



# PERIYAR UNIVERSITY

Periyar Palkalainagar  
Salem-636 011



*School of Professional Studies*  
**DEPARTMENT OF TEXTILES AND APPAREL  
DESIGN**

**Bachelor of Vocation (B.Voc)**  
Choice Based Credit System

**REGULATIONS AND SYLLABUS**  
**Effective from the academic year 2022 - 2023 and**  
**thereafter**

**B.Voc Textiles and Apparel Design**  
**Regulations and Syllabus**  
**Effective from the academic year 2022-23 and thereafter**

The department was established during the year 2015-2016. The Undergraduate course offered by the Department is B.Voc in Textiles and Apparel Design which gives an in-depth knowledge of fashion designing, Basics of textiles, Sewing Machine Operator, Production Supervisor, Draping, Garment Construction, Textile Analysis, Textile Processing, Sourcing Manager, Apparel merchandising, Industrial Engineering and Computer Application in Designing.

**Duration of the Programme**

The three-year undergraduate program in B.Voc Textiles and Apparel Design consists of six semesters under Choice Based Credit System with NOS/QP packs approved by the Sector Skill Council.

**Eligibility for Admission**

A Pass 10+3 Year Diploma, A Pass in Higher Secondary Examination (Academic or Vocational Stream) conducted by the Government of any state. No age Limit.

**Teaching Methodologies**

The teaching method will be Student Centered approach like On-the-Job Training, Internship, field trip and demonstration.

**Examinations**

Semester pattern is followed. The examination for the Semester I, III and V will be held in November/December and for Semester II, IV and VI will be in the month of April/May. NSDC Assessment will be held on the Sewing Machine Operator, Production Supervisor, Industrial Engineering and Sourcing Manager Levels followed by NOS.

**Scheme for valuation**

Evaluation will be done on a continuous basis and will be evaluated four times for a course. 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 will be done by multiple choice questions, analytical and descriptive types.

**Credit Calculation**

	<b>Method of teaching</b>	<b>Hours</b>	<b>Credit</b>
Lecture		1	1
Tutorial/Demonstration		1	1
Practical/Internship/On the job training/ self-Learning		2	1

**Scheme for Internal Marks in Theory (Maximum marks - 25)**

Attendance	- 05 marks
Assignment	- 05 marks
Internal Tests Best one of two tests	- 10 marks
Model Exam	- 05 marks

## Scheme for Internal Marks in Practical (Max.marks-40)

- Record - 20 marks
- Model Exam - 20 marks

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

## **PROGRAMME OUTCOMES**

1. The graduates will be employable at various levels (Certificate, Diploma, Advanced Diploma and Degree) of the programme.
2. The graduates have creative and innovative skills in the field of Textiles, Design and Apparel Industry.
3. The graduates can start up their business, freelance and consultancy
4. The graduates are capable of dealing with the recent developments and research in Textiles and Apparel Industry

## **GRADUATE ATTRIBUTES:**

### **1. Analysis of fibre to end use:**

Analyze the structure and processes of the fibre, yarn, and fabric.

### **2. Professional sewing skills:**

Apply essential knowledge and abilities in sewing, sewing machine operations, various industrial apparel machine maintenance, and Standard operating procedures in Apparel manufacturing units.

### **3. Design Development:**

Execute the core fashion designing skill sets for the work function of a fashion designer, such as colour concepts, design elements and principles, customized, industrial pattern making and portfolios.

### **4. Research and inquisition**

Develop research abilities for market research, trend analysis and forecasting, novel product development and design consulting.

### **5. Vocational and Industrial Exposure:**

Effortlessly obtain placements with skills acquired in Textiles, Apparel and Design which prepare the students to be technical experts in their chosen field.

### **6. Sustainable Development:**

Competent to work on up-to-date requirements in the Textile and Apparel Industries with expertise in quality norms and systems connected to Sustainable Apparel Production.

### **7. Innovation and Entrepreneurship:**

In an organization the graduates perform as a capable leader, able administrator and innovative design thinker. With their entrepreneurship knowledge, graduates can become Entrepreneurs and also become creative freelancers with design innovation in clothes and computer applications.

### **8. Management Techniques**

Administer the managerial responsibility by following the Standard Operating Procedures. The graduates will help to reduce waste, enhance factory efficiency, productivity and solve problems by applying their knowledge and skills of the lean manufacturing process and Six Sigma.

### **9. Personality Development:**

Achieve consistent performance in professional context with the use of Communication skills, etiquettes and adaptable awareness

### **10. Value Education**

By practicing yoga and physical fitness and raising environmental consciousness, the graduates can achieve their professional and personal goals.

### **11. Digital literacy:**

Demonstrate their proficiency by using software like Photoshop, Corel Draw, TUKA-CAD, and MS-Excel.

## **PROGRAMME SPECIFIC OUTCOMES:**

- PS01. Make use of acquired knowledge to analyze fibre to its end use.
- PS02. Apply their key knowledge in their professional Sewing skills.
- PS03. Execute the fundamental design development skills.
- PS04. Apply research skills for design and market needs.
- PS05. Acquire employment with their vocational and industrial exposure.
- PS06. Apply sustainable quality standards in Textile and Apparel production.
- PS07. Become an entrepreneur, act as an efficient leader and apply design thinking innovation and carryout freelancing opportunities.
- PS08. Apply management tools and techniques to improve processes and products.
- PS09. Achieve consistent performance in working environment with effective communication and etiquettes
- PSO10. Achieve personal and professional goals by practicing a healthy lifestyle and with environmental consciousness.
- PSO11. Apply modern tools and software.

## MAPPING OF PROGRAMME SPECIFIC OUTCOMES (PSOs) WITH GRADUATE ATTRIBUTES (GAs)

PROGRAMME OUTCOMES (POs)	GRADUATE ATTRIBUTES (GAs)										
	1	2	3	4	5	6	7	8	9	10	11
PSO1	✓										
PSO2		✓									
PSO3			✓								
PSO4				✓							
PSO5					✓						
PSO6						✓					
PSO7							✓				
PSO8								✓			
PSO9									✓		
PSO10										✓	
PSO11											✓

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

PROGRAMME OUTCOMES (POs)	PROGRAMME SPECIFIC OUTCOMES (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
PO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PO2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PO4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## MAPPING OF PROGRAMME OUTCOMES (PSOs) WITH COURSES

Type	Units	Courses	PROGRAMME SPECIFIC OUTCOMES (PSOs)										
			PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11
LEC	5	Tamil – I / Hindi - I		Yellow	Yellow	Red	Blue	Blue	Red	Blue	Red	Yellow	Blue
LAB	5	Functional English (P) - I		Blue	Yellow	Red	Red	Blue	Red		Red	Yellow	Red
LEC	5	Basics of Textiles	Red	Red	Red	Red	Red	Red	Red	Red	Yellow	Red	Red
LAB	4	Fibre to Fabric (P)	Red	Red	Red	Red	Red	Red	Red	Blue	Blue	Blue	Blue
LAB	3	Yoga and Fitness (P)	Yellow	Yellow			Yellow		Red	Red	Red	Red	Yellow
QP	5	Sewing Machine Operator	Yellow	Red	Yellow	Red	Yellow	Yellow	Red	Yellow	Yellow		
LAB	4	Portfolio – Basic Seams and Apparel Manufacturing Techniques (P)	Yellow	Red	Blue	Blue	Red	Red	Blue	Blue	Yellow	Yellow	Yellow
LEC	5	Tamil – II/ Hindi - II		Yellow	Yellow	Red	Blue	Blue	Red	Blue	Red	Yellow	Blue
LAB	5	Functional English (P) - II	Blue	Red	Red	Red	Red	Red	Red	Red	Red	Blue	Red
LAB	3	Industrial Pattern Making (P)	Yellow	Red	Red	Red	Red	Red	Red	Blue			Red
LEC	5	Fashion Designing	Yellow	Red	Red	Red	Red	Blue	Red	Blue	Yellow		Blue
LEC	5	Environmental Studies		Yellow	Yellow							Red	
QP	5	Production Supervisor	Yellow	Red	Blue	Red	Red	Yellow	Yellow	Red	Blue		
LAB	4	Portfolio – Training on Production and Quality	Red	Red	Red	Red	Red	Red	Red	Red	Red	Blue	Blue
LEC	5	Chemical Processing of Textiles	Red		Red	Red	Blue	Red	Red	Red		Red	Blue
LAB	4	Chemical Processing of Textiles (P)	Red	Yellow	Red	Red	Red	Red	Red	Blue		Red	Blue
LEC	5	Industrial Garment Machineries		Red	Yellow	Blue	Blue	Blue					



## B.VOC PROGRAMME CURRICULUM FRAMEWORK

<b>CERTIFICATE: TEXTILE BASICS &amp; INDUSTRIAL SEWING TECHNIQUES</b>							<b>DURATION: 06 Months</b>		
<b>SEMESTER I</b>									
Part	Subject code	Title of the Paper	HRS			Credit	Marks		
			L	T	P		CIA	EA	TOTAL
<b>General Education Component</b>									
<b>I</b>	22UPTAD2L01	Language - I Tamil - I	3	-	-	3	25	75	100
	22UPTAD2H01	Language - III Hindi - I							
<b>II</b>	22UPTAD2F01	Language – II Functional English Practical - I	1	1	2	3	40	60	100
<b>III</b>	22UPTAD2C01	Core – I Basics of Textiles	2	1	-	3	25	75	100
	22UPTAD2A01	Allied – I Fibre to Fabric practical	-	1	2	2	40	60	100
<b>VI</b>	22UPTAD2V01	Value Education – I Yoga and Fitness Practical	-	1	-	1	40	60	100
<b>Skill Component</b>									
<b>V</b>	22UPTAD2S01	QP – Sewing Machine Operator Level – 4 ( <b>Ref.ID: AMH/Q0301</b> )	2	2	6	7	*	100	100
<b>VI</b>	22UPTAD2P01	Portfolio Assessment – Basic Seams and Apparel Manufacturing Techniques	-	1	2	2	40	60	100
<b>VII</b>	22UPTAD2M01	Mini Project and Viva Voce	-	1	2	2	40	60	100
<b>VIII</b>	22UPTAD2I01	# Internship Assessment Sewing Machine Operator	21 Hours/Week			7	20	30	50
<b>Total</b>			<b>30</b>			<b>30</b>			<b>850</b>

<p>Note</p> <p>* Assessment by Apparel Made ups &amp; Home Furnishing Sector Skill Council, Assessment will be conducted in the beginning of the upcoming semester.</p> <p># Sewing Machine Operator Training at appropriate Industry for one month.</p> <p># After completing the Internship, Internship Assessment will be conducted in the beginning of the upcoming semester</p>
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<b>DIPLOMA: APPAREL PRODUCTION</b>						<b>DURATION: 01 YEAR</b>			
<b>SEMESTER II</b>									
<b>Part</b>	<b>Subject code</b>	<b>Title of the Paper</b>	<b>HRS</b>			<b>Credit</b>	<b>Marks</b>		
			<b>L</b>	<b>T</b>	<b>P</b>		<b>CIA</b>	<b>EA</b>	<b>TOTAL</b>
<b>General Education Component</b>									
<b>I</b>	22UPTAD2L02	Language - I Tamil - II	3	-	-	3	25	75	100
	22UPTAD2H02	Language - III Hindi - II							
<b>II</b>	22UPTAD2F02	Language – II Functional English Practical - II	1	1	2	3	40	60	100
<b>III</b>	22UPTAD2C02	Core – II Industrial Pattern Making Practical	-	1	2	2	40	60	100
	22UPTAD2A02	Allied – II Fashion Designing	1	1	-	2	25	75	100
<b>IV</b>	22UPTAD2V02	Value Education – II – Environmental Studies	1	1	-	2	25	75	100
<b>Skill Component</b>									
<b>V</b>	22UPTAD2S02	QP – Production Supervisor – Sewing Level – 5 (Ref.ID: AMH/Q2101)	2	2	6	7	*	100	100
<b>VI</b>	22UPTAD2P02	Portfolio- Training on production and Quality	-	1	2	2	40	60	100
<b>VII</b>	22UPTAD2M02	Mini Project and Viva Voce	-	1	2	2	40	60	100
<b>VIII</b>	22UPTAD2I02	# Internship Assessment Production Supervisor	21 Hours/Week			7	20	30	50
		<b>Total</b>	<b>30</b>			<b>30</b>			<b>850</b>

**Note**

\* Assessment by Apparel Made ups & Home Furnishing Sector Skill Council, Assessment will be conducted in the beginning of the upcoming semester.

# Production Supervisor Training at appropriate Industry for one month.

# After completing the Internship, Internship Assessment will be conducted in the beginning of the upcoming semester

<b>ADVANCED DIPLOMA: INDUSTRIAL ENGINEERING</b>							<b>DURATION: 02 Years</b>		
<b>SEMESTER III</b>									
<b>Part</b>	<b>Subject code</b>	<b>Title of the Paper</b>	<b>HRS</b>			<b>Credit</b>	<b>Marks</b>		
			<b>L</b>	<b>T</b>	<b>P</b>		<b>CIA</b>	<b>EA</b>	<b>TOTAL</b>
<b>General Education Component</b>									
<b>III</b>	22UPTAD2C03	Core - III Chemical Processing of Textiles	2	1	-	3	25	75	100
	22UPTAD2C04	Core - IV Chemical Processing of Textiles Practical	-	1	2	2	40	60	100
	22UPTAD2C05	Core - V Industrial Garment Machineries and Equipments	3	-	-	3	25	75	100
	22UPTAD2A03	Allied – III Fashion Illustration Practical	-	1	2	2	40	60	100
	22UPTAD2N01	Non Major Elective -I Computerized Report Making	-	1	2	2	40	60	100
<b>Skill Component</b>									
<b>V</b>	22UPTAD2S03	QP - Industrial Engineer (IE) Executive Level – 6 (Ref.ID: AMH/Q2001)	3	2	4	7	-	-	-
<b>VI</b>	22UPTAD2P03	Portfolio- Basics Industrial Engineer	-	1	2	2	40	60	100
<b>VII</b>	22UPTAD2M03	Mini Project and Viva Voce	-	1	2	2	40	60	100
<b>VIII</b>	22UPTAD2I03	# Internship Assessment Industrial Engineer	21 Hours/Week			7	20	30	50
		<b>Total</b>	<b>30</b>			<b>30</b>			<b>750</b>

**Note**

# Industrial Engineer Training at appropriate Industry for one month.  
# After completing the Internship, Internship Assessment will be conducted in the beginning of the upcoming semester

<b>SEMESTER IV</b>									
<b>Part</b>	<b>Subject code</b>	<b>Title of the Paper</b>	<b>HRS</b>			<b>Credit</b>	<b>Marks</b>		
			<b>L</b>	<b>T</b>	<b>P</b>		<b>CIA</b>	<b>EA</b>	<b>TOTAL</b>
<b>General Education Component</b>									
<b>III</b>	22UPTAD2C06	Core - VI Textile and Apparel Quality Control	2	1	-	3	25	75	100
	22UPTAD2C07	Core - VII Garment Construction Practical – II (Kid’s Wear )	-	1	2	2	40	60	100
	22UPTAD2C08	Core – VIII Basic Draping Practical	-	-	2	1	40	60	100
	22UPTAD2C09	Core - X I Heritage of Indian Textiles	2	-	-	2	25	75	100
	22UPTAD2A04	Allied – IV Digital Design Studies Practical	-	1	2	2	40	60	100
	22UPTAD2N02	Non-Major Elective – II Principle of Management	2	-	-	2	25	75	100
<b>Skill Component</b>									
<b>V</b>	22UPTAD2S03	QP - Industrial Engineer (IE) Executive Level – 6 (Ref.ID: AMH/Q2001)	3	2	4	7	*	100	100
<b>VI</b>	22UPTAD2P04	Portfolio Advanced Industrial Engineer	-	1	2	2	40	60	100
<b>VII</b>	22UPTAD2M04	Mini Project and Viva Voce	-	1	2	2	40	60	100
<b>VIII</b>	22UPTAD2I04	Internship Assessment* - Industrial Engineer	21 Hours/Week			7	20	30	50
		<b>Total</b>	<b>30</b>			<b>30</b>			<b>950</b>

<b>Note</b>
* Assessment by Apparel Made ups & Home Furnishing Sector Skill Council, Assessment will be conducted in the beginning of the upcoming semester.
# Industrial Engineer Training at appropriate Industry for one month.
# After completing the Internship, Internship Assessment will be conducted in the beginning of the upcoming semester

<b>B.VOC DEGREE: TEXTILES AND APPAREL DESIGN</b>							<b>DURATION: 03 YEARS</b>			
<b>SEMESTER V</b>										
<b>Part</b>	<b>Subject code</b>	<b>Title of the Paper</b>	<b>HRS</b>			<b>Credit</b>	<b>Marks</b>			
			<b>L</b>	<b>T</b>	<b>P</b>		<b>CIA</b>	<b>EA</b>	<b>TOTAL</b>	
<b>General Education Component</b>										
<b>III</b>	22UPTAD2C10	Core– X Industrial Garment Costing	2	-	-	2	25	75	100	
	22UPTAD2C11	Core – XI Lean Management	2	-	-	2	25	75	100	
	22UPTAD2C12	Core – XII Hand and Machine Embroidery Practical	-	1	2	2	40	60	100	
	22UPTAD2C13	Core – XIII Fabric Structure Analysis Practical	-	1	2	2	40	60	100	
	22UPTAD2C14	Core – XIV Graphic Design Practical	-	1	2	2	40	60	100	
	<b>Discipline Related Elective – I (Select anyone)</b>									
	22UPTAD2E01	Boutique Designer – I (Women’s Clothing )	-	2	-	2	40	60	100	
	22UPTAD2E02	Boutique Designer – I (Men’s Clothing)	-	2	-	2	40	60	100	
	22UPTAD2E03	Entrepreneurship Development - I	2	-	-	2	25	75	100	
	22UPTAD2E04	Merchandising and Marketing - I	2	-	-	2	25	75	100	
<b>Skill Component</b>										
<b>V</b>	22UPTAD2S04	QP - Sourcing Manager Level – 7 (Ref.ID: AMH/Q0920)	3	2	4	7	-	-	-	
<b>VI</b>	22UPTAD2P05	Portfolio Sourcing Techniques – I	-	1	2	2	40	60	100	
<b>VII</b>	22UPTAD2M05	Mini Project and Viva Voce	-	1	2	2	40	60	100	
<b>VIII</b>	22UPTAD2I05	# Internship Assessment Sourcing Manager	21 Hours/Week			7	20	30	50	
		<b>Total</b>	<b>30</b>			<b>30</b>			<b>850</b>	

<p>Note</p> <p># Sourcing Manager Training at appropriate Industry for one month.</p> <p># After completing the Internship, Internship Assessment will be conducted in the beginning of the upcoming semester</p>
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<b>SEMESTER VI</b>										
<b>Part</b>	<b>Subject code</b>	<b>Title of the Paper</b>	<b>HRS</b>			<b>Credit</b>	<b>Marks</b>			
			<b>L</b>	<b>T</b>	<b>P</b>		<b>CIA</b>	<b>EA</b>	<b>TOTAL</b>	
<b>General Education Component</b>										
<b>III</b>	22UPTAD2C15	Core – XV Sustainable Apparel Production	1	-	2	2	25	75	100	
	22UPTAD2C16	Core – XVI Design Thinking for Innovation	2	-	-	2	25	75	100	
	22UPTAD2C17	Core – XVII Fashion Portfolio Practical	-	1	2	2	40	60	100	
	22UPTAD2C18	Core – XVIII Six Sigma	2	-	-	2	25	75	100	
	22UPTAD2C19	Core – XIX Computerized Pattern Making Practical	-	1	2	2	40	60	100	
	<b>Discipline Related Elective – II (Select anyone)</b>									
	22UPTAD2E05	Boutique Designer – II (Women’s Clothing )	-	2	-	2	40	60	100	
	22UPTAD2E06	Boutique Designer – II (Men’s Clothing)	-	2	-	2	40	60	100	
	22UPTAD2E07	Entrepreneurship Development - II	2	-	-	2	25	75	100	
22UPTAD2E08	Merchandising and Marketing - II	2	-	-	2	25	75	100		
<b>Skill Component</b>										
<b>V</b>	22UPTAD2S04	QP - Sourcing Manager Level – 7 (Ref.ID: AMH/Q0920)	3	2	4	7	*	100	100	
<b>VI</b>	22UPTAD2P06	Portfolio Sourcing Techniques - II	-	1	2	2	40	60	100	
<b>VII</b>	22UPTAD2M06	Mini Project and Viva Voce	-	1	2	2	40	60	100	
<b>VIII</b>	22UPTAD2I05	# Internship Assessment Sourcing Manager	21 Hours/Week			7	20	30	50	
		<b>Total</b>	<b>30</b>			<b>30</b>			<b>950</b>	

<b>Note</b>
* Assessment by Apparel Made ups & Home Furnishing Sector Skill Council, Assessment will be conducted in the beginning of the upcoming semester.
# Sourcing Manager Training at appropriate Industry for one month.
# After completing the Internship, Internship Assessment will be conducted.

Note :- L- Lecture, T-Tutorial, P- Practical, C- Credit, IA – Internal Assessment, EA – External Assessment

**முதல் பருவம்**  
**மொழிப்பாடம் I**  
**தமிழ் I**

**பாடக் குறியீட்டெண்:** 22UPTAD2L01

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 1:1:2

**Course Duration :** 60 Hours

**Credit:** 03

**Course Description:**

இப்பாடநெறி மாணவர்களுக்கு தமிழர் ஆடை பற்றிய நூல் இன்மையை நீக்குதற்கும், தமிழர் ஆடையைப் பற்றிய அறிவைப் பெறுதற்கும், அதன் வழிப் புலனாகும் தமிழரின் வாழ்வியற் கூறுகளை அறிதற்கும் உதவுகிறது.

