumer analysis.
II	<b>Merchandise Planning and Assortment Planning</b>	Merchandise Planning: Concept of Merchandise planning, implications of merchandise planning, Process of merchandise planning, determining the merchandise requirements. Assortment planning: Forecasting methods of clothing assortment planning, Forecasting product selection, Forecasting order quantity, forecasting short term sales-sales forecasting methods

III	<b>Sourcing and Buying and Vendor Analysis</b>	Sourcing and Buying: Sourcing defined what needs to be sourced, different ways of buying a garment, selecting and interacting with merchandise sources, evaluating merchandise. 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.
IV	<b>Logistics and Inventory Management</b>	Logistics: Performance goals, supply chain management, Order processing and fulfilment, Transportation and warehousing, 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
V	<b>Recent Progresses in retail merchandising</b>	Technology in Retailing: Role of technology in retailing, technologies in retailing, impact of technology on relationships in retailing

<b>READING LISTS AND RESOURCES</b>	
<b>Compulsory</b> ★★☆☆	
1.	Mastering Fashion Buying and Merchandising Management Tim Jackson, David Shaw Macmillan 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.	Law for Retailers: The Legal Beagle Keeps You Straight with a Guide to Trading Within the Law W. H. Thomas Management Books 2000, 2003
<b>Highly Recommended, not Compulsory</b> ★★☆☆	
4.	Retailing Tony Kent, Ogenyi Omar Macmillan Education UK, 13-Dec-2002
5.	Strategic Retail Management: Text and International Cases Joachim Zentes, Dirk Morschett, Hanna Schramm-Klein Springer Science & Business Media, 16-Oct-2007
<b>Good for Students who have Future Interests</b> ★☆☆☆	
6.	<a href="https://www.slideshare.net/ujjmishra/retail-buying-merchandising-purchasing">https://www.slideshare.net/ujjmishra/retail-buying-merchandising-purchasing</a>

**CORE PAPER -18**  
**DESIGNING WITH ILLUSTRATOR PRACTICAL**

**Course Code:** 18UPTAD1C18

**Marks:** 60 Marks

**Course Description:**

The given paper enables the students to use Adobe Illustrator Software very effectively. They can further work with advanced graphics including the older versions to upcoming new version of Adobe Illustrator. Knowledge acquired in working with Illustrator will enable one to handle Corel Draw and Adobe Photoshop without any difficulty.

### Course Outcomes (COs):

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

S.No	Outcomes	Domains of Learning
CO1	Perform the basics of Adobe Illustrator, Manipulate with Adobe Illustrator workspace using align and distribution and repeat setting.	<b>Psychomotor Level</b>
CO2	Manipulate with Colors and swatches and work with advanced graphics	
CO3	Format and work with Object and Symbols to create motif designs effectively.	
CO4	Design Garments and work with Graphics to create a complete set of portfolios effectively	
CO5	Develop accessories styles and work with Graphics to create a complete set of portfolios effectively	

Course Outcomes (COs)	Programme Specific Outcomes(POs)											
	A .Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H				H		H		H	H	H	
CO2	H			H	H		H		H	H	H	
CO3	H			H	H		H		H	H	H	
CO4	H		H	H	H		H	H	H	H	H	
CO5	H		H	H	H		H	H	H	H	H	H

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Introduction to adobe Illustrator</b>	<b>Introduction:</b> Adobe Illustrator need for Fashion industry <b>Work Space Overview:</b> Tools and menu bar, Creating a new Document, Shortcut keys and uses, Importing and exporting images, Art board setup and size making, saving and printing the file in Adobe PDF format, GIF format, Illustrator format, JPEF format and PNG format
<b>II</b>	<b>Drawing and Formatting</b>	<b>Drawing:</b> Drawing, Adjusting Anchor points with pen tool, segment, Adding Converting raster to vector, Outline stroke and sizes, Copy and paste objects <b>Brushes:</b> <u>Drawing and editing brushed paths</u> , Add and removing brushes, Control brush sizes, Managing Brush libraries <b>Tracing artwork:</b> <b>Lock and unlock objects, Tracing with pen tool, Tracing with the auto trace tool</b> Path: Elements of paths, Selecting and moving paths