**Course Outcomes (COs)**

இப்பாட நெறி முடிவுறும் போது மாணவர்கள்

S. No	Outcomes	Domains of Learning
CO1	தமிழர் நாகரீகம், பண்பாடு, நில அடிப்படையிலான தொழில்கள் சமூக அமைப்பு மற்றும் குடும்பவாழ்வுக் குறித்து வகைப்படுத்துவர்	<b>Cognitive</b>
CO2	ஆடைகளின் தோற்றம் மற்றும் சொற்களை வகையறிந்து வேறுப்படுத்துவர்	
CO3	சங்க இலக்கியம், காப்பியங்கள் மற்றும் பக்தி இலக்கியங்களில் ஆடைப் பற்றிய பதிவுகளைக் கண்டறிந்து கொள்வார்	
CO4	பொது ஆடைகள் மற்றும் தெய்வங்களுக்கு உடுத்தும் ஆடைகள் குறித்து தமிழ் இலக்கியங்களில் இடம் பெற்ற பதிவுகளை தெளிவாக அடையாளம் காண்பர்	
CO5	காலம், சூழல், வழிபாடு போன்ற நிலையில் தமிழ் இலக்கியங்களில் ஆடையினைக் கையாளும் முறைகளை தீர்வு காணும் நிலையில் மதிப்பிடுவர்	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1				H	L	H	H	M	H	L	
CO2				H	L	H	H	M	H	L	
CO3			L	H	H		H	L	H	L	M
CO4				H			H		M	L	M
CO5		L	L	H	M	M	H	L	H		M

Unit	Unit Title	Learning Chapters
I	தமிழர் நாகரீகம், பண்பாடு	தமிழ் மொழி - தமிழ் மக்கள் - நாகரிகமும் பண்பாடும் - தொழிற்பிரிவினரும் (தச்சுத்தொழில், கொல்லுத்தொழில், மட்பாண்டத் தொழில், நெய்தற் தொழில்) - தமிழரின் திருமணமுறை (மரபு வழி மணம், சேவைமணம், போர் நிகழ்த்திமணம், துணங்கையாடிமணம், பரிசம் கொடுத்தமணம், ஏறு தழுவிமணம், மடலேறுமணம்)- குடும்பவாழ்வு.
II	ஆடையின் தோற்றம், வகைகள்	ஆடையின் தோற்றம் - ஆடை பற்றிய விளக்கம் - ஆடைகளின் வகைகள் - ஆடை பற்றிய சொற்கள் (உடை- ஆடை- தழை - நாருடை - துகில் - கலிங்கம் - அறுவை - சிதார் - தாளை - காழகம் - மடி - பட்டு - பூங்கரை நீலம் - தூசு - புட்டகம் - கம்பல் - நூல் - வாலிது - கச்சை - மெய்ப்பை - உத்தரீயம் - போர்வை - கவசம் - அர்த்தம் - ஈரங்கட்டு - கோடி - கூறை - புடைவை - வட்டுடை - வங்கச்சாதர் - வட்டம் -

		கோசிகம் - காம்பு - நேத்திரம் - நீவி - கலை (இரட்டு - பீதகம் - கோபம் - பரியட்டக்காசு - தேவாங்கு) ஆடை பற்றிய ஆய்வு - ஆடையை தேர்ந்தெடுக்கும் கலை.
III	ஆடை பற்றிய ஆய்வு	கலைக்களஞ்சியம், அகராதிகளில் ஆடையை குறிக்கும் சொற்கள் - சங்க இலக்கியத்தில் ஆடை (நற்றிணை, ஐங்குறுநூறு, பரிபாடல், கலித்தொகை, புறநானூறு) - காப்பியங்களில் ஆடை (சிலப்பதிகாரம், மணிமேகலை, சீவகசிந்தாமணி, நீலகேசி, சூளாமணி) - பக்தி இலக்கியத்தில் ஆடை.
IV	பொது ஆடைகள் மற்றும் நம்பிக்கைகள்	குழந்தைகள் - ஆடவர் (அரசர், போர் வீரர்கள், காவலர்கள், முனிவர், துறவியர், பொது மக்கள், புலவர்) - பெண்டிர் (அரசியர், துறவில் மகளிர்) - ஆடையும் அணியும் - பொது ஆடைகள் - ஆடை பற்றிய பழமொழிகள் தெய்வங்களுக்கு உடுத்தும் ஆடைகள் (சிவபெருமான், திருமால், முருகன், விநாயகன், உமை).
V	ஆடையினைக் கையாளும் முறைகள்	காலமும் ஆடையும் (குளிர் காலம், கோடைக் காலம், சிறு பொழுதுக்கேற்ப உடை) - ஆடையும் சடங்குச் சூழலும் (பிறப்பு, மணம், மரணம்) - உறவினர் ஆடை - தகுதியும் ஆடையும் (செல்வம், பதவி) - கைம்பெண்டிர் ஆடை - துறவிகள் (இந்து மதம், புத்த மதம், சமண மதம்) - வழிபாடும் ஆடையும் - ஆடலும் ஆடையும் - நிலமும் ஆடையும் - ஆடையினைக் கையாளும் முறைகள் (விருந்தோம்பல், குறிப்புக் காட்டல், சூதும் ஆடையும்)

#### பார்வை நூல்கள்

1. பகவதி.கு, தமிழர் ஆடைகள், உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை, 1980.
2. தட்சணாமூர்த்தி.அ, தமிழர் நாகரிகமும் பண்பாடும், யாழ் வெளியீடு, சென்னை, 2005.
3. வித்தியானந்தன்.சு, தமிழர் சால்பு, பாரி புத்தகப் பண்ணை, 1971.

**SEMESTER – I**  
**LANGUAGE-II**  
**FUNCTIONAL ENGLISH PRACTICAL – I**

**Course Code:** 22UPTAD2F01

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 1:1:2

**Course Duration :** 60 Hours

**Credit:** 03

**Course Description:**

The course gives a practical knowledge on using English in their corporate life. It helps to understand basic language and vocabulary skills. It also helps to pen down their present ideas and thoughts in an impressive manner. It understands a situation and leads it with critical thinking.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Grasp the actual meaning or context by listening.	<b>Psychomotor</b>
CO2	Read and comprehend the given text with proficiency	
CO3	Communicate effectively and fluently by overcoming the hurdles.	
CO4	Write given topics effortlessly	
CO5	Use vocabulary efficiently.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1		H		H	L	H	M		H	L	M
CO2	M	M	L	H	M	L	H		L	L	H
CO3			L	H	H		H	L	H	L	M
CO4				H			H		M	L	M
CO5		L	L	H	M	M	H	L	H		M

Unit	Unit Title	Learning Chapters
I	Listening	Listening to sounds, Audio with subtitles, Listening & paraphrasing, Listening to success stories of icons in fashion field, Request clarification & enquiry.
II	Reading	Passage / Newspaper Reading/Textile Magazine Reading, Read success stories of different Apparel Brands, Story reading / fable reading, Reading and Interpretation, Reading comprehension
III	Speaking	Tongue twisters, Group Debate, Image interpretation / Describe a picture, Roleplay, Pronouncing Apparel Industry Brand names
IV	Writing	Note making, Précis writing, Paragraph writing, Hints Development
V	Vocabulary	Synonyms and antonyms, Homophones, homonyms, prefix and suffix, Idioms and Phrases, Spelling rules and common error.

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Sasikumar V., et.al., Oral Communication Skills, Foundations Books, Cambridge University Press, New Delhi, 2009.

### **Highly Recommended, not Compulsory**

2. Michael Strumpt. The Complete Grammar. Goodwill Publishing House. Print.
3. A.J.Thomson & F.V.Martinet. A Practical English Grammar Exercise. OUP. Print.Murcia, Marianne Celce,
4. Donna M. Brinton, Janet M. Goodwin, Teaching Pronunciation. Cambridge University Press: Cambridge, 2004.

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

5. Wren and Martin. High school English grammar and composition, Gupta Publications, New Delhi
6. Alex. K. 2011. Soft Skills: know yourself and know the world. S.Chand & Co: New Delhi

## SEMESTER – I

### CORE- I

#### BASICS OF TEXTILES

**Course Code:** 22UPTAD2C01

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 2:1:0

**Course Duration** : 45 Hours

**Credit:** 03

#### Course Description:

This course is designed to provide a detailed overview of textile fibres, their processing and characteristics, spinning into yarns, forming various types of fabrics by weaving and other methods of fabric creation, fabric treatment with multiple types of process.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Interpret the different kinds of textile fibers production, properties, testing and their applications.	<b>Cognitive</b>
CO2	Classify the process of yarn production, yarn numbering system, yarn quality parameters and the applications of fancy yarns.	
CO3	Distinguish the types of looms with its working principles and examine the woven fabric defects.	
CO4	Relate the knitting terms, their production methods, classification along with the fabric defect and remedies	
CO5	Infer about the various types of non-woven fabric production and its application in various fields.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	H	H	M	L	H	H
CO2	H	H	H	H	H	H	H	M	L	H	H
CO3	H	H	H	H	H	H	H	H	L	H	H
CO4	H	H	H	H	H	H	H	H	L	H	H
CO5	H	M	H	H	H	H	H	M	L	H	M

Unit	Unit Title	Learning Chapters
I	Textile Fibers	Definition, properties of textile fiber, classification of textile fiber, filament and staple fibers; cultivation, production and properties of cotton, flax, silk, wool, viscose, polyester and nylon fibers; identification of fibers – physical and chemical tests - application of various textile fibers.
II	Spinning	Introduction, raw material, ginning, Bale opening, Blow room process, carding, combing, drawing, roving, ring spinning, cone winding. Yarn numbering systems, yarn quality parameters, types of yarns and their uses.

III	Weaving	Weaving: Preparatory process - winding, warping sizing principles and Material passage. Role of important functional parts. Looms: classification, primary, secondary and auxiliary motions; passage of material in a plain power loom. Introduction to projectile, rapier and air jet weaving machines. Woven fabric defects causes and remedies.
IV	Knitting	Comparison of weaving and knitting. Terms and Definitions used in knitting. Types of knitting needles, gauge, sinker and cam settings for various knit fabrics. Basic weft and warp knitted structures. Comparison between warp knits and weftknits. Structure and properties of Plain, Rib, Purl, Interlock. Definition – overlap, under lap, closed lap and open lap in warp knitting. Knit Fabrics defects causes and remedies.
V	Non-woven	Non-Woven – Definition, fibres used in non-woven process. Classification of non-woven. Web formation – Types; Bonding – Types; Spun bond, Melt Blown – Applications and End-uses in various fields.

## READING LISTS AND RESOURCES

### Compulsory

1. Textiles by Kadolph, 2009
2. Textiles Basics by Sara J. Kadolph , 2012
3. Textiles by Sara J. Kadolph, Sara B. Marcketti , 2017
4. Nonwoven Fabrics Raw Materials, Manufacture, Applications, Characteristics, Testing Processes by HilmarFuchs, Walter Kittelmann, 2006
5. Weaving and Knitting Technology books.google.co.in books Naik. S., Shailaja D. Naik, 2013
6. Nonwoven Fabrics Raw Materials, Manufacture, Applications, Characteristics, Testing Processes by HilmarFuchs, Walter Kittelmann, 2006
7. Nonwovens Process, Structure, Properties and Application, 2017

### Highly Recommended, not Compulsory

8. Handbook of Textile Fibres Natural Fibres by J Gordon Cook, 1984
9. Industrial Applications of Natural Fibres Structure, Properties and Technical Applications, 2010
10. Natural Fiber Textile Composite Engineering by Magdi El Messiry, 2017
11. Handbook of Natural Fibres Volume 1: Types, Properties and Factors Affecting Breeding and Cultivation, 2020
12. The Complete Technology Book on Textile Spinning, Weaving, Finishing and Printing By Niir Board, 2009
13. Secrets of Spinning, Weaving, and Knitting in the Peruvian Highlands by Nilda Callanaupa Alvarez, 2017

### Good for Students who have Future Interests

14. Textiles Basics By Sara J. Kadolph , 2013
15. Handbook of Natural Fibres Volume 1: Types, Properties and Factors Affecting Breeding and Cultivation, 2012

**SEMESTER – I****ALLIED – I****FIBRE TO FABRIC PRACTICAL****Course Code:** 22UPTAD2A01**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:1:2**Course Duration** : 45 Hours**Credit:** 03**Course Description:**

This course allows students to identify different textile fibres, yarn parameters, fabric structures, create design, draft and peg plan for various woven and knitted fabrics and develop a set of textile design skills by exploring their applications.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Identify the different textile fibres using diverse methods.	<b>Psychomotor</b>
CO2	Estimate the count and twist of the yarn samples.	
CO3	Calculate Ends Per Inch & Picks per inch and determine the woven fabric samples' weight, strength, and stiffness.	
CO4	Recognize Course per inch & Wales per inch and calculate fabric weight of the knitted fabrics.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	M	H	H	H	H	H	M	L	L	H
CO2	H	H	H	M	M	M	H	M	M	M	M
CO3	H	H	H	M	M	M	H	M	M	M	M
CO4	H	M	H	H	M	M	H	M	M	M	M

Unit	Unit Title	Learning Chapters
I	Fiber identification	Identify the textile fibers using Microscopic, Burning, & Chemical method: Cotton, Silk, Jute, Rayon
II	Yarn Count & Twist identification	Determine the yarn count and Twist: Wrap reel, Weighing balance method - Beesley's Balance, Twist tester.
III	Woven fabric identification	Analyse the Woven fabric swatches and furnish the following details: Ends Per Inch (EPI) & Picks per inch (PPI), GSM, Stiffness
IV	Knitted fabric identification	Analyse the knit fabric swatches and furnish the following details: Course per inch (CPI) & Wales per inch (WPI), Loop Length, Grams per square meter (GSM), Defect Identification

**Laboratory Equipments:** Projection Microscope, Chemicals, Burning Test Kit, Pick Glass, Wrap Reel, Weighing Balance, Quadran Balance, Beesley Balance, Stiffness Tester, GSM Cutter, Scissors, Measuring Tools and Needle/Pins/Thread separator.

## READING LISTS AND RESOURCES

### Compulsory

1. Identification of Textile Fibers by M M Houck, Elsevier Science Woodhead publishing in textiles, 2009
2. Structure and Mechanics of Woven Fabrics by Jinlian Hu, 2004
2. Knitted Fabrics by John Chamberlain, James Henry Quilter, 1924
3. Corbmann B P , International students edition, Textiles – fibre to fabric, Mc Graw Hill book Co, Singapore, 1985
4. Watson's, Grosickli Z Newness, Butter worths, Advanced Textile Design London, 1989
5. Fabric Structure and Design by N. Gokarneshan, 2009
6. Woven Textile Structure Theory and Applications by B K Behera, P K Hari, 2010
7. Structural Textile Design Interlacing and Interlooping by Syed Talha Ali Hamdani, Khubab Shaker, 2017
8. Watson's Textile Design and Colour, Vol.1, Grosicki Z. J., Woodhead Publications, Cambridge England, 2004.
9. Principles of Fabric Formation by Prabir Kumar Banerjee, 2014
10. Fundamentals and Advances in Knitting Technology by Sadhan C. Ray, 2012

### Highly Recommended, not Compulsory

11. Woven Fabric Structure Design and Product Planning by J. Hayavadana, 2016
12. Woven Textiles Principles, Technologies and Applications, 2012
13. Woven Textile Design by Jan Shenton, 2014
14. Fundamentals and Advances in Knitting Technology by Sadhan C. Ray, 2012
15. Textiles Technology by Julie Messenger, Helen Wilson, 2003
16. Warp Knitted Fabrics Construction by Yordan Kyosev, 2019
17. Knitting: Colour, structure and design Alison Ellen Crowood, 21-Dec-2013

### Good for Students who have Future Interests

18. Woven Textiles Principles, Technologies and Applications, 2012
19. Handbook of Weaving by Sabit Adanur, 2019
20. Fabric structure and design by Gokarneshan, D.N. New Age International (P) Ltd, New Delhi (2009)
21. Knitting Fundamentals, Machines, Structures And Developments by N. Anbumani, 2007

## SEMESTER – I

### VALUE EDUCATION - I

#### YOGA AND FITNESS PRACTICAL

**Course Code:** 22UPTAD2V01

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P – 0:1:0**

**Course Duration :** 15 Hours

**Credit:** 01

#### Course Description:

This course allows students to improve their physical fitness and mental health. It leads to reduce their mental stress and improves the posture. This also helps the student to improve their inner strengths which focus in the present and make them happier as well as their self-esteem.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Demonstrate breathing exercises and different kriya techniques.	Psychomotor
CO2	Perform the Standing, Sitting, Prone and Supine postures of yoga	
CO3	Express dharana and meditation stages of astanga yogic techniques.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1		L		L	L		H	H	H	H	L
CO2	M	M	L		H	L	H	H	H	H	L
CO3							H	H	H	H	L

Unit	Unit Title	Learning Chapters
I	Breathing Exercises and Kriyas	Surya Namaskar, Breathing Exercises – Thanduvada Suthi, Nadi Suthi, Kapalabathi, Kriyas - OMM Chanting (AAA, UUUU, MMMM).
II	Different Postures of yoga	Standing Postures: Tadasana, Chakrasana, Thirikonasana, Nindra Pathasana and Ukattasana. Sitting Postures: Thandasana, Sughasana, Padmasana, Yoga Muthra, Mandookasana, Vajrasana and Maha Mudra. Prone Postures: Maharasana, Dhanurasana, Pujangasana and Salabasana. Supine Postures: Sethubanadasan, Sarvangasana, Pavanamuktasana, Halasana and Savasana
III	Astanga Stages of Yoga	Astanga Stages of Yoga - Yama, Niyama, Dharana, Prathiyagara, Dhiyana (Meditation) and Samathi.

#### READING LISTS AND RESOURCES

##### Compulsory

1. Ashtanga Yoga the Essential Step-by-step Guide to Dynamic Yoga by John cott, 2018
2. Yoga for the Three Stages of Life Developing Your Practice as an Art Form, a Physical Therapy, and a Guiding Philosophy by Srivatsa Ramaswami, 2001
3. Yoga Anatomy By Leslie Kaminoff, Amy Matthews, 2011

##### Highly Recommended, not Compulsory

4. The Power of Ashtanga Yoga Developing a Practice That Will Bring You Strength, Flexibility, and Inner Peace - Includes the Complete Primary Series by Kino MacGregor, 2013
5. Yoga Sutras of Patanjali by Maharishi Patanjali, 2018

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

6. Yoga The Top 100 Best Yoga Poses: Relieve Stress, Increase Flexibility, and Gain Strength by Susan Hollister, 2017

**SEMESTER - I**  
**QUALIFICATION PACK LEVEL – IV**  
**SKILL COMPONENT - V**  
**SEWING MACHINE OPERATOR (Ref.ID: AMH/Q0301)**

**Course Code:** 22UPTAD2S01

**Marks:** 100 Marks

**L:T:P – 2:2:6**

**Course Duration :** 150 Hours

**Credit:** 07

**Course Description:**

A Sewing Machine Operator, also called a Stitcher or Machinist‘ is an important job-role associated with Apparel sector. The primary responsibility of a machinist is to sew fabric to produce apparels.

**Course Outcomes:**

By the end of this Course, Students will be able to

S. No	Outcomes	Domains of Learning
CO1	Prepare garment components as per buyer’s tech pack with hands or using machines.	Psychomotor & Cognitive
CO2	Monitor the quality of the production while undertaking stitching related activities to ensure that the products meet buyer’s specifications.	
CO3	Maintain tools and machines as per norms	
CO4	Comply with health, safety and security requirements at the workplace and follow procedures to prevent, control and minimize risk to oneself and others.	
CO5	Adapt with legal and ethical requirements at the workplace.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	H	H				
CO2	H	H	H	H	H	H	H				
CO3		H		H	H		H				
CO4		H		H	H		H	M	M		
CO5		H		H	H		H	M	M		

Unit	Learning Chapters ( <a href="http://sscamb.com/approvedOPNo.php">http://sscamb.com/approvedOPNo.php</a> )
I	Reference ID:AMH/N0301 Carry out stitching activities using machine or by hand
II	Reference ID:AMH/N0302 Contribute to achieve product quality in stitching operations
III	Reference ID:AMH/N0102 Maintain work area, tools and machines
IV	Reference ID:AMH/N0103 Maintain health, safety and security at workplace
V	Reference ID:AMH/N0104 Comply with industry, regulatory & organizational requirements

**READING LISTS AND RESOURCES**

**Compulsory**

1. Qualification Pack – Occupational Standard For Apparel, Made up’s And Home Furnishing Sector
2. Qualification Pack - Sewing Machine Operator (AMH/Q0301)

**Highly Recommended, not Compulsory**

3. The Sewing Machine By Rebekah Dorn, 2008
4. Handbook for Fashion Designing: Best Drafting Techniquesbooks.google.co.in > books Ritu Jindal, 1998

**Good for Students who have Future Interests**

5. Apparel Manufacturing Technology By T. Karthik, P. Ganesan, D. Gopalakrishnan, 2017

## SEMESTER – I

### SKILL COMPONENT - VI

#### PORTFOLIO – BASIC SEAMS AND APPAREL MANUFACTURING TECHNIQUES

Course Code: 22UPTAD2P01

Marks: 100 Marks (Internal-40; External-60)

L:T:P – 0:1:2

Course Duration : 45 Hours

Credit: 02

#### Course Description:

This course will practically guide the students to sew basic seams and seam finishes. It also enables the students to professionally customize a range of styles in component parts in Apparel manufacturing.

#### Course Outcomes (Cos)

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

S. No	Outcomes	Domains of Learning
CO1	Integrate the basic hand sewing techniques to produce finished samples.	Psychomotor
CO2	Create samples by combining basic seams and seam Finishes	
CO3	Develop various component parts of the garments with help of Industrial sewing machineries.	
CO4	Combine different garment components and ensure its quality.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	L	H	M	M	H	H	M	H	L	L	
CO2	L	H	M	M	H	H	M	M	L	L	L
CO3	L	H	M	M	H	H	M	M	L	L	L
CO4		H	H	H	H	M	H	L	M	M	

Unit	Unit Title	Learning Chapters
I	Hand Sewing	Button hole, Different button sewing - 4hole, 2hole, Snap button, Hooks, Hemming, Patch work
II	Basic seams and seam Finishes	Basic Seams – Plain, Welt, Single Top Stitch, Double Top Stitch, Flat felt seam, Slot seam and piped seam, Basic seam finishes – Pinked finish, Edge stitch finish, Double edgestitch finish, Facing & Bound edge finish, Fullness – Dart, Tucks, Pleats and Gathers
III	Parts of a Garment andAssembling	Different Collars – Stand collar, Band collar and Shawl collar, Different pockets – Patch pocket, Welt pocket, Different Sleeve – Plain, Raglan, puff, sleeve cuff, Different yokes- Single and Double, Different Placket- Shirt front placket, Sleeve placket and Zipper Placket and Assembling
IV	Assembling a Garment	Assemble Component parts of Men’s shirt.

Laboratory equipment’s:

Hand Needles, Single Needle Lock Stitch Machine, Over Lock Machine – 3T, 5T

## READING LISTS AND RESOURCES

### Compulsory

1. Sewing Guide: Hand Sewing, Machine Sewing and Examples [books.google.co.in](https://books.google.co.in) › books James Oszust, 2020 Merchant & Mills Sewing Book Hand Sewing Techniques / Machine Know-How / Tools / Notions / Projects /
2. Patterns by Carolyn N.K. Denham , 2014
3. Handbook of Sewing Stitches An Illustrated Guide to Techniques and Materials by Lorna Knight, 2019
4. How to Sew with Over 80 Techniques and 20 Easy Projects by Mollie Makes, 2018
5. Guide to Basic Garment Assembly for the Fashion Industry by Jayne Smith, 2011

### Highly Recommended, not Compulsory

6. The Sewing Machine by Rebekah Dorn, 2008
7. Super Stitches Sewing a Complete Guide to Machine-sewing and Hand-stitching Techniques by Nicole Vasbinder , 2014
8. Handbook for Fashion Designing: Best Drafting Techniques [books.google.co.in](https://books.google.co.in) › books Ritu Jindal, 1998
9. Apparel Engineering and Needle Trades Handbook, 1960
10. Sewing Threads by J. O. Ukponmwan, K. N. Chatterjee, A. Mukhopadhyay, 2000
11. Handbook for Fashion Designing: Best Drafting Techniques [books.google.co.in](https://books.google.co.in) › books Ritu Jindal, 1998

### Good for Students who have Future Interests

12. Apparel Manufacturing Technology By T. Karthik, P. Ganesan, D. Gopalakrishnan, 2017
13. Sewing for Fashion Designers By Anette Fischer, 2015
14. Super Stitches Sewing A Complete Guide to Machine-sewing and Hand-stitching Techniques By Nicole Vasbinder, 2014
15. Industrial Engineering in Apparel Manufacturing By Dr. Prabir Jana, Dr. Manoj Tiwari, 2020
16. Couture Sewing Techniques By Claire B. Shaeffer , 2011

**SEMESTER – I**  
**SKILL COMPONENT - VII**  
**MINI PROJECT AND VIVA VOCE**  
**Innovative Product Creation**

**Course Code:** 22UPTAD2M01                      **Marks:** 100 Marks (Internal-40; External-60)  
**L:T:P** – 0:1:2                                      **Course Duration :** 45 Hours                                      **Credit:** 02

**Course Description:**

This course will guide the students to create innovative ideas. It also enables the students to professionally customize a product or sample using various kinds of machineries used in garment manufacturing industry.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Identify the problem to develop an innovative product	Cognitive & Psychomotor
CO2	Find a solution for the defined problem	
CO3	Explain the uniqueness of the product developed	
CO4	Discuss the value proposition of the developed product	
CO5	Identify the market potential for scalability	
CO6	Calculate the economic aspects for commercialization	
CO7	Develop product addressing the sustainable development goals (SDG) on environment	
CO8	Prepare an effective documentation with photographs and video URL.	

Unit	Unit Title	Learning Chapters
1.	Problem Identification	How to identify the right problem to develop innovative product development. Define the problem and its relevance to today's market/society/Industrial needs.
2.	Solution Proposed/Idea	Apply various tools and techniques to propose solution to develop innovative product idea.
3.	Uniqueness	Explain the uniqueness and distinctive features of the product How is the developed product idea different from the competitors, if any.
4.	Utility value/ Value proposition	Explain the key benefits of the innovation
5.	Scalability	Highlight the market potential (market size, segment and target) aspects of the solution or the product
6.	Economic sustainability	Emphasize the commercialization/business application aspects of the solution.
7.	Environment sustainability	Highlight environmental friendliness aspects and the related benefits of the innovation
8.	Documentation	Prepare a detailed report of (unit-1-7), with high quality photographs and develop a video of the innovative product.

**SEMESTER – II****மொழிப்பாடம் I****தமிழ் II****பாடக் குறியீட்டெண்:** 22UPTAD2L02**Marks:** 100 Marks (Internal-40; External-60)**L:T:P – 1:1:2****Course Duration :** 60 Hours**Credit:** 03**Course Description:**

இப்பாடநெறி மாணவர்களுக்கு தமிழர் ஆடை பற்றிய நூல் இன்மையை நீக்குதற்கும், இந்திய நாகரீகத்தின் அடிப்படையிலான ஆடை மற்றும் தமிழர் ஆடையைப் பற்றிய அறிவைப் பெறுதற்கும், ஆடை வணிகம் மற்றும் ஆடை தொடர்பான வேலை வாய்ப்புகளைப் பெறுவதற்கும் உதவுகிறது.

**Course Outcomes (COs)**

இப்பாட நெறி முடிவிலும் போது மாணவர்கள்

S. No	Outcomes	Domains of Learning
CO1	இந்திய நாகரீகத்தின் அடிப்படையிலான ஆடை வகையினை வகையறிந்து வேறுப்படுத்துவர்	<b>Cognitive</b>
CO2	உடையின் தோற்றம், செயற்பாடுகள் மற்றும் இந்திய ஆடைகள் குறித்து தெளிவாக அடையாளம் காண்பர்.	
CO3	காலம், சூழல், வழிபாடு, நம்பிக்கை போன்ற நிலையில் தமிழ் இலக்கியங்களில் ஆடையினைக் கையாளும் முறைகளை தீர்வு காணும் நிலையில் மதிப்பிடுவர். ஆடைத் தொழிலாளர் சமுதாய நிலை குறித்து தீர்வு காண்பர்	
CO4	தமிழ் நாட்டு ஆடைகளில் வேட்டிவகைகளும் நிலைகளும் குறித்தப் பதிவுகளை விளக்குவர். ஆடை வணிகம் மற்றும் ஆடைத் தொடர்பான வேலை வாய்ப்புகளைக் குறித்து திட்டமிடுவர்.	
CO5	தமிழகப் பழங்குடியினரின் ஆடைகள், பாரம்பரிய ஆபரணங்கள் கள ஆய்வு மூலம் பதிவுகளை அடையாளம் காண்பர்	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1				H	L	H	H	M	H	L	
CO2				H	L	H	H	M	H	L	
CO3			L	H	H		H	L	H	L	M
CO4				H			H		M	L	M
CO5		L	L	H	M	M	H	L	H		M

Unit	Unit Title	Learning Chapters
I	இந்திய நாகரீகத்தின் ஆடை வரலாறு	சிந்துவெளி நாகரீக ஆடை (கி.மு.3000) - வேதகால ஆடை (கி.மு.2500) - பௌத்தர் கால ஆடை (கி.மு.5 நூற்றாண்டு) - மௌரியர் கால ஆடை (கி.பி.300) - குப்தர், இராசபுத்திரர் கால ஆடை (கி.பி.320 முதல் 1300) - மொகலாயர் ஆடை (கி.பி. 12 -17 நூற்றாண்டு) - கேரளம் (பண்டையத் தமிழகம்).
II	இந்திய ஆடை வகைகள்	உடையின் தோற்றம் - செயற்பாடுகள் - இந்திய உடைகள் (அங்கார்க்கா, அனார்கலி ஆடை, குர்த்தா, குர்த்தி மேலாடை, கோவணம், சரைகி சல்வார், சல்வார், சல்வார் - கமீஸ், சாமா ஆடை, பஞ்சாபி காக்கரா,

		பஞ்சாபிக் குர்த்தாவும் தாம்பாவும், பருத்தி சேலை, பாட்டியாலா சல்வார், பாவாடை, புடவை, மஸ்ஸின் துணி, லுங்கி)
III	ஆடை பற்றிய ஆய்வு	ஆடை வகைகளின் தோற்றம் (பருத்தி, சணல், கம்பளி, பட்டு, சாயம் தோய்த்தல், ஆடை நெய்தல், கால வண்ணம்) - ஆடை பற்றிய நம்பிக்கை (வினை, கனவு, கற்பு, மந்திரம்) - தெய்வங்களுக்கு உடுத்தும் ஆடை (சிவபெருமான், திருமால், முருகன், விநாயகன், உமை) - ஆடைத்தொழில் (மூலப்பொருட்கள் சேகரித்தல், மூலப்பொருட்களைத் தயார்ப்படுத்தல், நூல் நூற்றல், பாவு, நெய்தல், மிளிர்ச்செய்தல், மணமூட்டல், தைத்தல் (தையற்கலை), வணிகம், வெளுத்தல்) ஆடைத் தொழிலாளர் சமுதாய நிலை (நூற்புத் தொழிலாளர், நெய்வோர், தூய்மை செய்வோர்) - தொழில்சார் உடைகள்
IV	வேட்டி	வேட்டி - வேட்டி உருவான விதம் - வேட்டியின் வகைகளும் அணியும் முறையும் - பிற மாநிலங்களில் வேட்டி - தமிழகத்தில் தற்போதுள்ள சூழலில் வேட்டியின் நிலை - ஆடை தொடர்பான தொழிற்சாலைகள் - ஆடைத்துறை தொடர்பான வேலை வாய்ப்புகள் - இன்றைய சூழலில் ஆடையின் பங்கு - உலகத்தமிழர் பேரமைப்பின் தமிழர் தேசிய உடைக்கான பரிந்துரை.
V	ஆடை ஆய்வு	ஆடைத் தொழிலில் பசுமை உற்பத்தி - தமிழகப் பழங்குடியினரின் ஆடையினை ஆவணப்படுத்துதல் (கள ஆய்வு) - பாரம்பரிய ஆபரணங்கள் - நடன உடைகள் - தமிழ்த் திரைத்துறையில் ஆடையின் பங்கு - ஆடை வடிவமைப்பின் ஆய்வுக்களம்.

### பார்வை நூல்கள்

1. பகவதி.கு, தமிழர் ஆடைகள், உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை, 1980.
2. தட்சணாமூர்த்தி.அ, தமிழர் நாகரிகமும் பண்பாடும், யாழ் வெளியீடு, சென்னை, 2005
3. மீராமுகைதீன. அ, இலக்கிய ஆய்வுகள், உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை, 1974.

**SEMESTER – II**  
**LANGUAGE – II**  
**FUNCTIONAL ENGLISH PRACTICAL – II**

**Course Code:** 22UPTAD2F02

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 1:1:2

**Course Duration :** 60 Hours

**Credit:** 03

**Course Description:**

The course gives a practical knowledge on using English in their corporate life. It helps to understand basic language and vocabulary skills. It exposes the students to the important nuances of business communication and to initiate them into the realm of professional communication.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Communication and maintain proper rapport in their professional context.	Psychomotor
CO2	Develop a report and interpret information into text.	
CO3	Express their thoughts with interviewer or assessor during an interaction.	
CO4	Articulate frequently without the fear of grammar.	
CO5	Combine creativity and language skills in form of advertisement writing and slogan writing. Empathize with peers and to radiate confidence in all aspects.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M	H	H	H	H		H	H	H	M	
CO2	H	H	H	H	H	M	H	H	H	L	H
CO3	H	H	L	H	H	H	H	H	H	L	H
CO4	M		H	H		H	H	L			H
CO5		H	H	H	H	H	H	H	H	H	H

Unit	Unit Title	Learning Chapters
I	Correspondence and its types	a. Personal letters, b. Business correspondence, c. Official correspondence and d. Report writing.
II	Professional writing	a. Article writing, b. Note making, c. Expansion of an idea, d. Resume writing and e. E-mail drafting.

III	Presentation skills	<ul style="list-style-type: none"> <li>a. Self-introduction,</li> <li>b. Extempore speech,</li> <li>c. Interpretation of images,</li> <li>d. Mock interview,</li> <li>e. Presentation on a topic using power point slides</li> </ul>
IV	Grammar	<ul style="list-style-type: none"> <li>a. Prepositions,</li> <li>b. Articles,</li> <li>c. Punctuations,</li> <li>d. Adjectives,</li> <li>e. Noun.</li> </ul>
V	Expression and attitude	<ul style="list-style-type: none"> <li>a. Creative expression –advertisement - writing captions and slogans for a startup.</li> <li>b. Nonverbal – personal appearance - gestures – eye contact – body language.</li> <li>c. Team building teamwork – developing positive attitude.</li> <li>d. Career plans – jobs – description of dream jobs and company.</li> </ul>

### READING LISTS AND RESOURCES

#### Compulsory

1. Current English Grammar and Usage with Composition by Sinha R.P., Oxford University Press, New Delhi, 2018.

#### Highly Recommended, not Compulsory

2. An Advanced Course in communication and Media Awareness by Prakash C.L., Cambridge University Press, New Delhi, 2007.
3. A Practical English Grammar Exercise by A.J.Thomson&F.V.Martinet. OUP. Print.
4. Teaching Pronunciation by Murcia, Marianne Celce, Donna M. Brinton, Janet M. Goodwin, Cambridge University Press: Cambridge 2004.

#### Good for Students who have Future Interests

5. High school English grammar and composition by Wren and Martin, Gupta Publications, New Delhi 1995.
6. Developing Communication Skills by Mohan, Krishna & Meera Banerji, Macmillan, India, 2009.

## SEMESTER – II

### CORE PRACTICAL – II

#### INDUSTRIAL PATTERN MAKING PRACTICAL

**Course Code:** 22UPTAD2C02

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration :** 45 Hours

**Credit:** 02

#### Course Description:

This course will practically guide the students to make the pattern blocks in industrial standards. Also, this course will lead to customize the basic pattern into different size and styles.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Execute the basic bodice blocks for Men, Women and Children.	Psychomotor
CO2	Develop various styles of garment patterns from basic pattern blocks.	
CO3	Create different pattern sizes from the actual pattern size.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	L	H	H	H	H	H	H	M			H
CO2	L	H	H	H	H	H	H	M			H
CO3	L	H	H	H	H	H	H	M			H

Unit	Unit Title	Learning Chapters
I	Basic Bodice	Knowledge on pattern making, tools, and pattern making. Drafting of Basics Bodices For Men – Front, Back, Sleeve and Trousers Women – Front, Back, Sleeve and Skirt Children – Front, Back, Sleeve, Trousers and Skirt
II	Basic bodice to garment styles	Men's - Shirt, T-shirt and Trousers Women's - Kameez, Skirt, and leggings Children's - A line frock, Yoke frock and Knickers
III	Pattern Grading	Men's - Shirt, T-shirt and Trousers Women's - Kameez, Skirt, and leggings Children's - A line frock, Yoke frock and Knickers
Laboratory equipments and tools: Measuring tools, Curves, Rulers, Marking tools.		

## READING LISTS AND RESOURCES

### **Compulsory**

1. Patternmaking Comprehensive Reference for Fashion Design By Sylvia Rosen, 2004
2. Techniques Of Drafting And Pattern Making Garments For Kids And Adolescents By Padmavati B, 2009.
3. Pattern Cutting and Making Up The Professional Approach Volume 1 By Martin Shoben, Janet Ward , 1987.
4. Pattern Cutting and Making Up Volume 1 By Martin Shoben, Janet Ward, 2015

### **Highly Recommended, not Compulsory**

5. Apparel Manufacturing Technology By T. Karthik, P. Ganesan, D. Gopalakrishnan , 2016
6. Pattern-drafting for Fashion Seam Assembly & Finishing By Teresa Gilewska , 2013
7. Practical Pattern Making By Lucia Mors, Lucia Mors de Castro, Isabel Sánchez Hernández , 2015

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

8. Factors Affecting Trade Patterns of Selected Industries, First Annual Report, Inv. 332-477

**SEMESTER – II**  
**ALLIED PAPER – II**  
**FASHION DESIGNING**

**Course Code:** 22UPTAD2A02

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 1:1:0

**Course Duration** : 30 Hours

**Credit:** 02

**Course Description:**

This course confers about the fashion terms related to fashion industry. Further it enables the students to learn about designs and its elements, principles and applications of colour harmony. It also deals with unusual figures and its garment designing. It also helps to learn about designing garments for unique occasions.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Infer the concept of fashion and the terms related to fashion and apparel industry	Cognitive
CO2	Summarize about elements of design and practice the application of structural and decorative designs.	
CO3	Utilize the principles of design and its application in a dress.	
CO4	Make use of the colour concepts in designing a garment.	
CO5	Predict the factors and figure irregularities that influencing design application in a garment.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	L	H	H	L	M	M	H	L	L	L	M
CO2	L	H	H	H	H	M	H	M	L		M
CO3	L	H	H	H	H	L	H	M	M	L	M
CO4	L	H	H	H	M	L	H	H	L		H
CO5	M	H	H	H	H	L	H	L	L		M

Unit	Unit Title	Learning Chapters
I	Garment/Fashion Industry terms	Design, Style, Fashion, Trend, Fad, Classic, Collection, Fashion cycle – recurring and interrupted, Forecasting, High-fashion, Toile, Mannequin, size, fit, Portfolio, Theme, Season, Fashion show, Knock off, Counterfeit, Chic, Custom-made/Be-spoke, Pret-a-porter, Avant-garde, Haute-couture, Fashion director, Fashion editor, Costume designer, Fashion Designer- role in styling and production of costumes.

II	Elements of design	Design – definition and types – structural and decorative design. Requirements of a good structural and decorative design. Elements of design: Line – horizontal, vertical, diagonal, curves, wavy, circular, semi-circular and zig-zag. Shape – 2D, 3D form, Colour, size – tall and short, and Texture – hand feel: rough and smooth, eye feel: light and dark. Applications of structural and decorative designs using elements of design.
III	Principles of design	Principles of design: Balance - symmetric/formal and asymmetric/informal, Rhythm – rhythm through repetition, rhythm through radiation and rhythm through gradation, Emphasis - convergence, isolation/separation, exception, subordination/ contrast, Harmony and Proportion - altered, hierarchical, out of proportion and standard proportion. Application of principles of design in a dress.
IV	Colour and its application	Colour - definition, colour theories - Prang colour chart and Munsell colour system, Dimensions of colour and its application - hue, value, intensity, warm, cool and neutral colors. Psychological attributes of colours. Colour harmonies related colour harmonies – Achromatic, Monochromatic, Analogous colour harmonies. Colour harmonies contrast colour harmonies – Single Complementary, Double complementary, Split complementary, Clash, Triadic, Quadruple, Tetradic/ Double split colour harmonies. Application of colour harmonies in dress designing.
V	Design development for various Figure types	Planning and design the suitable dress for various short/tall figure types and figure irregularities – thin figure, stout figure, slender figure, pear/triangle figure, hourglass figure, column/rectangular figure, trapezoid/quadrilateral figure, diamond figure, wedge/inverted triangle figure, overall roundness/oval/apple figure. Factors influencing design application for different age group, occasions and seasons. Wardrobe Planning - Design development for formal, casual, party and sports wears for men, women and kids based on the location.

## READING LISTS AND RESOURCES

### **Compulsory**

1. Fashion Terminology, *Joane E. Blair*, Prentice Hall, 1992
2. Elements of Fashion and Apparel Design, *G. J. Sumathi*, New Age International, 2007
3. The Fashion Design Manual, *Macmillan Education AU*, 1996
4. The Fundamentals of Fashion Design By Richard Sorger, Jenny Udale · 2006
5. Contemporary Color: Theory and Use, *Steven Bleicher*, Cengage Learning, 2011
6. Colour Design: Theories and Applications Best, Elsevier, 2012

### **Highly Recommended, not Compulsory**

7. Textiles and Fashion: Exploring Printed Textiles, Knitwear, Embroidery, Menswear and Women's wear, JennyUdale, A&C Black, 2014
8. The Very Best Dress, *Erick Howard, Karan Kerry*, 2014 Crafts & Hobbies
9. Form, Fit, Fashion: All the Details Fashion Designers Need to Know But Can Never Find, *Jay Calderin*, Rockport Publishers, 2009

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

10. Fashion Design: Process, Innovation and Practice, *Kathryn McKelvey, Munslow* John Wiley & Sons, 2011
11. Fashion Design: The Complete Guide, *John Hopkins*, A&C Black, 2012

## SEMESTER – II

### VALUE EDUCATION- II

#### ENVIRONMENTAL STUDIES

**Course Code:** 22UPTAD2V02

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 1:1:0

**Course Duration** : 30 Hours

**Credit:** 02

#### Course Description:

It discusses about the Natural Resources and equitable use of resources for sustainable lifestyles. It deals with the structure and functions of an eco system. Its further reviews about environmental pollution and waste management techniques.

#### Course Outcomes (COs)

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

S.No	Outcomes	Domains of Learning
CO1	Express public awareness about environmental resources and an individual responsibility towards environment.	Cognitive
CO2	Infer about natural and equitable resources for sustainable lifestyles.	
CO3	Distinguish structure, function, and Energy flow in the ecosystem environment.	
CO4	Categorize environmental pollutions and its hazardous impacts and ways to control it.	
CO5	Generalize waste management and environmental ethics.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1				M						H	L
CO2			M							H	L
CO3										H	L
CO4		M								H	L
CO5		M	M			L	L		L	H	L

Unit	Unit Title	Learning Chapters
I	Environmental Resources and its Utilization	Definition - Environmental Studies, Natural Resources, Renewable, and non-renewable resources, Sustainable Utilization or Development - Reuse, Recycle, Reduce. Methods for prevent waste, Equitable use of resources for sustainable life styles. <b>Activity:</b> Take any article (e.g) Clothes, food etc., and answer <ol style="list-style-type: none"><li>Predict the components and its origin.</li><li>List the renewable and non-renewable resources in the article.</li><li>How could you re-use, recycle, and reduce the article?</li><li>How it is used unsustainably?</li><li>How to prevent Waste, can you reuse article that you throw</li></ol>

		<p>away, what recycled material can you make?</p> <p>vi. Think of the various energy sources you use every day. How could you reduce their use?</p>
II	Natural Resources and its Utilization	<p>Multidisciplinary values of nature – Productive value of nature, Aesthetic/Recreational value of nature, and the option values of nature. Detailed Classification of Natural resources – Non-renewable: Minerals, Fossil fuels; Renewable: Forest, Water, Mineral, Food, Energy, and Land. Activity: Take a cotton T-shirt and identify the raw materials, What waste it generates and how it is disposed? What pollution it creates? Role of individuals in conservation of natural resources. Equitable resources for sustainable life styles. Activity: How much water is needed for one person? Estimate your average daily consumption.</p>
III	Ecosystems	<p>Concept of an ecosystem - structure and function of an ecosystem. Producers, consumers, and decomposers. Energy flow in the ecosystem – Definition, Illustrate self explanatory figure of Water cycle, Carbon cycle, Nitrogen cycle, Oxygen cycle, and Energy cycle. Illustrate self explanatory figure of Food chains, food webs, and ecological pyramids – Terrestrial food pyramids and Aquatic food pyramids. Ecosystem – Definition, Types, Uses and threats of Forest ecosystem, Grassland ecosystem, Desert ecosystem and Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)</p>
IV	Environmental Pollution	<p>Air pollution – Definition, Types of particulates, Ozone depletion – Draw and showing the balanced and unbalanced atmospheric conditions of Green house effect. Water pollution – Definition, Ground water pollution, Control measures. Soil pollution – Definition, Soil degradation, Excess use of Pesticide, water and Salts. Marine pollution - Definition, Causes, effects, and control measures. Noise pollution - Definition, Decibel levels of common sounds, Effects of noise pollution on physical health, Effects of noise pollution on mental health, Permitted noise levels, Noise Control techniques. Thermal pollution &amp; Nuclear hazards – Definition, Effects and Control measures.</p>

V	Waste Management and Social issues & Environmental	<p>Urban/Municipal solid waste – Managing waste, Control measures – Source reduction, Recycling, Disposal– Incineration, Steps for Vermi – Composting. Hazardous waste – Characteristics, Environmental problems and health risks caused by hazardous wastes. Role of an individual in prevention of pollution.</p> <p>Social issues and environment – Needs, strategies used, From unsustainable to sustainable. Environmental Ethics – Equity, The need for Gender Equity, Preserving resources for future generations, The ethical basis of environment education and awareness, The conservation ethic and traditional value systems of India. Consumerism and Waste Products.</p>
Case studies: Pani Panjayat Moment, Mewar Region of Rajasthan, Chipko Moment, The Gandhian way of Life and The ShanthinikethanModel.		

### READINGLISTSANDRESOURCES

#### Compulsory

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
2. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
3. Clark R.S., Marine Pollution, Clanderson Press Oxford (TB)
4. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, JaicoPubl. House, Mumabai, 1196p

#### HighlyRecommended,notCompulsory

5. De A.K., Environmental Chemistry, Wiley Eastern Ltd
6. Down to Earth, Centre for Science and Environment (R)
7. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. StockholmEnv. Institute Oxford Univ. Press. 473p
8. Hawkins R.E., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
9. Heywood, V.H & Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p
10. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.