		<p><b>Layers:</b> Layers and uses, working with Layers and sub layers, Group and ungrouping layers, Clipping mask and release.</p> <p><b>Pathfinder:</b> Add, subtract, intersect, overlapping the object, Divide, trim, merge, crop the object</p> <p><b>Align and distribution:</b> Align object to art board, Align object to other object</p>
<b>III</b>	<b>Colors , Swatches and Character editing</b>	<p><b>Color:</b> Coloring the object, CMYK and RGB colors, Conversion of RGB to CMYK, Blending modes, Using the color palette, Color wheels model, Pantone colors and numbers, pick color from images</p> <p><b>Gradient effect:</b> Giving gradient effects to objects</p> <p><b>Swatches:</b> swatch libraries, moving swatches to Swatches palette, Swatches palette loading colors from other files</p> <p><b>Filters:</b> Filters and uses, working with filters, giving effects to pictures</p> <p><b>Character:</b> Work with Text, Typography and uses, Managing sizes, Adding and removing fonts</p> <p>Typography design</p>
<b>IV</b>	<b>Formatting and working with Object and Symbols</b>	<p><b>Transform:</b> Scale strokes and effects, Transform pattern, Transform object only</p> <p><b>Symbols:</b> Adding and removing symbols, Designs using symbols</p> <p><b>Creating stripe Repeat:</b> Creating pattern, Filling a page with pattern</p> <p><b>Creating Print Repeat:</b> Creating the Repeat, working with effects, adding additional shapes to print</p> <p><b>Color Combination:</b> Generate print color way, Generate stripe color way</p>
<b>V</b>	<b>Designing Garments, accessories and working with Graphics</b>	<p><b>Designing Garments:</b> Draw men's shirt with details, Draw women's Kutras with details, Draw trousers with details, Coloring the garment, Draw accessories like belt shoes, caps buttons, bows and buckles</p> <p><b>Graphics:</b> Draw or trace flowers and objects, Draw vector graphics and add colors, Draw graphics mix with Photoshop layers, Draw typography graphics and fix it to silhouettes.</p>

#### READING LISTS AND RESOURCES

Compulsory





1.	Fashion Designer's Handbook for Adobe Illustrator, Marianne Centner, Frances Vereker, John Wiley & Sons, 2011.
2.	Adobe Illustrator CS6 on Demand, Perspection Inc., Steve Johnson, Que Publishing, 2012
3.	Adobe for Fashion: Illustrator CS6, Robin Schneider, Lulu.com, 2012
<b>Highly Recommended, not Compulsory</b>	
	
4.	Adobe creative team of designers, Classroom in a book, Adobe Press (July 5, 2013) ISBN: 978-0321929495
5.	Adobe Illustrator CC Classroom in a Book, Brian Wood, Adobe Press 1 <sup>st</sup> Edition (Dec 18, 2015) ISBN: 978-0134308111
<b>Good for Students who have Future Interests</b>	
	
6.	Adobe InDesign CS6 Level 1 (English version): Graphic DesignAMCCollegeAdvanced Micro Systems
7.	The Graphic Designers Digital Toolkit: A project based introduction to Adobe Photoshop CS6, Illustrator CS6 and InDesign CS6, Allan Wood, 6 <sup>th</sup> Edition, Cengage Learning, (Aug 2, 2012)
8.	The Designer Collection Revealed: Adobe In Design CS5, Photoshop CS5 and Illustrator CS5 (Adobe Creative Suite), Chris Botello, Elizabeth Eisner Reding, Cengage Learning 1 <sup>st</sup> Edition (Aug 20, 2010)

**CORE PAPER - RESEARCH  
RESEARCH PROJECT AND VIVA VOCE**

**Course Code:** 18UPTAD1C19

**Marks:** 200 Marks

**Course Description:**

Each student will be required to identify a problem related to their area of interest and carryout scientific research. The research allows you to enhance the problem solving skills and academic credit through publications. The students will initiate the research work with the faculty mentor and gains hands on experience by completing a research project.

### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Identify appropriate research problem.	<b>Cognitive &amp; Psychomotor Level</b>
CO2	Carry out review of literature	
CO3	Formulate the methodology to undertake research project.	
CO4	Compose the outcomes of the project by writing thesis.	
CO5	Defend the project work in viva voce examination.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)											
	A. Knowledge & Understanding				B. Practical Skills			C. Transferable Skills				
	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	C5
CO1	H	H		H	H				H	H	H	H
CO2	H	H		H	H				H	H	H	
CO3	H	H		H	H	H	H		H	H	H	H
CO4	H	H		H	H	H	H		H	H	H	H
CO5	H	H	H	H	H	H	H	H	H	H	H	H