#### GoodforStudentswhohaveFutureInterests

11. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (TB)
12. Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA, 574p
13. Rao M N. & Datta, A.K. 1987. Waste Water treatment. Oxford & IBH Publ. Co. Pvt. Ltd. 345p
14. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut

**SEMESTER – II**  
**SKILL COMPONENT – V**

QUALIFICATION PACK LEVEL – 5

PRODUCTION SUPERVISOR-SEWING (Ref.ID: AMH/Q2101)

**Course Code:** 22UPTAD2S02

**Marks:** 100 Marks

**L:T:P** – 1:1:6

**Course Duration :** 45 Hours

**Credit:** 05

**Course Description:**

A Supervisor guides activities of operators and also other employees who are engaged in the process of manufacturing, inspection, processing and other related activity. Production Supervisor plans and allocates resources and monitors Machinists' schedules. Their work includes input material, checking output, equipment and ensuring process controls. They communicate, simplify, and interpret specifications, job orders, and procedures for operators and provide solutions to problems that affect the desired output and organizational goals. They also train employees for continual improvement and to achieve the organizational objectives.

**Course Outcomes (Cos)**

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

S. No	Outcomes	Domains of Learning
CO1	Understand the production specification and processes in a sewing line. Commence production in accordance with the production planning schedule.	Psychomotor and Cognitive
CO2	Execute and monitor the production as a part of the overall plan to obtain desired product quality ensuring timeliness.	
CO3	Interact within and outside the department to manage performance and to coordinate with people and from the various departments in the production unit.	
CO4	Attain knowledge required for taking responsibility for maintaining work place and comply with health, safety and security requirements at work, Hazards and Risks, Medical Emergencies, Evacuation process	
CO5	Comply with industry regulatory and organizational requirements at workplace and adapt with organizational compliance, customer compliance and compliance with all national and international laws and regulations.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	M	H	H			
CO2	H	H	H	H	H	M	H	H	H		
CO3		H			H			H	H		
CO4		H	M	H	H			H	M		
CO5		H			H			H			

Unit	Learning Chapters ( <a href="http://sscammh.com/approvedQPNo.php">http://sscammh.com/approvedQPNo.php</a> )
I	Reference ID: AMH/N 2101 Understand production specification and Process Reference ID: AMH/N21 02 Coordinate and plan production as per specifications and schedule
II	Reference ID: AMH/N 2103 Execute and monitor production as per the plan, schedule and quality norms
III	Reference ID: AMH/N 2104 Manage performance and relations with people in the group and out of the group
IV	Reference ID: AMH/N2105 Maintaining tools equipments and machinery Reference ID: AMH/N0103 Maintain health, safety and security at work place
V	Reference ID: AMH/N1505 Comply with industry, regulatory and organizational essentials

### READING LISTS AND RESOURCES

#### Compulsory

1. Qualification Pack – Occupational Standard For Apparel, Made up's And Home Furnishing Sector
2. Qualification Pack – Production supervisor-Sewing (**AMH/Q2101**)

#### Highly Recommended, not Compulsory

3. Management of Technology systems in Garment Industry, Gordana Colovic, Woodhead Publishing, New Delhi, 2011.
4. Apparel Manufacturing Technology T. Karthik, P. Ganesan, D. Gopalakrishnan · 2016
5. Process Selection from Design to Manufacture by K. G. Swift, J. D. Booker · 2000
6. Apparel International The Journal of the Clothing and Footwear Institute · Volume 28, 1997

#### Good for Students who have Future Interests

7. [http:// sscammh.com/approvedQPNo.php](http://sscammh.com/approvedQPNo.php)
8. Apparel Manufacturing IV<sup>th</sup> Edition, Ruth E Glock, Grace I Kunz, Kindersley Publications, New Delhi, 2005.
9. Garment Manufacturing – Processes, practices and Technologies, Prasantha Sarkar, Mudranik Technologies Pvt Ltd, New Delhi, 2015.

**SEMESTER – II**  
**SKILL COMPONENT – VI**  
**PORTFOLIO – TRAINING ON PRODUCTION AND QUALITY**

**Course Code:** 22UPTAD2P02

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration :** 45 Hours

**Credit:** 02

**Course Description:**

This course will practically guide the students to predict the machineries for the particular style production. It also enables the students to professionally customize the profiles and templates for making component parts in Apparel manufacturing as well as maintain quality parameters in the garment unit.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	List out the operation sequences and machineries for various garment production.	Psychomotor
CO2	Develop various templates and reports of garment production process	
CO3	Examine the production procedures in garment production floor.	
CO4	Evaluate quality parameters in the garment production floor	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1		H	H	H	H	M	H	H	L	M	L
CO2		H	H	H	H	M	H	H	H	M	M
CO3		H	L	M	H	H	M	H	H	M	L
CO4		H	M	H	H	H	L	H	M	L	M

Unit	Unit Title	Learning Chapters
I	Analyze garment operation and machineries	<ul style="list-style-type: none"> <li>• First Garment</li> <li>• Operation bulletin</li> <li>• Critical or bottle neck operations</li> <li>• List of machines used for particular style – Shirt, T-shirt, Trousers and Inner wear.</li> </ul>
II	Production Improvements	<ul style="list-style-type: none"> <li>• Prepare templates</li> <li>• Prepare profiles</li> <li>• Prepare marking patterns</li> <li>• Re-cutting &amp; Replacements</li> <li>• Input and output reports making</li> </ul>

III	Production Monitoring	<ul style="list-style-type: none"> <li>• Analyze hourly report – Batch meeting</li> <li>• Line balancing – operator adjustment</li> <li>• Operator motivation processes – Grading system</li> </ul>
IV	Quality Analyze	<ul style="list-style-type: none"> <li>• Measuring techniques in measurement tape</li> <li>• Follow traffic light system</li> <li>• Follow bundle and cut panels numbering</li> <li>• AQL - Inline and end line check reports and Reworks account</li> </ul>

### READING LISTS AND RESOURCES

#### Compulsory

1. Management of Technology systems in Garment Industry, Gordana Colovic, Woodhead Publishing, New Delhi, 2011.
2. Apparel Manufacturing Technology T. Karthik, P. Ganesan, D. Gopalakrishnan, 2016
3. Process Selection from Design to Manufacture by K. G. Swift, J. D. Booker, 2000

#### Highly Recommended, not Compulsory

4. Apparel International The Journal of the Clothing and Footwear Institute · Volume 28, 1997
5. Advances in Apparel Production, Catherine Fairhurst, Woodhead publications, Cambridge, UK, 2008.
6. Management of Technology Systems in Garment Industry Gordana Colovic, 2011

#### Good for Students who have Future Interests

7. Sourcing Practices in the Apparel Industry, Marlon Lezama, Brain Webbar, Charles Dagher, The Commonwealth Secretariate, UK, 2004.
8. Apparel Manufacturing IV<sup>th</sup> Edition, Ruth E Glock, Grace I Kunz, Kindersley Publications, New Delhi, 2005.
9. Garment Manufacturing – Processes, practices and Technologies, Prasantha Sarkar, Mudranik Technologies Pvt Ltd, New Delhi, 2015.

**SEMESTER – II**  
**SKILL COMPONENT - VII**  
**MINI PROJECT AND VIVA VOCE**  
**Innovative Product Creation**

**Course Code:** 22UPTAD2M02

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

**Course Description:**

This course will guide the students to create innovative ideas. It also enables the students to professionally customize a product or sample using various kinds of machineries used in garment manufacturing industry.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Identify the problem to develop an innovative product	Cognitive & Psychomotor
CO2	Find a solution for the defined problem	
CO3	Explain the uniqueness of the product developed	
CO4	Discuss the value proposition of the developed product	
CO5	Identify the market potential for scalability	
CO6	Calculate the economic aspects for commercialization	
CO7	Develop product addressing the sustainable development goals (SDG) on environment	
CO8	Prepare an effective documentation with photographs and video URL.	

Unit	Unit Title	Learning Chapters
1.	Problem Identification	How to identify the right problem to develop innovative product development. Define the problem and its relevance to today's market/society/Industrial needs.
2.	Solution Proposed/Idea	Apply various tools and techniques to propose solution to develop innovative product idea.
3.	Uniqueness	Explain the uniqueness and distinctive features of the product How is the developed product idea different from the competitors, if any.
4.	Value proposition	Explain the key benefits of the innovation
5.	Scalability	Highlight the market potential (market size, segment and target) aspects of the solution or the product
6.	Economic sustainability	Emphasize the commercialization/business application aspects of the solution.
7.	Environment sustainability	Highlight environmental friendliness aspects and the related benefits of the innovation
8.	Documentation	Prepare a detailed report of (unit-1-7), with high quality photographs and develop a video of the innovative product.

**SEMESTER – III**  
**CORE PAPER – III**

**CHEMICAL PROCESSING OF TEXTILES**

**Course Code:** 22UPTAD2C03

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 2:1:0

**Course Duration :** 45 Hours

**Credit:** 03

**Course Description:**

This Subject matter dealt with the processing and finishing of textile materials. It gives the basic knowledge about singeing, Desizing, Scouring, Bleaching, Dyeing and Printing of textile materials. It also builds the concept of treating the Waste water from the textile processing sector, which is the most challenging thing of this current environment.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Infer about pre-treatments and multitude processes involved in textile processing.	Cognitive
CO2	Formulate the several types of dyes & dyestuff and identify the different methods of dyeing with appropriate machineries.	
CO3	Generalize the working procedure of machineries and methods involved in textile printing.	
CO4	Classify the several types of textiles finishing and its applications in different fields.	
CO5	Distinguish the eco-friendly process involved in treatment of dye house effluent discharges.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H		H	H	M	H	H	H		H	
CO2	H		H	H	M	H	H	H		H	H
CO3	H		H	H	M	H	H	H		H	M
CO4	H		H	H	M	H	H	H		H	M
CO5	H		L	H	M	H	H	H	L	H	

Unit	Unit Title	Learning Chapters
I	Preparatory Process	Pre-preparatory process – Objectives, Types - Stitching, Brushing and Grey check. Singeing: Objectives, Types - Plate, Roller and Gas singeing, merits and demerits. Desizing: Objectives, types - Rot steep, Acid steep and Enzymes steep, advantages and disadvantages. Scouring: Objectives, recipe, principle and scour loss.

		Bleaching: Objectives, Types - Sodium Hypochlorite, Hydrogen peroxide, Optical Brightening Agents (OBA). Mercerization: Objectives and principles - yarn and fabric mercerization - outline of pad-less chainless fabric mercerization. Degumming of silk.
<b>II</b>	<b>Dyes and dyeing machineries</b>	Dye: Common terms, Classification of dyes and its properties, difference between dye and pigment. Dyeing of cotton fabric with direct, reactive, vat. Dyeing of wool and silk with acid and basic dyes. Dyeing of polyester and nylon using disperse dye. Dyeing machines and working Principles of Fibre dyeing - Hussang loose fibre dyeing machine. Yarn Dyeing - Hank Dyeing, Package dyeing machine. Fabric Dyeing - Jigger, Winch, Jet dyeing machine and garment dyeing machines. Natural Dyeing - Role of natural sources for Dyeing process. After treatment process for dyeing.
<b>III</b>	<b>Printing</b>	Printing: Introduction to Printing. Preparation of printing paste, Comparison of dyeing and printing. Styles of printing - direct, discharge and resist styles of printing. Printing Machines: roller, flat bed screen, rotary- screen printing, and transfer printing machines. Garment printing machines. Modern Printing methods: Printing inks - digital printing- sublimation printing- 3D printing concept. Eco printing concept. After treatment process for Printing.
<b>IV</b>	<b>Finishing</b>	Finishing: Introduction, objectives, Classification, and methods off finishing: Padding mangles, Heat setting, Coating. Aesthetic finishes: Sanforizing, Compacting, Calendering and Texture related finishes. Functional Finishes: Wrinkle free, Water repellent, Flame retardant and soil release finishes. Special Finishes: Insect repellent, Fragrance, Stone wash and Antibacterial finishes. Recent trends in finishing: Silicon, Resins, Enzymes and Nano-finish applications.

<b>V</b>	<b>Effluent Treatment</b>	ETP – Objectives, Nature and effects, innovative solutions and its ranges. Types of Treatment processes - primary, secondary, and tertiary treatments. Osmosis and Reverse Osmosis water purification system. Government standards and outcomes for Effluent treatment plants. Eco-friendly textile processing – Dyes, finishes. Recycling and Organic fibres. Banned dyes: Azo and Amines, Reasons and Impacts. Eco labels - Government and Private labeling schemes.
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### READING LISTS AND RESOURCES

#### **Compulsory**

1. Shenai V. A., Technology of Textile Processing – Vol. III, IV, V, VII and VIII, Sevak Publications, Mumbai, 1995
2. D G Dugg and S Sinclair, —Giles's Laboratory Course in Dyeing, Woodhead Publishing Limited (Fourth edition) December, 1989
3. Palmer John W., Textile Processing and Finishing Aids: Recent Advances, Mahajan Book Distributors, 1996
4. Ronald James W., Printing and Dyeing of Fabrics and Plastics, Mahajan Book Distributors, 1996
5. Textile Wastewater Treatment, 2016
6. Textile Finishing Basic Concepts and Application By D. Gopalakrishnan, 2018

#### **Highly Recommended, not Compulsory**

7. Textile Bleaching, Dyeing, Printing and Finishing Machinery By Archibald John Hall, 1926
8. Textile Dyeing Wastewaters Characterization and Treatment By Roderick H. Horning, 1978
9. Handbook of Textile and Industrial Dyeing Principles, Processes and Types of Dyes, 2011
10. Textile Processing with Enzymes, 2003

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

11. Handbook on Printing Technology (Offset, Flexo, Gravure, Screen, Digital, 3D Printing with Book Binding and CTP) 4th Revised Edition, 2019
12. Textiles, Identity, and Innovation: In Touch Proceedings of the 2nd International Textile Design Conference (D\_TEX 2019), June 19-21, 2019, Lisbon, Portugal By Manuela Cristina Paulo Carvalho Figueiredo, 2020
13. L. W. C Wiles, —Textile Printing (Merrow Monographs. Textile Technology Series)

**SEMESTER – III**  
**CORE PRACTICAL – IV**  
**CHEMICAL PROCESSING OF TEXTILES PRACTICAL**

**Course Code:** 22UPTAD2C04

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration :** 45 Hours

**Credit:** 02

**Course Description:**

The Course is structured to provide intensive practical skills in the area of textile processing as well as pre-treatment, dyeing and printing. They suggest various methods used for waste water disposal and eco friendly manners in apparels. Also it deals with calculation of weight loss percentage and dye affinity shade in the respective fabric samples.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Modify grey fabric samples by preparatory process and calibrate the weight loss percentage.	Psychomotor
CO2	Develop the pre-treated fabric samples into dyed samples and formulate the percentage of shade.	
CO3	Build printed samples by various printing techniques on pre treated or dyed fabric samples.	
CO4	Propose the various waste water disposal methods in the textile chemical processing units and suggest the eco friendly textile etiquette.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	L	H	H	H	H	H	M		H	M
CO2	H	L	H	H	H	H	H	M		H	M
CO3	H	L	H	H	H	H	H	M		H	H
CO4			L	H	H	H	L	M	H	H	M

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Preparatory Process</b>	Treat grey cotton woven / knitted fabrics: <ul style="list-style-type: none"> <li>• Scouring,</li> <li>• Desizing,</li> <li>• Bleaching and</li> <li>• Mercerizing.</li> </ul>

<b>II</b>	<b>Dyeing</b>	<p>Dye the suitable fabric Samples using suitable dye stuff.</p> <ul style="list-style-type: none"> <li>• Direct Dye,</li> <li>• Disperse Dye,</li> <li>• Reactive Dye (Hot/Cold),</li> <li>• Acid Dye,</li> <li>• Basic Dye and</li> <li>• Vegetable Dye (any one)</li> </ul>
<b>III</b>	<b>Printing</b>	<p>Print the Samples using a suitable printing method.</p> <ul style="list-style-type: none"> <li>• Printing paste preparation</li> <li>• Block printing – Vegetable and Wooden Blocks,</li> <li>• Stencil printing – Brush, Sponge, Spray and Flock Methods</li> <li>• Tie and Dye Method – Single/Double/Multi Colours.</li> <li>• Batik printing – Single/Double Colours and</li> <li>• Screen printing.</li> </ul>
<b>IV</b>	<b>ETP and Eco friendly concepts</b>	<ul style="list-style-type: none"> <li>• Techniques using waste water disposal method – Primary, Secondary and Tertiary treatments.</li> <li>• Water purification – Reverse Osmosis</li> <li>• Eco friendly Textiles – Organic and Recycling</li> </ul>

### READING LISTS AND RESOURCES

#### Compulsory

1. Eco-Friendly Textile Dyeing and Finishing books Jam shed A Khan · 2016
2. Environmental Aspects of Textile Dyeing R M Christie · 2007
3. Textile Dyeing N. N. Mahapatra · 2019

#### Highly Recommended, not Compulsory

4. Water and Wastewater Examination Manual V.Dean Adams · 2017
5. Sustainability in the Textile and Apparel Industries Subramanian Senthilkannan Muthu , Miguel Angel Gardetti, 2020

#### Good for Students who have Future Interests

6. The Chemistry of Synthetic Dyes V6: Reactive Dyes K Venkataraman · 2012
7. Printed Textile Design Amanda Briggs-Goode · 2013

**SEMESTER – III**  
**CORE PAPER – V**

**INDUSTRIAL GARMENT MACHINERIES AND EQUIPMENTS**

**Course Code:** 22UPTAD2C05

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 3:0:0

**Course Duration :** 45 Hours

**Credit:** 03

**Course Description:**

This course knowledge the student about the garment manufacturing units, departments, their activities and roles, uses of machinery in various departments and importance of the equipment.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Describe the apparel manufacturing operation involved in various departments in the apparel industry.	Cognitive
CO2	Identify the industrial machineries involved in various garment process	
CO3	Classify the special attachments of the industrial sewing machineries for high productivity	
CO4	Arrange the operation-wise machine layout for woven and knitted garments	
CO5	State the various equipments used in ironing and packing in the garment manufacturing unit.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1		H		M	H		L	H	H		
CO2		H	M	M	H	M					H
CO3		H	M	M	H	M	H				
CO4		H	M	M	H	M	M				
CO5		H		M	H	M	H				

Unit	Unit Title	Learning Chapters
I	Departments in Apparel manufacturing Unit	Admin departments – Human Resource, Accountancy, Security, Electrical and Machine Maintenance, Labour welfare and health Production department – Merchandising, Accessory Stores, Pattern making, Sampling, Fabric Cutting, Sewing, QAD, Packing – Finishing, Packing, Final Inspection and Shipment.

II	Garment industry machineries	<b>General machineries</b> – Boilers, Bio matric and Power generator. <b>Cutting machineries</b> – Plotter, spreader, cutting machine by hand, band knife, round knife, straight knife machine, automatic cutter, Sticker machine. <b>Sewing machineries</b> – Single Needle lock stitch (SNLS), Double Needle Lock stitch (DNLS), Over lock machine-and its type, Edge cutter with SNLS, Welt Pocketing, Auto Zig, Feed of Arm (FOA), Edge cutter with SNLS, Flat lock machine – and its types.
		<b>Finishing machineries</b> – Bar tack, Button hole machine, button sewing machine, and Metal detection machine (MDM).
III	Special attachments	Classification of Sewing machine Guide attachments - Edge guide, Presser foot, Hemming foot, zipper foot. Classification of Sewing machine positioning attachments - Folder and Binders
IV	Machine Layout	Machine layout-types, Procedure, Techniques and operation bulletin. Stitching operation wise layout and machineries used for shirt manufacturing, Trouser, T-shirt
V	Fusing and pressing equipments	Fusing machine – Working procedure and types. Ironing – Pressing – Purpose of pressing – Types of pressing methods – Pressing, equipment and methods – Iron and steam press. Sucking – purpose – Packing machine and method of packing.

### READING LISTS AND RESOURCES

#### Compulsory

1. Apparel Machinery and Equipment's By R. Rathinamoorthy, R. Surjit , 2015
2. Automation in Textile Machinery Instrumentation and Control System Design Principles By L. Ashok Kumar, M Senthil Kumar, 2018
3. Industrial engineering in apparel production. Babu, r. V Wood head publishing, 2012
4. Introduction to clothing manufacture. Wiley. Cooklin, g, 2006
5. Cooklin's garment technology for fashion designers. John wiley. Cooklin G, Hayes, S. G., Mcloughlin, J., & Fairclough, d, 2012

#### Highly Recommended, not Compulsory

6. Apparel manufacturing: sewn product analysis. Pearson/prentice hall. Glock, r. E., &kunz, g. I, 2005
7. The sewing machine attachment handbook. Krause publications. Phillips, c., 2009
8. Apparel machinery and equipment's. Rathinamoorthy, R., & Surjit, R., 2015
9. Guide to basic garment assembly for the fashion industry. John Wiley. Smith, j., 2013

#### Good for Students who have Future Interests

10. <http://www.ngaishinhk.com/en/text.asp>
11. Carr and Latham's technology of clothing manufacture. John Wiley. Tyler, d. J., 2009
12. Complete photo guide to sewing, sewmucheasier.com/guide to your sewing machine presser feet.

**SEMESTER – III****ALLIED - III****FASHION ILLUSTRATION PRACTICAL****Course Code:** 22UPTAD2A03**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:1:2**Course Duration** : 45 Hours**Credit:** 02**Course Description:**

Fashion Illustration is the specialty of conveying design thoughts in a visual structure that starts with representation, drawing and painting and furthermore known as Fashion portraying. It is principally utilized by style architects to conceptualize their thoughts on paper.

**Course Outcomes (COs)**

By the successful completion of the Course, Students will be able to

S. No	Outcomes	Domains of Learning
CO1	Create different art styles and shadings by adapting the basic media and tools in illustration.	Psychomotor
CO2	Replicate the scenarios of the nature and other objects with various perspectives.	
CO3	Develop the Human figures by transforming the head theories	
CO4	Application of colours in garment designing	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1			H	H	L	L	H			H	H
CO2			H	H	L	L	H			H	H
CO3			H	H	H	H	H			H	H
CO4			H	H	H	M	H			M	H

Unit	Unit Title	Learning Chapters
I	Basic media and tools with shading	Pencil & colour mediums - Colour pencils, Poster colour/ water colour, Acrylic, Charcoal and Pastel. Lines and Shading - Types. Introduction to Perspective & its types.
II	Human figure study	Basic parts of human bodies - Basic Observing figures - using lines – Head Theory – 8 Head, 10 Head and 12 Head (Stick, Block and Flesh) - Applications of different postures and shades.
III	Accessories and Ornaments	Ornaments: Hair ornaments, Earrings, Neck ornaments, Rings, Bangles/bracelet, Anklets, Accessories: Hair accessories, Glasses/Specs, Watch, Belt, Cap, Foot wear, Bags, Purse/wallet - used for men, women and kids.

IV	Color applications in Garment designing	Prank Color Chart, Value Chart, Intensity Chart, Color Harmonies application on fashion figures. Replica art from Fashion Magazines. Create garments using fabric swatch.
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## READING LISTS AND RESOURCES

### Compulsory

1. Fashion Illustration: Basic Techniques Julian SeamanBatsford, 1996
2. Essential Fashion Illustration: Poses, 2007
3. Fashion Illustration Flat DrawingBy Daniela SantosQuartiino, Catherine Collin . 2007
4. Fashion Illustration Inspiration and Technique By Anna Kiper, 2011
5. A Modern Perspective on Type Theory From Its Origins Until Today By F.D. Kamareddine, T. Laan, Rob Nederpelt, 2004

### Highly Recommended, not Compulsory

6. Fashion Illustration Techniques A Super Reference Book for BeginnersByZeshuTakamura, 2012
7. Perspective, Projections and Design Technologies of Architectural Representation, 2013

### Good for Students who have Future Interests

8. <https://schoolofsketching.com/blog-in-english/perspective>
9. <https://study.com/academy/lesson/one-point-perspective-drawing-definition-examples.html>
10. <https://www.liveabout.com/perspective-drawing-definition-1123070>
11. <https://www.craftsy.com/post/how-to-draw-3d-shapes/>
12. <https://www.skillsyouneed.com/num/3d-shapes.html>
13. <https://mymodernmet.com/perspective-drawing/>
14. <https://youtu.be/8jvea0YWDK0>

**SEMESTER – III**  
**NON MAJOR ELECTIVE - I**  
**COMPUTERIZED REPORT MAKING PRACTICAL**

**Course Code:** 22UPTAD2N01

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 03

**Course Description:**

In this subject students can intellectualize the idea of spreadsheet. They will learn the basic tools and usages which will help them to develop the skills in that software which in turn can be utilized for their future job roles as merchandiser, quality controller, warehouse and in many areas where data are maintained using it.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Create official spreadsheet with diagrammatic representation	Psychomotor
CO2	Calculate various cost sheets used in industry using the formula and functions in Spreadsheet.	
CO3	Develop industry planning and production reports using large amount of data in Spreadsheet.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1				M	M	H	H	H			H
CO2				M	M	H	H	H			H
CO3				M	M	H	H	H			H

Unit	Unit Title	Learning Chapters
I	Business spreadsheet	Prepare a spreadsheet for <ul style="list-style-type: none"> <li>• Sales projection sheet</li> <li>• Simple budget</li> <li>• Prepare loan payment</li> </ul>
II	Industrial spreadsheet	Prepare a spreadsheet for <ul style="list-style-type: none"> <li>• Time Study sheet with OCT chart</li> <li>• Hourly target analysis report</li> <li>• Monthly Plan for production line</li> <li>• Prepare operation wise costing sheet</li> <li>• Factory efficient report monthly plan</li> </ul>

III	Employee Spreadsheet	Prepare a spreadsheet for <ul style="list-style-type: none"> <li>• Operator Skill Matrix</li> <li>• Employee attendance percentage with wages earned</li> <li>• Employee salary sheet</li> </ul>
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### READING LISTS AND RESOURCES

#### Compulsory

1. Microsoft Excel Fundamentals Practical Workbook for Small Businesses By Rudy LeCorps, 2002
2. Practical Numerical Analysis using Microsoft Excel By A. Nandy, 2003
3. Advance Excel 2016 Training Guide By Ritu Arora, 2018
4. Microsoft Excel 2013 By Curtis Frye, 2013
5. Build Neural Network With MS Excel By Joe Choong

#### Highly Recommended, not Compulsory

6. Straight to the Point : MS Excel 2003 by Firewall Media, 2005
7. A Tutorial On Ms-Excel By V.B. Aggarwal, 2000
8. Excel 2016 bible. Walkenbach, J. (2015) Available at: (Accessed: 27 January 2017).

#### Good for Students who have Future Interests

9. <https://www.emsisd.com/cms/lib/tx21000533/centricity/domain/71/practicalusesexcel.pdf>
10. <http://www.johnsjc.com/IT/Excel%20Practical-1.docx>
11. <https://www.wiseowl.co.uk/excel/exercises/standard/>
12. <https://www.youtube.com/watch?v=B7-h1Rb08CI>
13. <https://www.youtube.com/watch?v=fJbzc5pj3cM>

**SEMESTER – III**  
**SKILL COMPONENT – VI**  
**PORTFOLIO – BASICS OF INDUSTRIAL ENGINEER**

**Course Code:** 22UPTAD2P03

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

**Course Description:**

The course will practically guide the students to professionally planning the production activities and endure the students to skillfully obtain the production outputs and increase the efficiency.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	List out the operation sequences and machineries for various garment production.	Psychomotor
CO2	Develop various templates and reports of garment production process	
CO3	Examine the production procedures in garment production floor.	
CO4	Evaluate quality parameters in the garment production floor	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1		H	M	M	H	L	M	H	L	M	
CO2		H	M	M	H	L	M	H	L	M	
CO3		H	M	M	H	L	M	H	L	M	M
CO4		H	M	M	H	L	M	H	L	M	M

Unit	Unit Title	Learning Chapters
I	Production Arrangements	<ul style="list-style-type: none"> <li>• Layout Designing</li> <li>• Operator Training (Motivational &amp; Personality Development)</li> <li>• Special Machines – Purpose &amp; Arrangements</li> <li>• PP meeting</li> </ul>
II	Production Line Activity	<ul style="list-style-type: none"> <li>• Time Study <ul style="list-style-type: none"> <li>○ Initial Stage</li> <li>○ Moderate Stage</li> <li>○ OCT Chart Preparation</li> </ul> </li> <li>• Capacity Study</li> <li>• Line Production Plan</li> </ul>

III	Pre - Production Activity	<ul style="list-style-type: none"> <li>• Machinery Matrix</li> <li>• Skill Matrix</li> <li>• Work Station Planning</li> <li>• Thread Consumption</li> </ul>
IV	High Productivity	<ul style="list-style-type: none"> <li>• Method Study</li> <li>• Special Attachments – Purpose &amp; Arrangements</li> <li>• Line Balancing</li> <li>• Operator Soft Skills</li> </ul>

### **READING LISTS AND RESOURCES**

#### **Compulsory**

1. Management of Technology systems in Garment Industry, GordanaColovic, Woodhead Publishing, New Delhi, 2011.
2. Apparel Manufacturing Technology T. Karthik, P. Ganesan, D. Gopalakrishnan, 2016
3. Process Selection from Design to Manufacture by K. G. Swift, J. D. Booker, 2000

#### **Highly Recommended, not Compulsory**

4. Apparel International The Journal of the Clothing and Footwear Institute · Volume 28, 1997
5. Advances in Apparel Production, Catherine Fairhurst, Woodhead publications, Cambridge, UK, 2008.
6. Management of Technology Systems in Garment Industry GordanaColovic, 2011

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

7. Sourcing Practices in the Apparel Industry, Marlon Lezama, Brain Webbar, Charles Dagher, The Commonwealth Secrteriate, UK, 2004.
8. Apparel Manufacturing IV<sup>th</sup> Edition, Ruth E Glock, Grace I Kunz, Kindersley Publcatins, New Delhi, 2005.
9. Garment Manufacturing – Processes, practices and Technologies, Prasantha Sarkar, Mudranik Technologies Pvt Ltd, New Delhi, 2015.

**SEMESTER – III**  
**SKILL COMPONENT – VII**  
**MINI PROJECT AND VIVA VOCE**

**Innovative Product/Process Development**

**Course Code:** 22UPTAD2M03

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

**Course Description:**

This course will guide the students to create innovative ideas. It also enables the students to professionally customize a product or sample using various kinds of machineries used in garment manufacturing industry.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Identify the problem to develop an innovative product	Psychomotor
CO2	Find a solution for the defined problem.	
CO3	Explain the uniqueness of the product developed	
CO4	Discuss the value proposition of the developed product	
CO5	Identify the market potential for scalability	
CO6	Calculate the economic aspects for commercialization	
CO7	Develop product addressing the sustainable development goals (SDG) on environment	
CO8	Prepare an effective documentation with photographs and video URL.	

Unit	Unit Title	Learning Chapters
I	Problem Identification	How to identify the right problem to develop innovative product development. Define the problem and its relevance to today's market/society/Industrial needs.
II	Solution Proposed/Idea	Apply various tools and techniques to propose solution to develop innovative product idea.
III	Uniqueness	Explain the uniqueness and distinctive features of the product How is the developed product idea different from the competitors, if any.
IV	Utility value/Value Proposition	Explain the key benefits of the innovation
V	Scalability	Highlight the market potential (market size, segment and target) aspects of the solution or the product
VI	Economic Sustainability	Emphasize the commercialization/business application aspects of the solution.
VII	Environment Sustainability	Highlight environmental friendliness aspects and the related benefits of the innovation.
VIII	Documentation	Prepare a detailed report of (unit-1-7), with high quality photographs and develop a video of the innovative product.

## SEMESTER – IV

### CORE - VI

#### TEXTILE AND APPAREL QUALITY CONTROL

**Course Code:** 22UPTAD2C06

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 2:1:0

**Course Duration :** 45 Hours

**Credit:** 03

#### **Course Description:**

This course expedites the students to gain knowledge towards the Quality measures, processes and management system in the Textiles and Apparel Industries. Updated facts towards Quality control make the students to explore more in the industries.

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

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

S. No	Outcomes	Domains of Learning
CO1	Summarize the concepts of quality its holistic, product, value and customer perspective.	<b>Cognitive</b>
CO2	Interpret standards and certificates for Textile and Apparel sector.	
CO3	Analyzing quality through Inspections, testing tools of quality, its defects and inspection system.	
CO4	Categorize quality standards and its property in trims and accessories	
CO5	Interpret tools used in quality assurance in care labels, eco labels and its instruction	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H		L	H	H	M	M	H	L	L	L
CO2	L		M	H	H	H	H	H	M	L	L
CO3	H	M	H	H	H	M	H	H	M	L	L
CO4	H	M	H	H	H	M	H	H	M	L	L
CO5	H	M	H	H	H	M	H	H	M	L	L

Unit	Unit Title	Learning Chapters
I	Introduction to Quality	Define Quality ,Quality Control - Definitions of Quality – holistic Perspective, Product Perspective, Produces Perspective, Customer Perspective and Value Based Perspective, Dimensions of Quality,Quality Assurance & Quality Management
II	Standards and specifications	Define Standard, Benefits of Standard, Levels of Standard, Source of Standard - AATCC, ISO, ASTM, INDA, BIS and GINTEX, American Society for Quality, American Apparel and Tc2, American National Standard Quality&OEKO Tex 100 Standards.

III	Inspection Procedures & Defects	Managing quality through Inspection, Managing quality through Testing, Seven tools of qualities. Definition of Inspection-Raw Materials- Inspection-In process Inspection-Final Inspection,4-point system, 10-point system. Defect. Inspection of Sewing Thread - Zippers – Button, Buckles, Snap Fasteners. In process Inspection -Spreading, Cutting, Sewing and Pressing/Finishing.
IV	Quality control standards	Quality control standards for sewing thread, seam strength, seam properties, Interlinings, elastic, waistband, zippers, sewing threads, buttons, and laces. Accessories testing -Inspecting garments using spec sheets. Button quality testing - Interlining quality testing - Quality procedures for packing a shirt.
V	International care labelling system	Concepts of TQM - tools used for quality assurance - Care label -labelling Instructions and eco labels specification- International care labelling system- European -Japan-Canada-British care labelling systems.

### READING LISTS AND RESOURCES

#### Compulsory

- 1 Mehta V., —Managing quality in the apparel industry ", New Age International, Chennai, 1998
- 2 E-Study cylinder for acceptance sampling quality in control by Edward G.Schilling
- 3 Quality Management ", Textile Progress, The Textile Institute, Manchester, 1998
- 4 Mehta P.V. —An Introduction to Quality Control for the Apparel Industry ", Marcel Dekker, 1992.

#### Highly Recommended, not Compulsory

- 5 The Fundamentals of Quality Assurance in the Textile Industryl, Stanley Bernard Brahams, First edition, published , 2016.
- 6 —The Quality Toolboxl, Second Edition - Nancy R. Tague, Published 2013, ISBN: 978-0-87389-871-3
- 7 Quality Audits For Improved Performancel, Third Edition, Dennis R. Arter , Published 2002, ISBN: 978-0-87389-570-5

#### Good for Students who have Future Interests

- 8 Process Quality Control Troubleshooting and Interpretation of Data, Fourth Edition, Ellis R. Ott, Edward G. Schilling, Dean V. Neubauer, Published, 2005

## SEMESTER – IV

### CORE – VII

#### GARMENT CONSTRUCTION PRACTICAL (KID'S WEAR)

**Course Code:** 22UPTAD2C07

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

#### **Course Description:**

The Course structured to provide practical skills in pattern development and construction for children's garments also this will help students to calculate the cost calculation and fabric requirement for the respective garments.

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

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

S. No	Outcomes	Domains of Learning
CO1	Design the various children's garments and formulate the measurements	<b>Psychomotor</b>
CO2	Develop the pattern blocks for different kinds of kids' garments and estimate the material calculation	
CO3	Construct the designed children's garments and calibrate cost calculation	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	M	H	M	L	L	L
CO2		H	H	H	H	M	H	M	L	L	L
CO3	M	H	H	H	H	H	H	H	M	L	

Unit	Unit Title	Learning Chapters
I	Garment Designing	Design a garment for New born: layette set. Toddler: Baba-suit, Frock varies School Age: Pinafore, Uniform Shirt and Trousers.
II	Pattern Making	Drafting the patterns for Layette set, Baba-suit, Frock varies, Pinafore, Uniform Shirt and Trousers.
III	Garment Construction	Construct Layette set, Baba-suit, Frock varies, Pinafore, Uniform Shirt and Trousers.

#### **Laboratory Equipments:**

Drafting Tools, Single Needle Lock Stitch Machine, Over Lock Machine & Ironing Equipments.

## READING LISTS AND RESOURCES

### Compulsory

1. Garment Construction A Complete Course on Making Clothing for Fit and Fashion By Peg Couch, 2011
2. The Complete Book of Sewing By Chris Jeffreys, DK Publishing, Inc, 2003
3. The New Complete Guide to Sewing Step-by-Step Techniques for Making Clothes and Home Accessories Updated Edition with All-New Projects and Simplicity Patterns By Editors of Reader's Digest, 2010
4. The Dressmaker's Companion A Practical Guide to Sewing Clothes By Elizabeth M. Haywood
5. The Dressmaker A Complete Book on All Matters Connected with Sewing and Dressmaking from the Simplest Stitches to the Cutting, Making Altering, Mending and Caring for the Clothes By Butterick Publishing Company, 1916.
6. Illustrated Guide to Sewing: Garment Construction A Complete Course on Making Clothing for Fit and Fashion By Fox Chapel Publishing, Colleen Dorsey, 2011
7. Practical Pattern Making By Lucia Mors, Lucia Mors de Castro, Isabel Sánchez Hernández, 2015
8. Patternmaking For Fashion Design And DVD Package, 4/E (DVD) By Helen Joseph, 2008
9. Metric Pattern Cutting for Children's Wear and Baby wear By Winifred Aldrich, 2009

### Highly Recommended, not Compulsory

10. Pattern Making for Kids' Clothes All You Need to Know about Designing, Adapting, and Customizing Sewing Patterns for Children's Clothing By Carla Hegeman Crim, 2014
11. Oliver + S Little Things to Sew 20 Classic Accessories and Toys for Children By Liesl Gibson, Liesl and Company, Inc., 2011
12. Children's costume in America, 1607-1910 1980
13. Fashion Patternmaking Techniques for Children Dresses, Shirts, Bodysuits, Trousers, Jackets and Coats By Antonio Donnanno , 2018

### Good for Students who have Future Interests

14. Laser Cutting for Fashion and Textiles By Laura Berens Baker , 2016
15. <http://www.madehow.com/Volume-4/Children-s-Clothing.html>
16. <https://sewguide.com/sewing-for-children/>
17. <https://www.thesprucecrafts.com/techniques-for-sewing-clothing-2978471>
18. <https://www.garnethill.com/kids-size-charts/content>
19. <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=121322>
20. <https://www.muellerundsohn.com/en/allgemein/pattern-construction-for-baby-basics/>

## SEMESTER – IV

### CORE – VIII

#### BASIC DRAPING PRACTICAL

Course Code: 22UPTAD2C08

Marks: 100 Marks (Internal-40; External-60)

L:T:P – 0:0:2

Course Duration : 30 Hours

Credit: 01

#### Course Description:

The course provides unique training for the role of Costume Designer, allowing students to visualize three-dimensional views of imaginative designs and examine the fit of the dress for personalized designs using draping techniques. The students are learning basic draping techniques to develop uniquely in the apparel field of design.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Prepare muslin cloth and recognize the measurements for pattern blocking	Psychomotor
CO2	Demonstrate basic front bodice, basic back bodice, Skirt and Sleeve in the selective dress form.	
CO3	Develop the darts variations in draped pattern bodice.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	M	M	L	H	L	L	L
CO2	H	H	M	H	M	H	L	M	L	L	L
CO3	H	H	H	H	H	M	M	H	L	L	L

Unit	Unit Title	Learning Chapters
I	Basic Preparation For Draping	<ul style="list-style-type: none"><li>• Equipment Needed</li><li>• Preparation of Muslin for Draping</li><li>• Blocking</li><li>• Pressing</li></ul>
II	Basic Patterns	<ul style="list-style-type: none"><li>• Basic bodice - Front Fullness ,Tucks ,Pleats ,Gathers</li><li>• Basic bodice - Back</li><li>• Basic Skirt -knife pleat &amp; box Pleat</li><li>• Basic Sleeve</li></ul>
III	Fullness in Bodices	Darts variations in Front bodice Back bodice and basic, Skirt

## READING LISTS AND RESOURCES

### **Compulsory**

1. Draping Techniques for Beginners By Francesca Sterlacci, 2019
2. Fitting Patterns Using Draping Techniques By Connie Amaden-Crawford, 2011
3. Designing by Draping Methods, Designing Techniques by Woman's Institute of Domestic Arts and Sciences (Scranton, Pa.), 1948

### **Highly Recommended, not Compulsory**

4. Cutting and Draping Party and Eveningwear Dressmaking and Pattern Cutting for Special Occasion Clothes By Dawn Cloake , 2016
5. Cutting and Draping Special Occasion Clothes Designs for Eveningwear and Partywear By Dawn Cloake, 1998

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

6. <https://www.universityoffashion.com/disciplines/draping/>
7. <https://www.moodfabrics.com/blog/a-quick-guide-to-draping-tips-and-fabrics/>

## SEMESTER – IV

### CORE - IX

#### HERITAGE OF INDIAN TEXTILES

Course Code: 22UPTAD2C09

Marks: 100 Marks (Internal-25; External-75)

L:T:P – 2:0:0

Course Duration : 30 Hours

Credit: 02

#### Course Description:

This course enhances the students to gain knowledge about Ancient Costume and its development, the Arts of Dyeing and printed textiles in India as well as different culture adapted in attire and the costumes of various cardinal regions in India.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Summarize the Origin and history of Costumes in India	Cognitive
CO2	Interpret the Arts, Dyeing and printed of Indian textiles	
CO3	Generalize the Costumes of Northern India and its culture.	
CO4	Categorize the Costumes and culture of Western & Central India	
CO5	Interpret the Design, culture and Costumes of Southern & Eastern India	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1				H	L	H	H	M	H	L	
CO2				H	L	H	H	M	H	L	
CO3			L	H	H		H	L	H	L	M
CO4				H			H		M	L	M
CO5		L	L	H	M	M	H	L	H		M

Unit	Unit Title	Learning Chapters
I	Origin and history of Costume	Introduction to origin costume - Body Decoration-Painting –coloured clay - cutting –tatooting -Beginning of Costume – Indus Valley Civilization Costumes- Indo Aryan and Vedic age Costumes - Mauryan and the Sungh Period Costumes - Satavana Period Costumes - Kushan Period Costumes - Gupta Period Costumes - Mughal Period Costumes.
II	Indian Arts Applications – Textiles	Dyed and printed textiles of India - Bhandhani, patola , ikkat, kalamkari - Dacca Muslin, Banarasi/Chanderi brocades, baluchar, himrus and amrus, Kashmir shawls, Pochampalli sarees, silk sarees of Kancheepuram - Folk and Tribal Art - Madhubani Paintings – Pattachitra - Mysore Painting - Tanjore Paintings - Rajput Painting - Warli Painting - Gond Painting.

<b>III</b>	Costumes of Northern India	Costume of Jammu & Kashmir, Costume of Himachal Pradesh, Costume of Punjab, Costume of Haryana, Costume of Rajasthan costume of Uttar Pradesh and costume of Bihar.
<b>IV</b>	Costumes of Western & Central India	Costume of Goa, Costume of Gujarat, Costume of Maharashtra, Costume of Madhya Pradesh, Costume of Dadra and Nager Haveli, Costume of daman and diu.
<b>V</b>	Costumes of Southern & Eastern India	Costume of Andhra Pradesh, Costume of Karnataka, Costume of Kerala, Costume of Tamil Nadu, and Costume of Telangana Costume of Arunachal Pradesh, Costume of Assam, Costume of Meghalaya, Costume of Manipur, Costume of Mizoram, Costume of Nagaland and Costume of Tripura.

### READING LISTS AND RESOURCES

#### Compulsory

1. Chakravarti, Ranabir: Merchants, Merchandise & Merchantmen, in: Prakash, Om (ed.): The Trading World of the Indian Ocean, 1500-1800 (History of Science, Philosophy and Culture 362 in Indian Civilization, ed. by D.P. Chattopadhyaya, vol. III, 7), Pearson, Delhi, 2012, pp. 53- 116.
2. Chaudhuri, Kirti N.: Trade and Civilisation in the Indian Ocean, CUP, Cambridge, 1985.
3. Malekandathil, Pius: Maritime India: Trade, Religion and Polity in the Indian Ocean, Primus Books, Delhi, 2010.
4. McPherson, Kenneth: The early Maritime Trade of the Indian Ocean, in: ib.: The Indian Ocean: A History of People and The Sea, OUP, 1993, pp. 16-75.
5. Christie, J.W., 1995, State formation In early Maritime Southeast Asia, BTLV

#### Highly Recommended, not Compulsory

6. Christie, J.W., 1999, The Banigrama in the Indian Ocean and the Java sea during the early Asian trade boom, Communarute'smaritimes de l'oceanindien, Brepols
7. De Casparis, J.G., 1983, India and Maritime Southeast Asia: A lasting Relationship, Third Sri Lanka Endowment Fund Lecture.

#### Good for Students who have Future Interests

8. Hall, K.R., 1985, Maritime Trade and State development in early Southeast Asia, Honolulu. Walters, O.W., 1967, Early Indonesian Commerce, Ithaca

## SEMESTER – IV

### ALLIED – IV

#### DIGITAL DESIGN STUDIES PRACTICAL

**Course Code:** 22UPTAD2A04

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 30 Hours

**Credit:** 02

#### Course Description:

Digital Design Studies is designed to edit two-dimensional images such as logos, posters etc., Corel graphics suites which include bitmap- images editor as well as other graphics related programs. This is a drawing program for windows in which we can create professional artwork like Logos, all types of cards, calendar, stationery, magazines, and books.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Execute the garments designs over 2 dimensional flat sketches using Corel Draw tools.	Psychomotor
CO2	Perform various design studies in Corel Draw	
CO3	Develop logo, labels and printing designs in Corel Draw.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1			H		H	L	M	L	L		H
CO2			H		H	L	M	L	L		H
CO3			H	H	H	L	M	L	L		H

Unit	Unit Title	Learning Chapters
I	Create and Manipulate garment flat sketches	Coral draw models and applications. Working environment –Tool box, Menu bar, Property bar, Docker, Page layout, Status bar. Creating garment flat sketches using shaping options. Creating merchandising spec sheet using garment flat sketches. Manipulating flat sketches for style changes – Collar, Sleeve, Placket, Pocket, Hemline, Stitch line. Creating design for fashion silhouette suitable for apparel and fashion industry. Creating Duotone and Monochrome Images in CorelDraw.
II	Design Creation	Structural design - Create fabric swatches, Handkerchief designs. Decorative design creation, Embroidery designs and Creation of stencil designs. Drawing in perspective.

III	Logo creation and develop printing designs	Labels – Style label, Size label. Logo–Brand logo, Style logo. Monograms. Transfer sticker designing, Developing screen for spot, all over border designs. Digital Fashion Portfolio Boards creation. (Story Board, Colour and Mood Board, Inspiration and Flat sketches board).
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### READING LISTS AND RESOURCES

**Compulsory**

1. COREL DRAW TRAININGGUIDE By Satish Jain/M.Geetha, 2018
2. Inside CorelDRAW! The Practical Guide to Computer-aided Graphic Design By Daniel Gray, 1991
3. Straight to the Point :Corel DRAW 12 By Firewall Media, 2010
4. CorelDRAW X6 The Official Guide By Gary David Bouton, 2012
5. Fashion Artist Drawing Techniques to Portfolio Presentation By Sandra Burke, 2003

**Highly Recommended, not Compulsory**

6. Fashion Computing Design Techniques and Cade by Sandra Burke, 2006
7. The CorelDRAW Wow! Book By Linnea Dayton, Shane Hunt, Sharon Steuer, 1999

**Good for Students who have Future Interests**

8. [https://www.coreldraw.com/static/cdgs/pdfs/dx4/CDTS\\_Case\\_Study\\_Lindex\\_EN\\_Letter.pdf](https://www.coreldraw.com/static/cdgs/pdfs/dx4/CDTS_Case_Study_Lindex_EN_Letter.pdf)
9. <https://www.coreldraw.com/en/pages/items/17700700.html>
10. <https://www.youtube.com/watch?v=fxjpHaBVEHM>

## SEMESTER – IV

### NON MAJOR ELECTIVE – II

#### PRINCIPLES OF MANAGEMENT

**Course Code:** 22UPTAD2N02

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 2:0:0

**Course Duration** : 30 Hours

**Credit:** 02

#### **Course Description:**

This course enables the students to learn about evolution of management theory, roles of managers. This course helps to know about basic principles and functions of management, leadership and human resource management.

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

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

S. No	Outcomes	Domains of Learning
CO1	Define various thoughts of management, Management process and system approaches of business	<b>Cognitive</b>
CO2	Compute Planning and Organizing strategies for various departments in an organization.	
CO3	Infer about leadership and communication flows in Management	
CO4	Interpret the various and modern methods of controlling functions of management.	
CO5	Outline the functions of Human Resource management and career development & modern management thoughts.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1				H	M	M	H	H	H		
CO2				H	M	M	H	H	H		
CO3				H	M	M	H	H	H		
CO4				H	M	L	H	H	H		
CO5				H	M	L	H	H	H		

Unit	Unit Title	Learning Chapters
I	Management Process	Management Definition, Administration. Management thoughts of FW Taylor, Henry Fayol, Abraham Maslow, Herzberg. Management Process, Systems approach of business.
II	Management Planning & Organizing	Planning - Process, Types, Objectives Planning levels –important of planning. Organizing – Organization chart. Organization Behaviors – DISC personality types – Dominance, Influence, Steadiness and Consciousness.

<b>III</b>	Leadership & Communication	Leadership – Types, Leader Vs Manager. Communication – flow of communication, types, directing.
<b>IV</b>	Functions of Controlling	Controlling – Meaning and definition controlling. Nature of control – Process of control, methods of control – modern methods.
<b>V</b>	Human Resource and Career Development	Human Resource management – recruitment, selection process, training methods, Career development – career stages. Modern management thoughts.

### READING LISTS AND RESOURCES

#### **Compulsory**

1. Principles of Management, P.C. Tripathi, P.V. Reddy, McGraw Hill Education, Jan 2012.
2. Principle of Management, M.Govindarajan & S.Natarajan, PHI Learning Private Learning., 2008.
3. Essentials of Management, H. Koontz, H. Weihrich, and Ramachandra Aryasri A., 9th Edition, Tata McGraw -Hill Publishing Company Ltd., 2006.

#### **Highly Recommended, not Compulsory**

4. Principles of Management, Tripathy PC & Reddy PN, Tata McGraw Hill, 5th Edition.
5. Principles and Practice of Management, R.S.Pillai & S.Kala, S.Chand Publication, 2013.
6. Principle of Management, R.N. Gupta, S. Chand & Company Ltd., 2008. B.Sc. fashion Apparel Mgt. -2018-19 onwards-colleges Annexure No:36D Page 7 of 36 Scaa dated: 11.06.2018
7. Principles of Management, Charles W.L. Hill, McGraw Hill Education, 1 July 2017.
8. Principles of Management, Charles W.L. Hill, Steven L. McShane, Tata McGraw-Hill Education Pvt. Ltd., 2007.
9. Principles and Practice of Management, L M Prasad, Sultan Chand & Sons, 9th Edition, 2016.

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

10. <https://www.easymnotes.in/principles-of-management/>
11. <https://www.toppr.com/guides/business-studies/principles-of-management/concept-of-principles-of-management/>
12. <https://www.iedunote.com/14-management-principles-henri-fayol>
13. <https://learn.saylor.org/course/view.php?id=88&sectionid=859>
14. [https://saylordotorg.github.io/text\\_small-business-management-in-the-21st-century/s16-01-principles-of-management-and-o.html](https://saylordotorg.github.io/text_small-business-management-in-the-21st-century/s16-01-principles-of-management-and-o.html)

**SEMESTER -IV**  
**QUALIFICATION PACK LEVEL – VI**  
**SKILL COMPONENT - V**  
**INDUSTRIAL ENGINEER (Ref.ID: AMH/Q2001)**

**Course Code:** 22UPTAD2S01

**Marks:** 100 Marks

**L:T:P** – 2:2:6

**Course Duration :** 150 Hours

**Credit:** 07

**Course Description:**

An Industrial Engineer is responsible for determining the most effective ways to create a product in sewing line. Their work includes analysis of the sewing method & process, machine and supervision of production floor to improve efficiency.

**Course Outcomes:**

By the end of this Course, Students will be able to

S. No	Outcomes	Domains of Learning
CO1	Carryout planning for sewing line in production floor based on production target.	Psychomotor & Cognitive
CO2	Analyse all the activities performed by operators and evaluate their performance in production floor	
CO3	Identify and troubleshoot the production problem for better production system	
CO4	Build managing data and completing the requisite documentation at each stage of operation.	
CO5	Comply with industrial regulation, organizational health and safety requirements at workplace and cover procedures to prevent, control and minimize risk.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	H	H	H			H
CO2		H		H	H		M	H	H		M
CO3	M	H		H	H			H			L
CO4				H	H	M		H			H
CO5		H		H	H			H	H		H

Unit	Learning Chapters ( <a href="http://sscamb.com/approvedOPNo.php">http://sscamb.com/approvedOPNo.php</a> )
I	Reference ID: AMH/N 2001 sewing Line Planning based on production target
II	Reference ID: AMH/N 2002 Supervise, analyses and evaluate performance on sewing floor
III	Reference ID: AMH/N 2003 Research and Resolve production problems to implement better production system
IV	Reference ID: AMH/N 2004 Manage data, forms and instructions for recording, evaluating and reporting quality and reliability data
V	Reference ID: AMH/N 0104 Comply with industry regulatory and organisational requirements Reference ID: AMH/N 1605 Maintaining a healthy, safe and secure working environment in the organisation

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Qualification Pack – Occupational Standard For Apparel, Madeup’s And Home Furnishing Sector
2. Qualification Pack –Industrial Engineering (IE) Executive (AMH/Q2001)

### **Highly Recommended, not Compulsory**

3. Strategic Supply Management: Principles, Theories and Practice by Paul Cousins, Richard Lamming, Published February 1st 2008 by Prentice Hall
4. Operations Management by Jay Heizer, Barry Render Published February 1st 2003 by Pearson (first published August 26th 1998) ISBN0131209744 (ISBN13: 9780131209749)
5. Designing And Managing The Supply Chain by David Simchi-Levi Published November 1st 2002 by McGraw-Hill Higher Education (first published 1999)
6. Original Title Designing and Managing the Supply Chain ISBN 0071214046 (ISBN13: 9780071214049)
7. Production Ergonomics by Cecilia Berlin, Caroline Adams - Ubiquity Press Ltd. , 2017

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

8. <http://sscammh.com/approvedQPNo.php>
9. Manufacturing Processes and Materials: Exercises by Miltiadis A. Boboulos – Book Boon , 2010

**SEMESTER – IV**  
**SKILL COMPONENT – VI**  
**PORTFOLIO – ADVANCED INDUSTRIAL ENGINEER**

**Course Code:** 22UPTAD2P03

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration :** 45 Hours

**Credit:** 02

**Course Description:**

The course will practically guide the students to professionally planning the production activities and endure the students to skillfully obtain the production outputs and increase the efficiency.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Recognize the welfare and safety concepts of operator.	Psychomotor
CO2	Develop General Sewing Data and its reports of garment production process	
CO3	Examine the production flow procedures in garment production floor.	
CO4	Prepare reports and manuscript the records in the production floor.	

Course Outcome <sup>s</sup> (CO)	Programme Specific Outcomes (PSOs)										
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO10	PSO11
CO1		H	M	M	H	L	M	H	L	M	
CO2		H	M	M	H	L	M	H	L	M	
CO3		H	M	M	H	L	M	H	L	M	M
CO4		H	M	M	H	L	M	H	L	M	M

Unit	Unit Title	Learning Chapters
I	Operator Welfare	Counseling Motivation Health and Safety, Ergonomics,
II	General Sewing Data	SAM – Actual & Buyer's SAM. Motion and Time Study – Value & Non-value Time, Lean concepts – 5s, Zero Defects.

III	Process Flow	Production Study, Layout Design, Special Attachments - Work aids and Folders. TIMWOOD, ECRS – Eliminate, Combine, Rearrange and Simplify. Plan Vs Actual Commitments
IV	Documentation	Management Information System, Production Line Plan, Production Efficiency, Costing – Batch & Operation

### READING LISTS AND RESOURCES

#### Compulsory

1. Management of Technology systems in Garment Industry, GordanaColovic, Woodhead Publishing, New Delhi, 2011.
2. Apparel Manufacturing Technology T. Karthik, P. Ganesan, D. Gopalakrishnan, 2016
3. Process Selection from Design to Manufacture by K. G. Swift, J. D. Booker, 2000

#### Highly Recommended, not Compulsory

4. Apparel International The Journal of the Clothing and Footwear Institute · Volume 28, 1997
5. Advances in Apparel Production, Catherine Fairhurst, Woodhead publications, Cambridge, UK, 2008.
6. Management of Technology Systems in Garment Industry GordanaColovic, 2011

#### Good for Students who have Future Interests

7. Sourcing Practices in the Apparel Industry, Marlon Lezama, Brain Webbar, Charles Dagher, The Commonwealth Secretariate, UK, 2004.
8. Apparel Manufacturing IV<sup>th</sup> Edition, Ruth E Glock, Grace I Kunz, Kindersley Publcatins, New Delhi, 2005.
9. Garment Manufacturing – Processes, practices and Technologies, Prasantha Sarkar, Mudranik Technologies Pvt Ltd, New Delhi, 2015.

**SEMESTER – IV**  
**SKILL COMPONENT – VII**  
**MINI PROJECT AND VIVA VOCE**

**Innovative Product/Process Development**

**Course Code:** 22UPTAD2M04

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

**Course Description:**

This course will guide the students to create innovative ideas. It also enables the students to professionally customize a product or sample using various kinds of machineries used in garment manufacturing industry.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Identify the problem to develop an innovative product	Psychomotor
CO2	Find a solution for the defined problem.	
CO3	Explain the uniqueness of the product developed	
CO4	Discuss the value proposition of the developed product	
CO5	Identify the market potential for scalability	
CO6	Calculate the economic aspects for commercialization	
CO7	Develop product addressing the sustainable development goals (SDG) on environment	
CO8	Prepare an effective documentation with photographs and video URL.	

Unit	Unit Title	Learning Chapters
I	Problem Identification	How to identify the right problem to develop innovative product development. Define the problem and its relevance to today's market/society/Industrial needs.
II	Solution Proposed/Idea	Apply various tools and techniques to propose solution to develop innovative product idea.
III	Uniqueness	Explain the uniqueness and distinctive features of the product How is the developed product idea different from the competitors, if any.
IV	Utility value/Value Proposition	Explain the key benefits of the innovation
V	Scalability	Highlight the market potential (market size, segment and target) aspects of the solution or the product
VI	Economic Sustainability	Emphasize the commercialization/business application aspects of the solution.
VII	Environment Sustainability	Highlight environmental friendliness aspects and the related benefits of the innovation.
VIII	Documentation	Prepare a detailed report of (unit-1-7), with high quality photographs and develop a video of the innovative product.

## SEMESTER – V

### CORE - X

#### INDUSTRIAL GARMENT COSTING

**Course Code:** 22UPTAD2C10

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 2:0:0

**Course Duration** : 30 Hours

**Credit:** 02

#### **Course Description:**

This course updates the students about the garment costing techniques available in the industry for charging the price estimation of the garment production in each and every operation like cutting, stitching, packing, shipping etc., also updates the students about the cost sheet preparation for different kinds of garments. As an entrepreneur they can use variety of pricing strategies in their 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	Generalize costing and its techniques for the various cost application methods.	<b>Cognitive</b>
CO2	Generalize cost sheet for various kinds of garment production and their uses.	
CO3	Analyze the Garment cost regarding the various Compositions and processes to manufacture the Garment.	
CO4	Categorize various pricing formula and pricing strategy levels in a garment export/import business.	
CO5	Formulate Standard allocate Minute using General Sewing Data for woven and knitted garments.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	H	H	H	M		H
CO2	H	H	H	H	H	H	H	H	M		H
CO3	H		H	H	H	M	H	H	M		H
CO4	H		H	H	H	M	H	H	M		H
CO5		H	M	H	H	M	H	H	M		H

Unit	Unit Title	Learning Chapters
I	Introduction to Costing	Costing: Introduction, Definition and Principles of costing. Terms associated with costing. Garment costing terminology. Classification of Costs - by nature, by functions, by traceability, by normality, by time and by process. Efficient Costing - Aims and Advantages.

<b>II</b>	Elements of Cost and Cost sheet	Elements of Costing - Material, Labour and Expenses - Direct & Indirect costs. General Operating Expenses. Cost Sheet: Meaning of cost sheet, Contents of Cost Sheet, Uses of Cost Sheet, Types of Cost Sheet and cost sheet preparation.
<b>III</b>	Garment Cost Estimation	Composition of Cost of Garment: Fabric, Parameters that affect the Fabric Cost - UOM, MOQ and Inco-term used, Cost Calculation of Fabric in a garment - Fabric consumption for woven fabric and Knits. Calculation for trims, CMT, Value Added Service. Cost Estimation for Production: Cutting, Stitching, Packing, shipping and Insurance.
<b>IV</b>	Pricing and Costing Strategies	Pricing Formula: Cost of Goods, Markup percentage, Wholesale and Retail differences. Price quote for garment export orders - Pre cost & Final costing. Price fixation methods - FOB, C&F, CIF, CM and CMT. Costing Strategies: Managerial Accounting, Direct Costing, Absorption Costing, Activity Based Costing. Costing Levels: Quick Costing, Costing for sale, Production costing, Accounting formalities.
<b>V</b>	GSD & SAM Calculation	Standard Allocate Minutes - SAM calculation using General Sewing Data. SMV Calculation. Prepare Cost Sheet using SAM for Woven (Shirt and Trouser) and Knit (T-shirt and Track suits).

### READING LISTS AND RESOURCES

#### Compulsory

1. A Textbook of Costing Principles, Norman spencer, East officer publisher,1986.
2. Costing for the Fashion Industry by Michael Jeffrey Nathalie Evans ,2011.
3. Cost Accounting byTulsian, Tata publisher McGraw-Hill Education, 2006.
4. Apparel Manufacturing Technology, By T. Karthik, P. Ganesan, Gopalakrishnan, CRC Press, 2016
5. Beyond Design: The Synergy of Apparel Product Development, Sandra Keiser , Myrna B.Garner A & C Black
6. Garment Manufacturing Technology edited byRajkishoreNayak, Rajiv Padhye

#### Highly Recommended, not Compulsory

7. Beyond Design: The Synergy of Apparel Product Development, Sandra Keiser , Myrna B.Garner A & C Black
8. Garment Manufacturing Technology edited byRajkishoreNayak, Rajiv Padhye
9. <https://www.businessmanagementideas.com/cost-accounting/costing-meaning-aims-and-methodscost-accounting/7265>
10. <https://www.toppr.com/guides/fundamentals-of-accounting/fundamentals-of-cost-accounting/elementsof-cost/>
11. <https://makersrow.com/search?q=cost+of+goods>

#### Good for Students who have Future Interests

12. <https://www.textileschool.com/181/garment-costing/>
13. <https://textilecalculation.blogspot.com/2014/11/calculation-of-garment-costing.html>
14. <https://www.textiletoday.com.bd/fashion-merchandising-garment-costing/>
15. <https://techpacker.com/blog/design/apparel-and-garment-costing/>
16. <https://apparelcareer.blogspot.com/2016/11/how-to-calculate-garment-costing-and.html>

## SEMESTER – V

### CORE - XI

#### LEAN MANAGEMENT

**Course Code:** 22UPTAD2C11

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 2:0:0

**Course Duration :** 30 Hours

**Credit:** 02

#### Course Description:

The Students gain insights about the importance of lean manufacturing and practices. It helps to improve the production, eliminate the non-value-added product and works towards customer's view.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Identify the basic tools used in the lean system	Cognitive
CO2	Discuss the lean Techniques used to eliminate the waste	
CO3	Compute the Lean Strategy for improving processes.	
CO4	Describe process production layout for improving quality systems.	
CO5	Differentiate the Lean Quality Systems and production uses in various field	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	M	H	M	L		L
CO2	H	H	H	H	H	M		H	L		L
CO3	H	H	H	H	H	M	M	H	L		L
CO4	H	H	H	H	H	M	H	H	L		L
CO5	H	H	H	H	H	H	M		L		L

Unit	Unit Title	Learning Chapters
I	Introduction of basic lean and lean concept	Lean – Meaning, Principles of Lean, Benefits of Lean, History of Lean. Lean thinking – Lean Metric – Toyota Production System, Lean manufacturing system, Value and waste – Definition , Value added and non-value added activity.
II	Lean tools and Techniques	Kaizen – GEMBA - 5'S system - Quick change over – TPM (Total Productive Maintenance). Kanban pull system - types of kan-ban-hijunka box JIDOCA Pillar – JIT - pillar
III	Lean Management System	Work & Waste- Seven Wastes in Lean and the impact of WIP. (Muda, Mura and Muri) - Value Stream Mapping-7 tools of quality-TPS(Toyota Production System)- Pull system- Push system-Continuous flow-Pull production -Levelling the production-SMV-(Standard minutes value)

<b>IV</b>	Lean in Manufacturing system	Production System – Various Types and PDCA tools used in production. Production Layout – Levels of layout - layout design - types of layout continuous - Quality improvement - Cause and Effect diagram - Flowchart and its types – Histogram - Kanban – Cellular Manufacturing – SMED.
<b>V</b>	Lean Quality Systems	Lean Organization - Toyota Production System - Critical to Quality and Value Stream Mapping: Critical to Quality (CTQ) –Supplier Input – Process Output – Customer (SIPOC) – SIPOC and Process Flow - Poka yoke. SWOT analysis - Case study presentations.

## READING LISTS AND RESOURCES

### **Compulsory**

1. Lean Management and Kaizen Fundamentals from Cases and Examples in Operations and Supply Chain Management By Marc Helmold · 2020
2. The Lean practitioners handbook, Mark Eaton, 2013, U.K. Womack, J. P., & Jones, D. T. (1997). Lean thinking—banish waste and create wealth in your corporation. Journal of the Operational Research Society, 48(11), 1148-1148.
3. Womack, James P. and Roos, Daniel T. (2003); Lean Thinking; Simon and Schuster, New York
4. Lean Manufacturing Implementation in Garment Industry 2013
5. Lean Tools in Apparel Manufacturing 2021
6. Lean Management Beyond Manufacturing Holistic Approach By Sanjay Bhasin · 2015

### **Highly Recommended, not Compulsory**

7. Forrest W. Breyfogle III, Implementing Six Sigma: Smarter Solutions Using Statistical Methods, 1999
8. Feld, W. M. (2000). Lean manufacturing: tools, techniques, and how to use them. CRC press.
9. James P. Womack, Daniel T. Jones, Lean Thinking, Free press business, 2003.
10. Forrest W. Breyfogle III, Implementing Six Sigma: Smarter solutions Using Statistical Methods, 1999.
11. Thomas Pyzdek, The Six Sigma Handbook, McGraw-Hill, 2000
12. Michael L. George, David Rowlands, Bill Kastle, What is Lean Six Sigma, McGraw-Hill, 2003
13. James P. Womack, Daniel T. Jones, Lean Thinking, Free press business, 2003.
14. Successfully Implementing Lean Six Sigma The Lean Six Sigma Deployment Roadmap By Keith Gardner · 2013
15. The Tactical Guide to Six Sigma Implementation By Suresh Patel · 2017

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

16. <https://tallyfy.com/guides/lean-six-sigma/>
17. <https://www.sixsigmadaily.com/how-to-implement-six-sigma-in-an-organization/>
18. <https://www.greycampus.com/blog/quality-management/dmaic-a-six-sigma-process-improvement-methodology>
19. <https://www.reliableplant.com/Read/30141/lean-six-sigma>

**SEMESTER – V****CORE – XIV****HAND AND MACHINE EMBROIDERY PRACTICAL****Course Code:** 22UPTAD2C12**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:1:2**Course Duration** : 45 Hours**Credit:** 02**Course Description:**

This course is designed for applicants who choose to work as a traditional embroider, tracing specialist, hand embroiderer, or as a self-employed entrepreneur.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Perform the different types of basic and decorative hand embroidery stitches in fabric.	<b>Psychomotor</b>
CO2	Execute the different types of embroidery stitches in fabric using machine.	
CO3	Combine the basic and decorative stitches in the fabrics for representing various traditions in India.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M	H	H	H	H	H	H	M	H	M	L
CO2	M	H	H	H	H	H	H	M	H	M	L
CO3	M	H	H	H	H	H	H	M	H	M	L

Unit	Unit Title	Learning Chapters
<b>I</b>	Basic & Decorative Stitches	<u>Prepare the samples by using the following Basic &amp; Decorative Stitches:-</u> Running Stitch, Chain Stitch, Stem Stitch, Button Hole, Seed stitch, Feather stitch, Fly stitch and Herring Bone, Satin Stitch, Lazy-daisy, French Knot, Bullion Knot, Cross Stitch, Satin Stitch, Chevron Stitch and Darning.
<b>II</b>	Machine embroidery stitch	Running stitch Hemming stitch - Slip stitch -Run and backstitch – Overcasting - Whipstitch-lasy daisy – spider stitch
<b>III</b>	Traditional Stitches	<u>Prepare the samples by using the following Traditional stitches:</u> Chikankari of Lucknow, Kasida of Kashmir, Phulkari of Punjab, Chamba Rumal of Himachal Pradesh, Kutch & Kathiawar of Gujarat, Kasutu of Karnataka, Lambadi Embroidery, Kantha of Bengal and Sujani of Bihar

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Embroidery Stitches – Mary Webb, 2006, China, Pages 28 – 34
2. Traditional Embroideries of India  
By Shailaja D. Naik, 1996
3. Learning the Traditional Art of Hand Embroidery  
By DueepJyot Singh, John Davidson, 2016
4. Ritu, Attractive Embroidery Designs, Indica Publishers, 1995.
5. Shailaja m. and Naik. D., Traditional Embroideries of India, KPH Publishing Corporation, 1996.
6. Treasury of Smocking Designs, Allyne S. Holland, New York, 1985.
7. Embroidery Stitches – Mary Webb, 2006, China, Pages 28 – 34
8. Indian Embroideries: Threads That Weave Together The Fabric Of India By Aditi Ray, 2017

### **Highly Recommended, not Compulsory**

9. How to Teach Yourself Cutwork Embroidery by DueepJyot Singh, John Davidson, 2017
10. Learning the Traditional Art of Hand Embroidery by DueepJyot Singh, John Davidson, 2016
11. Learning Patchwork - Traditional Patchwork Techniques By DueepJyot Singh, John Davidson, 2016
12. Learn to Quilt By DueepJyot Singh, John Davidson, 2016
13. Learning Decorative Stitches The Art of Shirring and Smocking By DueepJyot Singh, John Davidson, 2016

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

14. Traditional Embroidery of India Volume 2 By Kamala Sunderrao Kulkarni Dongerkery, 1963
15. Embroidery Traditional Designs, Techniques, and Patterns from All Over the World  
By Mary Gostelow, 1983
16. Design for Embroidery, from Traditional English Sources By Constance Howard, 1956
17. Modern Embroidery Series, MBD Publishers, 1995.
18. Kit Pynan and Carole, The Harmony Guide to Decorative Needle Craft, Lyric Books Ltd., 1982
19. [https://www.usha.com/sites/default/files/sewing\\_tutorials/machine-embroidery-book.pdf](https://www.usha.com/sites/default/files/sewing_tutorials/machine-embroidery-book.pdf)

**SEMESTER – V****CORE – XIV****FABRIC STRUCTURE ANALYSIS PRACTICAL****Course Code:** 22UPTAD2C13**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:1:2**Course Duration** : 45 Hours**Credit:** 02**Course Description:**

This course allows students to identify fabric structures, create design, draft and peg plan for various woven and knitted fabrics and develop a set of textile design skills by exploring various fabric structures and their applications.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Demonstrate the weave design, draft, and peg plan for woven fabrics.	<b>Psychomotor</b>
CO2	Determine ends per inch & picks per inch for basic woven fabrics.	
CO3	Built diagrammatic representation of knitted fabrics.	
CO4	Identify direction of the course and wales in the knitted fabrics.	
CO5	Discover the defects present in fabric surface and imply their remedies.	

Course Outcomes (COs)	Programme Specific Outcomes (PSO)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H		H	H	H	M	M	M	M		M
CO2	H		H	H	H	M	M	M	M		M
CO3	H		H	H	H	M	M	M	M		M
CO4	H		H	H	H	M	M	M	M		M
CO5	H		H	H	H	M	M	M	M		M

Unit	Unit Title	Learning Chapters
<b>I</b>	Woven Fabric Design Analysis of Basic Weaves	Analyse the given woven fabric swatches and furnish the following details. a) Design b) Draft c) Peg-plan d) EPI & PPI e) Warp and Weft Count f) Crimp Percentage g) GSM h) Twist direction. <b>Fabrics:</b> Plain and derivatives, Twill and derivatives, Satin and Sateen, Diamond, Honeycomb Weave, Mock leno.
<b>II</b>	Woven Fabric Design Analysis of Complex Weaves	Determine the given woven fabric swatches and furnish the following: a) Design b) Draft c) Peg-plan d) EPI & PPI e) Warp and Weft Count f) Crimp Percentage g) GSM h) Twist direction. <b>Fabrics:</b> Huck a back Weave, Crepe Weave, Double Cloth, Extra Warp and Weft Figuring

<b>III</b>	Knitted fabric Design Identification	Analyze the given knit fabric swatches and furnish the following details. a) Design Structure b) Loop Formation <b>Fabrics:</b> Plain knit, Rib knit, Interlock, Purl knit, Tricot, Raschel.
<b>IV</b>	Knitted fabric particulars	Identify the given knit fabric swatches and furnish the following details. a) Course direction b)Wales direction c) GSM <b>Fabrics:</b> Plain knit, Rib knit, Interlock, Purl knit, Tricot, Raschel.
<b>V</b>	Defect Identification	Defect Analysis for given fabrics (Weaving/Knitting/Processing defects) – Major and Minor defects occurred.
Laboratory Equipment: Pick Glass, Needle, Scissors, Measuring Tools (Steel Scale, Inch Tape), Weighing Balance, GSM cutter, Beesley's balance.		

### **READING LISTS AND RESOURCES**

#### **Compulsory**

1. Structure and Mechanics of Woven Fabrics by Jinlian Hu, 2004
2. Knitted Fabrics by John Chamberlain, James Henry Quilter, 1924
3. Corbmann B P , International students edition, Textiles – fibre to fabric, McGraw Hill book Co, Singapore, 1985
4. Watson's, Grosickli Z Newness, Butter worths, Advanced Textile Design London, 1989
5. Fabric Structure and Design by N. Gokarneshan, 2009
6. Woven Textile Structure Theory and Applications by BK Behera, P KHari, 2010
7. Structural Textile Design Interlacing and Interlooping by Syed Talha Ali Hamdani, Khubab Shaker, 2017
8. Watson's Textile Design and Colour, Vol.1, Grosicki Z. J., Wood head Publications, Cambridge England, 2004.
9. Principles of Fabric Formation by Prabir Kumar Banerjee, 2014
10. Fundamentals and Advances in Knitting Technology by Sadhan C.Ray, 2012

#### **Highly Recommended, not Compulsory**

11. Woven Fabric Structure Design and Product Planning by J. Hayavadana, 2016
12. Woven Textiles Principles, Technologies and Applications, 2012
13. Woven Textile Design by Jan Shenton, 2014
14. Fundamentals and Advances in Knitting Technology by Sadhan C.Ray, 2012
15. Textiles Technology by Julie Messenger, Helen Wilson, 2003
16. Warp Knitted Fabrics Construction by Yordan Kyosev, 2019
17. Knitting: Colour, structure and design Alison Ellen Crowood, 21-Dec-2013

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

18. Woven Textiles Principles, Technologies and Applications, 2012
19. Hand book of Weaving by Sabit Adanur, 2019
20. Fabric structure and design by Gokarneshan, D. N. New Age International (P) Ltd, New Delhi (2009).
21. Knitting Fundamentals, Machines, Structures And Developments by N. Anbumani, 2007.

**SEMESTER – V****CORE – XIV****GRAPHIC DESIGN PRACTICAL****Course Code:** 22UPTAD2C14**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:1:2**Course Duration** : 45 Hours**Credit:** 02**Course Description:**

Knowing the fundamentals of graphic design would allow the students to create excellent graphic design texture in just a few clicks. This subject will provide the students with some graphic design lessons and tips to develop exceptional graphic design styles. Understanding the fundamentals of graphic design and improving texture in design work can elevate students' work from mediocrity to greatness.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Develop Colour palate, Scanning, Layer and Mask in Graphic Design workspace.	<b>Psychomotor</b>
CO2	Create checks, prints and weave designs using different tools in Graphic Design.	
CO3	Modify 3-D images by changing the textures and apply into the flat sketches.	

Course Outcomes (CO)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1			H	M	H		H			M	H
CO2			H	M	H		H			M	H
CO3			H	M	H		H			M	H

Unit	Unit Title	Learning Chapters
<b>I</b>	<b>Workspace and its basics</b>	Graphic Design Software need for Fashion industry, Work Space Overview, Graphic Design Software Tool Palette, Short cut keys and uses. Preparing Files and Creating a color Palette Basics, Scanning and Aligning Fabrics, Use and Function in Design, Exercises on Layers, and Use mask in Graphic Design Software.
<b>II</b>	<b>Flat Sketches Designing</b>	Checks and Prints. Application of Weave designs to Flat Sketches.
<b>III</b>	<b>Texture Mapping</b>	Merging 3-D Images Modifying the textures. Digital Fashion Portfolio Creation for 5 basic Boards. (Story Board, Colour Board, Mood Board, Inspiration Board, Flat sketches board).

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Drawing for Graphic Design Understanding Conceptual Principles and Practical Techniques to Create Unique, Effective Design Solutions by Timothy Samara, 2012
2. Adobe Graphic Design Software CC Classroom in a Book (2019 Release) By Andrew Faulkner, Conrad Chavez, 2018

### **Highly recommended, not compulsory**

3. The Adobe Graphic Design Software CS4 Layers Book Harnessing Graphic Design Software's Most Powerful Tool by Richard Lynch, 2009

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

4. Creative Workshop 80 Challenges to Sharpen Your Design Skills, 2010

**SEMESTER – V****ELECTIVE – I****BOUTIQUE DESIGNER – I (WOMEN’S CLOTHING) PRACTICAL****Course Code:** 22UPTAD2E01**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:2:0**Course Duration** : 30 Hours**Credit:** 02**Course Description:**

The Course is structured to provide practical skills regarding to establish a boutique for women’s clothing. The Students gain knowledge for design women’s garments and develop patterns for construction. This will also help students to calculate the cost the respective garments with adequate profit.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Organize boutique with required standards and Recognize the customer needs.	<b>Psychomotor</b>
CO2	Develop the technical flat sketches of the designed garments using suitable body measurements.	
CO3	Develop the pattern blocks for the designed garments and predict the appropriate pattern layout.	
CO4	Construct the designed garments with required measurements	
CO5	Calibrate the cost calculation for the garment with adequate profit.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M		L	H	M	M	H	M	H	M	M
CO2	L	M	H	H	H	H	H	H	M	H	H
CO3	L	M	H	H	H	H	H	H	M	H	H
CO4	H	M	H	H	H	H	H	H	M	H	
CO5	H	M	H	H	H	H	H	H	M	H	H

Unit	Unit Exercises	Learning Chapters
I	<b>Customer profile</b>	Understand customer needs and create the customer persona
II	<b>Drawing for Inspiration</b>	Personal sketch
	<b>Drawing for Presentation</b>	Fashion sketches and float
	<b>Drawing for Specification</b>	Flats or technical sketch
III	<b>Body measurements</b>	Take correct body measurements and know the standard measurement chart.

	<b>Pattern Drafting</b>	<b>Suggested garments:</b> Salwar, Kameez, Skirt, Ladies pant, Western top Create a pattern for the given garment and its variation with different types of neck line, sleeves, placket, collar, yoke.
	<b>Pattern Layout</b>	Analyse different pattern layouts and place patterns to get fabric efficiency.
IV	<b>Sewing techniques for component parts</b>	Finishing technique - component parts for the given garments and give some variations in collar, sleeves, pocket, plackets, waistband and Hemlines.
	<b>Garment construction</b>	Create garments using different sewing techniques.
V	<b>Costing</b>	Estimate the cost calculation for the garment with adequate profit.

### READING LISTS AND RESOURCES

#### Compulsory

1. Garment Construction Complete Course on Making Clothing for Fit and Fashion By Peg Couch , 2011
2. The Complete Book of Sewing By Chris Jeffreys, DK Publishing, Inc, 2003
3. The New Complete Guide to Sewing Step-by-Step Techniques for Making Clothes and Home Accessories Updated Edition with All-New Projects and Simplicity Patterns By Editors of Reader's Digest, 2010
4. The Dressmaker's Companion A Practical Guide to Sewing Clothes By Elizabeth M. Haywood
5. The Dressmaker Complete Book on All Matters Connected with Sewing and Dressmaking from the Simplest Stitches to the Cutting, Making Altering, Mending and Caring for the ClothesByButterick Publishing Company, 1916
6. Metric Pattern Cutting for Women's Wear By Winifred Aldrich, 2015

#### Highly recommended, not compulsory

7. Clothing, Simplicity-economy for the High School Girl By Laura Irene Baldt, Helen D. Harkness, 1931
8. Sew Sweet Handmade Clothes for Girls22 Easy-to-Make Dresses, Skirts, Pants & Tops Girls Will Love By Yuki Araki, 2014
9. Carefree Clothes for Girls20 Patterns for Outdoor Frocks, Playdate Dresses, and More ByJunko Okawa, 2009
10. Modern Style for Girls Sew a Boutique Wardrobe By Mary Abreu, 2015
11. Clothing for Women; Selection, Design, ConstructionA Practical Manual for School and HomeBy Laura Irene Baldt, 1916
12. Pattern Cutting Techniques for Ladies' JacketsBy Jo Baker-Waters, 2016
13. Making Trousers for Men &Women A Multimedia Sewing Workshop By David Page Coffin, 2009
14. Making Trousers How to Achieve Great Results By David Page Coffin, 2009
15. The Shirtmaking WorkbookPattern, Design, and Construction Resources - More Than 100 Pattern Downloads for Collars, Cuffs & PlacketsBy David Page Coffin, 2015

#### Good for Students who have Future Interests

16. Making Working Women's CostumePatterns for Clothes from the Mid-15th to Mid-20th CenturiesBy Elizabeth Friendship, 2015
17. Laser Cutting for Fashion and TextilesBy Laura Berens Baker, 2016
18. Pattern Cutting for Women's Tailored JacketsClassic and ContemporaryBy Winifred Aldrich, 2002
19. <https://www.thesprucecrafts.com/techniques-for-sewing-clothing-2978471>
20. <https://study.com/academy/lesson/clothing-construction-terms-basics-methods.html>

**SEMESTER – V****ELECTIVE – I****BOUTIQUE DESIGNER – I (MEN’S CLOTHING) PRACTICAL****Course Code:** 22UPTAD2E02**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:2:0**Course Duration** : 30 Hours**Credit:** 02**Course Description:**

The Course is structured to provide practical skills regarding to establish a boutique for men’s clothing. The Students gain knowledge for design men’s garments and develop patterns for construction. This will also help students to calculate the cost the respective garments with adequate profit.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Organize boutique with required standards and Recognize the customer needs.	<b>Psychomotor</b>
CO2	Develop the technical flat sketches of the designed garments using suitable body measurements.	
CO3	Develop the pattern blocks for the designed garments and predict the appropriate pattern layout.	
CO4	Construct the designed garments with required measurements	
CO5	Calibrate the cost calculation for the garment with adequate profit.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M		L	H	M	M	H	M	H	M	M
CO2	L	M	H	H	H	H	H	H	M	H	H
CO3	L	M	H	H	H	H	H	H	M	H	H
CO4	H	M	H	H	H	H	H	H	M	H	
CO5	H	M	H	H	H	H	H	H	M	H	H

Unit	Unit Exercises	Learning Chapters
I	<b>Customer profile</b>	Understand customer needs and create the customer persona
II	<b>Drawing for Inspiration</b>	Personal sketch
	<b>Drawing for Presentation</b>	Fashion sketches and float
	<b>Drawing for Specification</b>	Flats or technical sketch
III	<b>Body measurements</b>	Take correct body measurements and know the standard measurement chart.

	<b>Pattern Drafting</b>	<b>Suggested garments:</b> Basic Shirt, Pant, T-shirt, Night Dress, Bermuda /shorts Create a pattern for the given garment and its variation with different types of collar, pocket, sleeves, cuffs, placket.
	<b>Pattern Layout</b>	Analyse different pattern layouts and place patterns to get fabric efficiency.
IV	<b>Sewing techniques for component parts</b>	Finishing technique - component parts for the given garments and give some variations in collar, sleeves, pocket, plackets, waistband and Hemlines.
	<b>Garment construction</b>	Create garments using different sewing techniques.
V	<b>Costing</b>	Estimate the cost calculation for the garment with adequate profit.

## READING LISTS AND RESOURCES

### Compulsory

1. Garment Construction A Complete Course on Making Clothing for Fit and Fashion By Peg Couch, 2011
2. The Complete Book of Sewing By Chris Jeffreys, DK Publishing, Inc, 2003  
The New Complete Guide to Sewing Step-by-Step Techniques for Making Clothes and Home
3. Accessories Updated Edition with All-New Projects and Simplicity Patterns By Editors of Reader's Digest, 2010
4. The Dressmaker's Companion A Practical Guide to Sewing Clothes By Elizabeth M. Haywood  
The Dressmaker Complete Book on All Matters Connected with Sewing and Dressmaking from the
5. Simplest Stitches to the Cutting, Making Altering, Mending and Caring for the Clothes By Butterick Publishing Company, 1916
6. Illustrated Guide to Sewing: Garment Construction A Complete Course on Making Clothing for Fit and fashion By Fox Chapel Publishing, Colleen Dorsey, 2011
7. Practical Pattern Making By Lucia Mors, Lucia Mors de Castro, Isabel Sánchez Hernández, 2015
8. Patternmaking For Fashion Design And DVD Package, 4/E (DVD) By Helen Joseph, 2008
9. Metric Pattern Cutting for Menswear By Winifred Aldrich, 2012
10. Menswear By John Hopkins, 2017

### Highly recommended, not compulsory

11. Pattern Cutting for Menswear By Gareth Kershaw, 2013
12. Patternmaking for Menswear Classic to Contemporary By Myoungok Kim, Injoo Kim, 2014
13. How to Make Men's Clothes By Jane Rhinehart, 1976
14. Making Trousers for Men & Women A Multimedia Sewing workshop By David Page Coffin, 2009
15. Making Trousers How to Achieve Great results By David Page Coffin, 2009
16. Sewing Shirts with a Perfect Fit The Ultimate Guide to Fit, Style, and Construction from Collared and Cuffed to Blouses and Tunics By David Page Coffin, 2018
17. The Shirt making Work book Pattern, Design, and Construction Resources - More Than 100 Pattern Downloads for Collars, Cuffs & Plackets By David Page Coffin, 2015

### Good for Students who have Future Interests

18. Laser Cutting for Fashion and Textiles By Laura Berens Baker, 2016
19. Pattern Cutting for Clothing Using CAD How to Use Lectra Modaris Pattern Cutting Software. By M Stott, 2012
20. <https://www.thesprucecrafts.com/techniques-for-sewing-clothing-2978471>

## SEMESTER – V

### ELECTIVE - I

#### ENTREPRENEURSHIP DEVELOPMENT - I

Course Code: 22UPTAD2E03

Marks: 100 Marks (Internal-25; External-75)

L:T:P – 2:0:0

Course Duration : 30 Hours

Credit: 02

#### Course Description:

Students are able to build an entrepreneurial way of thinking that helps them to recognize market opportunities that can be utilized in Market research. Market survey helps them to promote service with customer satisfaction

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Make use of Entrepreneurship career options, Competencies and National policies.	Cognitive
CO2	Predict the Entrepreneurial Eco System and Investment climate.	
CO3	Identify the Potential Market and Competitors to Improve selling in the current Market.	
CO4	Summarize the source of information into result to produce optimum success	
CO5	Recognizing long-term strategic planning in business models and Export Promotion	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	M	H	H	H	H	H	H	L	H
CO2		H	M	H	M	H	H	H	H	L	H
CO3		H	H	H	M	H	H	H	H	L	H
CO4		H	L	H	M	H	H	H	H	L	H
CO5		H	M	H	M	H	H	H	H	L	H

Unit	Unit Title	Learning Chapters
I	Entrepreneurship Career Options and Competencies	Entrepreneur – Definition, Characteristics, Factors Affecting Entrepreneurial Growth – Economic, Non-Economic Factors. Entrepreneurship Career Option – Concept of Cash flow quadrant, Needs of Entrepreneurship Career Option Entrepreneurial Competencies – Initiative, Opportunities, Persistence, Building Network Information, Problem Solving, Assertiveness, Persuasion, and skill set. Start – up development Process. Lean Startup Process; National Innovation and Startup Policy 2019. Amended Technology Up gradation Fund Scheme (ATUFS)

II	Entrepreneurial Eco system and Investment Climate	Entrepreneurial Ecosystem – Quantitative Indicators for Business Ranking, Isenberg’s Domains of Entrepreneurial Ecosystem – Policy, Finance, culture, supports, human capital, Markets. Business Environment and Investment Climate – Environmental Reforms – Business Registration, Tax Policies, Financial Access, Labor Laws and Administration, Regulatory Governance,
III	Market Survey and Analysis	Market Survey and Analysis: Potential Competitors Analysis, Potential Market Analysis, Customer Perception/Opinion, Level of Acceptance i) Price Determination ii) Acceptability Ecosystem, iii) Value Determination. Customer Satisfaction: Post sale service expectation, Parameters of satisfaction, Cost of Customer Satisfaction, Encountering the reason for poor selling. Product Improvement, Potential Market Places, Customer Perception. Customer feedback.
IV	Market Research and Survey	Market Research: i) Primary Database, ii) Secondary Database. Census Survey: Concept, Merits and Demerits. Descriptive and Inferential Statistics. Sample: Objectives, Data Collection, Sample Classification of Samples, Sample Investigation, Requisites of good Sample, Merits and Demerits. Questions: Type of Questions Census Vs Sampling. How to Use Market Research to Launch Your Clothing Line?
V	Business Opportunity	Business Opportunity: Business Opportunity Identification process, Business Model, Validating Data, Selection Process, BCG Growth share Matrix. SWOT analysis. Building Innovation Circle. Incentives and subsidies – Subsidized Services – Subsidy for market. Transport – seed capital assistance – Taxation benefit to SSI–role of Entrepreneur in export promotion and import substitution.

## READING LISTS AND RESOURCES

### Compulsory

1. Innovation Markets and Competition Analysis EU Competition Law and US Antitrust Law By Marcus Glader, 2006
2. Business and Competitive Analysis Effective Application of New and Classic Methods By Craig S. Fleisher, Babette E. Bensoussan, 2007
3. [https://www.researchgate.net/publication/314540021\\_Business\\_Ethics\\_in\\_Apparel\\_Manufacturing\\_A\\_Literature\\_Review](https://www.researchgate.net/publication/314540021_Business_Ethics_in_Apparel_Manufacturing_A_Literature_Review)

### Highly Recommended, not Compulsory

4. Desai, Vasant (2003). Small-Scale Industries and Entrepreneurship. Himalaya Publishing House, Delhi.
5. Kaulgud, Aruna (2003). Entrepreneurship Management. Vikas Publishing House, Delhi.
6. Cynthia, L. Greene (2004). Entrepreneurship Ideas in Action. Thomson Asia Pvt. Ltd. Singapore.
7. David, Otes (2004). A Guide to Entrepreneurship. Jaico Books Publishing House, Delhi.
8. [http://www.emuni.si/Files/knjiznica/78\\_ECEntrepreneurship-in-Higher-Education-2008.pdf](http://www.emuni.si/Files/knjiznica/78_ECEntrepreneurship-in-Higher-Education-2008.pdf)

### Good for Students who have Future Interests

9. <http://www.lexology.com/library/detail.aspx?g=6c596a24-e79b-4d39-a73f-9837529d9a78> on 18th Oct, 2014
10. <http://antwerpsex.wordpress.com/2013/09/03/fashion-101-intellectual-property-laws/> on 16th Oct, 2014
11. WIPO Magazine/May-June 2005
12. <http://www.businessoffashion.com/2011/07/fashions-intellectual-property-conundrum.html> on 18th Oct, 2014
13. <http://www.businessoffashion.com/2011/07/fashions-intellectual-property-conundrum.html> as viewed on 20th October, 2014
14. <https://antwerpsex.wordpress.com/2013/09/03/fashion-101-intellectual-property-laws/>
15. <http://www.fashionenterprise.com/files/2010/09/CFECopyrightDownload1.pdf> on 16th Oct, 2014

**SEMESTER – V****ELECTIVE - I****MERCHANDISING AND MARKETING - I****Course Code:** 22UPTAD2E04**Marks:** 100 Marks (Internal-25; External-75)**L:T:P** – 2:0:0**Course Duration** : 30 Hours**Credit:** 02**Course Description:**

Students are able to build an entrepreneurial way of thinking that helps them to recognize market opportunities that can be utilized in Market research. Market survey helps them to promote service with customer satisfaction

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Recognize the Basics of Apparel Merchandising and its process	<b>Cognitive</b>
CO2	Predict the coordination parameters with design team and the Procedure protocol for Size set approval	
CO3	Discover the Potential Market, Communication System and Marketing Management Process	
CO4	Summarize the source of information into the market approaches and Market Segmentations	
CO5	Distinguish strategic planning in product planning models in various business ideas.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1			H	M	M	H	H	M	M	M	L
CO2			H	M	M	H	H	M	M	M	L
CO3			M	M	M	M	M	M	L	L	L
CO4				H	M		M	M	H		M
CO5			M	M	M	M	M	M	L	L	L

Unit	Unit Title	Learning Chapters
I	Basics of Apparel Merchandising, Marketing Basics	Introduction, Functions and role of Merchandiser, Merchandising Process, Meaning and Need for quality control in Merchandising process. Sales Vs Marketing, Effective Branding & Advertisement techniques. Basics of Digital Marketing, Traditional Vs Digital marketing, Analysis & Keyword research, Search Engine Optimisation (SEO), Search Engine Marketing (SEM), Social Media Optimisation (SMO), Social Media Marketing (SMM), Basics of website, On-page optimisation, off- page optimization.

II	Prototype	<p>Preparation, coordination and confirmation Prototype checked with design team and sent to buyer for approval and accordingly changes done if any and confirmed for production. Size sets approved internally.</p> <p>P.O (Purchase Order) &amp; P.I (Performa Invoice) - Procedure and Method of raise and receive P.O (Purchase Order) &amp; P.I (Performa Invoice) after confirmation on the costing to buyer and vendor.</p>
III	Concept of Marketing Market	<p>Marketing Definition, Nature, Scope And Importance Of Marketing, Functions Of Marketing, Marketing Management, Marketing Process, Marketing Tasks</p> <p>Scope Of Marketing, Marketing Communication System</p> <p>Holistic Concept, Difference Between Selling And Marketing,4ps 7 Ps Of Marketing.</p>
IV	Marketing ideas	<p>Indian Market &amp; Its Environment-Market Segmentation, Targeting, Positioning Levels of Market Segmentations, Patterns, Procedures, Classification Product-Mix, Product Life Cycle Strategies, Product Diffusion Process, concept of a Product - Product Decisions - Product mix decisions – Brand, Brand Decision - New Product Development – Sources of New Product idea - Steps in Product Development - Product Life Cycle strategies- Stages in Product Life Cycle.</p>
V	Management concept/General Practical	<p>Identification of market, Market Segmentation, STP Approach Market Information System, (MIS) Market Research Consumer Behaviour Demand Forecasting. Sample Case studies for each topics with Mock tests &amp; interviews, Confidence &amp; Skill improvement classes</p>

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Apparel Merchandising, Robin Mathew, Book Enclave Publishers, Jaipur, 2008.
2. Inside the Fashion Business, McMillan Publishing Co, 7th Edition, 2004
3. Fashion Merchandising, Elian Stone, McGraw-Hill Publication, 2004.
4. Marketing – R S N Pillai and Bhagavathi, Published by S Chand and company ltd, New Delhi, 1987.
5. Fashion Business, Dr. K. Prabha Kumari & D. Anita Rachel, Abhishek Publications. ISBN: 978-81-8247-68-4, 2018.
6. Marketing Management, Dr B K Chatterjee Jaico, Juice Publishing house, Bombay 1982. Principles of Marketing, Backman T N, Munard H H and Davidson W R , Ronald Press Company, New York, 1970.

### **Highly recommended, not compulsory**

7. Apparel Merchandising, An integrated Approach, Krishna kumar, M, Abishek Publications, 2010.
8. Apparel Merchandising, Jerry A & Rosenau, Fairchild Publications, London, 2007.
9. Marketing Principles and methods, Philip C F and Duncon, Irwin Publications,

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

10. Apparel Production Management, Dr.K. Prabha Kumari & D. Anita Rachel, Karangal Publication, ISBN:978-81-93623-99-2, 2018.

**SEMESTER – V****SKILL COMPONENT – VI****PORTFOLIO SOURCING TECHNIQUES - I****Course Code:** 22UPTAD2P05**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:1:2**Course Duration** : 45 Hours**Credit:** 02**Course Description:**

This course is designed for procurement of fabrics, trims & accessories as per requirements received from merchandiser. The students are able to supervise the functionary of purchase departments concerned with identifying suitable suppliers for materials assessed on the basis of price, quality, reliability, time and long term business relations.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Analyze the various types of Garments, Fabric, Accessories and Trims	<b>Psychomotor</b>
CO2	Execute the different types of vendor evaluation and selection as per required criteria.	
CO3	Evaluate the supplier as per their Capability and ranking parameters.	
CO4	Carry out the records and documents about sourcing and future reference.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	M	H	H	M	M	L
CO2			L	H	L	M	M	L	H	L	
CO3			L	H	L	M	M	L	H	L	M
CO4		L	L	H	L	M	M	L	H	L	M

Unit	Unit Title	Learning Chapters
<b>I</b>	Sourcing Needs	<ul style="list-style-type: none"> <li>• Various types of Garments – Men’s, Women’s and Kid’s.</li> <li>• Fabrics – Various Types &amp; Swatches</li> <li>• Accessories &amp; Trims – Reliable, Non-reliable &amp; Swatches.</li> <li>• Required materials for designed garment and made ups</li> <li>• Plan the materials procurement as per the customer requirements</li> </ul>
<b>II</b>	Vendor Selection	<ul style="list-style-type: none"> <li>• National and International Market,</li> <li>• Lead Time - Standard Lead time</li> <li>• Currency values,</li> <li>• Negotiation,</li> <li>• Competitive Price,</li> <li>• Price Quote</li> </ul>

<b>III</b>	Supplier Evaluation	<ul style="list-style-type: none"> <li>• Vendor identification,</li> <li>• Supplier Capability</li> <li>• Vendor Ranking – Quality, Quantity, Delivery, Price</li> <li>• SCM Process</li> </ul>
<b>IV</b>	Sourcing Documents	<ul style="list-style-type: none"> <li>• Foreign sourcing - Factors</li> <li>• Quality parameters on received materials.</li> <li>• Defects Identification on fabrics, Accessories &amp; Trims</li> <li>• Purchase Quote for materials, Accessories &amp; Trims</li> <li>• Costing Reports and sheets</li> <li>• Packing List/input.</li> </ul>

## READING LISTS AND RESOURCES

### **Compulsory**

1. Goworek, H. (2007), Fashion Buying, 2nd Edition, Blackwell Publishing, Oxford.
2. Jackson, T. and Shaw, D. (2000), Mastering Fashion Buying and Merchandising Management, Palgrave Macmillan, London.
3. Hines, T. and Bruce, M. (2001), Fashion Marketing: Contemporary Issues, Butterworth-Heinemann, Oxford.
4. Mintel Reports: Value Clothing Retailing (May 2005); Clothing Retailing (July 2005); Keynote Reports: Clothing Manufacturing (May 2006);
5. Clothing and Footwear Industry (March 2006).

### **Highly Recommended, not Compulsory**

6. Baker, M.J. and Hart, S. (2007), Product Strategy and Management, 2nd Edition, FT Prentice Hall, London.
7. Cravens, D.W. and Piercy, N. (2005), Strategic Marketing, 9th Edition, McGraw-Hill, London.
8. Nagle, T.T. and Hogan, J.E. (2007), The Strategy and Tactics of Pricing: A Guide to Growing More Profitably, 4th Edition, Pearson Education, London.

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

9. Marciniak, R. and Willans, J.R. (2008), Fashion Retailing, Blackwell, London.

**SEMESTER – V**  
**SKILL COMPONENT – VII**  
**MINI PROJECT AND VIVA VOCE**

**Innovative Product/Process Development**

**Course Code:** 22UPTAD2M05

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

**Course Description:**

This course will guide the students to create innovative ideas. It also enables the students to professionally customize a product or sample using various kinds of machineries used in garment manufacturing industry.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Identify the problem to develop an innovative product	Psychomotor
CO2	Find a solution for the defined problem.	
CO3	Explain the uniqueness of the product developed	
CO4	Discuss the value proposition of the developed product	
CO5	Identify the market potential for scalability	
CO6	Calculate the economic aspects for commercialization	
CO7	Develop product addressing the sustainable development goals (SDG) on environment	
CO8	Prepare an effective documentation with photographs and video URL.	

Unit	Unit Title	Learning Chapters
I	Problem Identification	How to identify the right problem to develop innovative product development. Define the problem and its relevance to today's market/society/Industrial needs.
II	Solution Proposed/Idea	Apply various tools and techniques to propose solution to develop innovative product idea.
III	Uniqueness	Explain the uniqueness and distinctive features of the product How is the developed product idea different from the competitors, if any.
IV	Utility value/Value Proposition	Explain the key benefits of the innovation
V	Scalability	Highlight the market potential (market size, segment and target) aspects of the solution or the product
VI	Economic Sustainability	Emphasize the commercialization/business application aspects of the solution.
VII	Environment Sustainability	Highlight environmental friendliness aspects and the related benefits of the innovation.
VIII	Documentation	Prepare a detailed report of (unit-1-7), with high quality photographs and develop a video of the innovative product.

## SEMESTER – VI

### CORE - XV

#### SUSTAINABLE APPAREL PRODUCTION

Course Code: 22UPTAD2C15

Marks: 100 Marks (Internal-25; External-75)

L:T:P – 1:0:2

Course Duration : 45 Hours

Credit: 02

#### Course Description:

This course expedites the students to gain knowledge towards the Sustainable measures, processes and certification in the textiles and apparel industries. Updated facts towards this make the students to explore more in these industries.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Summarize the concepts of environmental and social sustainability and its impacts over Textile sector. Generalize consumer behavior and influence in sustainable living.	Cognitive
CO2	Explain Carbon foot prints of different fibres, its causes and methods to reduce Carbon foot prints in sustainable apparel production.	
CO3	Describe sustainable materials, various sustainable design strategies, and its challenges in implementing apparel production.	
CO4	Outline the solutions for sustainable process, sourcing and production	
CO5	Interpret sustainable standards and certificates for textile sector.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M		M	H	H	H	H	M	H	L	H
CO2	H		M	H	L	H		H	H	M	H
CO3	M		M	H	H	H	H	M	H	L	H
CO4	H		H	M	M	H		H	H	M	H
CO5	M		M	H	H	H	H	M	H	L	H

Unit	Unit Title	Learning Chapters
I	Sustainability	Definition, Types & Pillars of sustainability, Purpose of sustainability, Primary Goals of Sustainability. Sustainable system: Environmental, Economic and Social sustainability. Textiles, Clothing and Green supply chain management (GSCM). Product - Life cycle assessment (LCA). Role & requirement of sustainability manager / in charge - Consumer behaviour in sustainable living The Consumer Behaviour Influence –Attitude, Knowledge and Behaviour Gap – Three theories behaviour – Forms of Sustainable Consumption Behaviour– Impacts of sustainability over industries – positive & Negative Impacts.

<p style="text-align: center;"><b>II</b></p>	<p style="text-align: center;">Sustainable Designs for Apparel</p>	<p>What is Green House Gas? List the Types and Sources of Greenhouse gas. Define Global warming potential and Carbon footprint. Global Carbon Footprint and its effects, Carbon footprint of various textile processes, Carbon footprint of natural fibres and their products: Carbon footprint of Cotton fibre products, Carbon footprint of white long shirt, Carbon footprint of wool, jute, linen. Carbon footprint of Synthetic fibres and their products: Regenerated fibres and PP shopping bags. Methods to reduce carbon footprint - 3R's Reuse / Reduce / Recycle.</p>
<p style="text-align: center;"><b>III</b></p>	<p style="text-align: center;">Sustainable Designs for Apparel</p>	<p>Sustainable Materials: Smart materials (e.g.) Pinnatex, Biodegradable, reuse, Organic, Recycled /Upcycled/down cycled, Deadstock, Compare different eco-friendly materials. Design for waste minimization/ Zero waste, Design for disassembly (DfD), Design for Slower Consumption/Longevity, Design for Social Well-being, Design for User Participation (Co-Design), Design for Product/Service System (PSS), Design for End-of-Life (EoL) Strategies, Challenges in implementing sustainable design strategies, Essential design aspects for expanding clothing life spans and Existing Sustainable Design Practices in the Fashion Industry: Case Studies.</p>
<p style="text-align: center;"><b>IV</b></p>	<p style="text-align: center;">Sustainable Processes, Sourcing and Production</p>	<p>Sustainable Processes: Waterless dyeing, 3D printing, Natural Dyeing, Printing (ink types). Advantages of Spin-dyeing compared to conventional dyeing, Sustainable coloration like Enzymatic synthesis and plasma pre-treatment. Sustainable Sourcing: Criteria for evaluating and selecting sustainable suppliers. Sustainable Production: Adopting Resource efficiency and Cleaner Production strategy in apparel manufacturing: Dematerializing products, Increasing process efficiency (Reducing operational cost and process waste through lean manufacturing), minimizing process emissions (Minimizing Air pollution) switching to low carbon inputs (Use of Renewable energy and energy saving) Closing the carbon loop (Recycling hard waste) Recyclability: Recycling possibilities for End of life products (EOL)</p>

V	Sustainable Standards and Certification	Social sustainable practices in Apparel industry: Aspects of 1) Labor practices and decent work,2) Human rights, 3) Society, 4) Product responsibility in Apparel industry. Sustainable Standards and Certification Holistic: Remake, Eco stylist, B. Corporation, Sustainable Apparel Coalition, The Higg Index. Fibre Standards: Global Organic Textiles Standard (GOTS), Fair trade Certified Cotton, Better Cotton Initiative (BCI), Cotton Made in Africa (CMiA), Global Recycle Standard, Organic Content Standard, Responsible Wool Standard Chemical Control: Oeko-Tex 100, Bluesign Labor rights and working conditions: SA8000 Standard, Fair trade Textile Standard, WRAP, Ethical Trading Initiative, The Social Accountability Accreditation Services (SAAS), Fair Wear Foundation Circular Standards: Cradle to Cradle Fair Trade: Fair trade Certified Textiles, Fair trade Certified Cotton, Fair Trade USA, World Fair Trade Organization (WFTO) Guarantee System. Vegan: PETA Approved Vegan
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## READING LISTS AND RESOURCES

### Compulsory

1. A Textbook of Costing Principles, Norman spencer, East officer publisher,1986.
2. Costing for the Fashion Industry by Michael Jeffrey Nathalie Evans ,2011.
3. Cost Accounting byTulsian, Tata publisher McGraw-Hill Education, 2006.
4. Apparel Manufacturing Technology, By T. Karthik, P. Ganesan, Gopalakrishnan, CRC Press, 2016
5. Beyond Design: The Synergy of Apparel Product Development, Sandra Keiser , Myrna B.Garner A & C Black
6. Garment Manufacturing Technology edited byRajkishoreNayak, Rajiv Padhye

### Highly Recommended, not Compulsory

7. Beyond Design: The Synergy of Apparel Product Development, Sandra Keiser , Myrna B.Garner A & C Black
8. Garment Manufacturing Technology edited byRajkishoreNayak, Rajiv Padhye
9. <https://www.businessmanagementideas.com/cost-accounting/costing-meaning-aims-and-methodscost->
10. <https://www.toppr.com/guides/fundamentals-of-accounting/fundamentals-of-cost-accounting/elementsof-cost/>
11. <https://makersrow.com/search?q=cost+of+goods>

### Good for Students who have Future Interests

12. <https://www.textileschool.com/181/garment-costing/>
13. <https://textilecalculation.blogspot.com/2014/11/calculation-of-garment-costing.html>
14. <https://www.textiletoday.com.bd/fashion-merchandising-garment-costing/>
15. <https://techpacker.com/blog/design/apparel-and-garment-costing/>

## SEMESTER – VI

### CORE - XVI

#### DESIGN THINKING FOR INNOVATION

Course Code: 22UPTAD2C16

Marks: 100 Marks (Internal-25; External-75)

L:T:P – 2:0:0

Course Duration : 30 Hours

Credit: 02

#### Course Description:

This course enables the Students to learn about design thinking and hence resolve the problem by innovate the new design strategies which encountered. It also describes the variety of approaches and concepts within the design thinking discipline. This encourages the students to construct various prototypes for different end uses and to lead project management in entrepreneurship.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Discuss the basics of Design thinking context.	Cognitive
CO2	Describe the variety of design thinking concepts and mindset process and principles.	
CO3	Determine the design thinking tools to be applied in solving problems.	
CO4	Practice the appropriate strategies of design and its applications of product development.	
CO5	Explore the new idea and solutions for entrepreneurial business model.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1		L	H	M	L	M	H	M	M	L	
CO2		L	H	H	M	M	H	M	L	L	
CO3		L	H	M	L	M	H	M		L	
CO4		L	H	H	M	M	H	M	L	L	
CO5		L	H	H	M	M	H	M	M	L	

Unit	Unit Title	Learning Chapters
I	Design thinking context	Definition and Difference between Thinking, Innovation, Invention, Creativity and modernization. Design Thinking – Origin, Need, Philosophy and Rules – Human, Ambiguity, Re-design and Tangibility Rule. Principles – Various Resources – people, place, material and organizational fit. Features and Uses of Design Thinking.

<b>II</b>	Design thinking concepts and mindset	Fundamental Concepts in Design Thinking – Solution based and Problem focused, Scientific method and Iterative approach, Analysis and synthesis, Empathize, Divergent Thinking, Convergent Thinking, Visual Thinking – Brainstorming, Flash cards, Flow charts and other elements. Design Thinking mindset – Process and principles.
<b>III</b>	Design thinking tools and procedure	Design thinking tools and methods – toolbox – purposeful use of tools and alignment with process stages – what is, what if, what wows and what works. Design thinking process procedures – numerous approaches, double diamond process, 5- Stage school process and designing for growth process.
<b>IV</b>	Design thinking performance	Strategy and design – ten practices of strategy design – projecting – prototyping –Evaluation – experimenting – routinizing – mobilizing – realizing –connecting – scaling – Curating. Design Thinking application – role of product development and project management.
<b>V</b>	Design thinking for entrepreneurship	POV – Explore new ideas and shape own brand. Design thinking for revolutionizing business model – initiation, ideation, integration and Implementation. Entrepreneurial design management.

## READING LISTS AND RESOURCES

### Compulsory

1. Design Thinking for Innovation: Research and Practice books Walter Brenner, Falk Uebernickel, 2016
2. Design Thinking for Strategic Innovation: What They Can't books Idris Mootee, 2013
3. Design Thinking: New Product Development Essentials from the books Michael G. Luchs, Scott Swan, Abbie Griffin, 2015
4. Textiles, Identity, and Innovation: Design the Future: books Gianni Montagna, Cristina Carvalho, 2018

### Highly Recommended, not Compulsory

5. Engineering Textiles: Integrating the Design and Manufacture books Yehia E. Elmogahzy, 2019
6. Creative Workshop: 80 Challenges to Sharpen Your Design Skills books David Sherwin, 2010
7. Design Thinking for the Greater Good Innovation in the Social Sector by Jeanne Liedtka, Randy Salzman, Daisy Azer, 2017

### Good for Students who have Future Interests

16. <https://tallyfy.com/guides/lean-six-sigma/>
17. <https://www.sixsigmadaily.com/how-to-implement-six-sigma-in-an-organization/>
18. <https://www.greycampus.com/blog/quality-management/dmaic-a-six-sigma-process-improvement-methodology>
19. <https://www.reliableplant.com/Read/30141/lean-six-sigma>

## SEMESTER – VI

### CORE – XVII

#### FASHION PORTFOLIO PRACTICAL

Course Code: 22UPTAD2C17

Marks: 100 Marks (Internal-40; External-60)

L:T:P – 0:1:2

Course Duration : 45 Hours

Credit: 02

#### Course Description:

This course is designed for applicants who choose to work as a traditional embroider, tracing specialist, hand embroiderer, or as a self-employed entrepreneur.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Ideate themes for Designing portfolio appropriate for different seasons or Occasion.	Psychomotor
CO2	Build various boards necessary for fashion portfolio.	
CO3	Develop the design by Garment Construction.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	H	H	M	M	M	H
CO2	H	H	H	H	H	H	H	M	M	M	H
CO3	H	H	H	H	H	H	H	M	M	M	H

Unit	Unit Title	Learning Chapters
I	Planning Seasons and Occasion	The ideology of how to create a Fashion portfolio, planned for a season or occasion.
II	Preparation of boards	<ul style="list-style-type: none"><li>• Inspirational/ Theme Board</li><li>• Designer Profile</li><li>• Customer profile</li><li>• Mood/Concept page</li><li>• Colour Presentation Page</li><li>• Textile Presentation Page</li><li>• Flat drawing</li><li>• Fabric Swatch</li><li>• 3D wear garment</li><li>• Measurement Chart</li></ul>
III	Final presentation	<ul style="list-style-type: none"><li>• Number of garments in a collection 1-2 garments.</li></ul>

**Compulsory**

1. Fashion Design Course Principles, Practice and Techniques: The Ultimate Guide for Aspiring Fashion Designers By Steven Faerm, 2010
2. The Academic Portfolio: A Practical Guide to Documenting V Peter Seldin, J. Elizabeth Miller, 2010
3. Fashion Portfolio Design and Presentation by Anna Kiper, 2016
4. Colour Forecasting for Fashion by Kate Scully, Debra Johnston Cobb, 2012

**Highly Recommended, not Compulsory**

5. Portfolio for Fashion Designers By Kathryn Hagen, Julie Hollinger, 2012
6. Design Your Fashion Portfolio By Steven Faerm, 2012

**Good for Students who have Future Interests**

7. Portfolio Presentation for Fashion Designers By Linda Tain, 2018

## SEMESTER – VI

### CORE - XVIII

#### SIX SIGMA

Course Code: 22UPTAD2C18

Marks: 100 Marks (Internal-25; External-75)

L:T:P – 2:0:0

Course Duration : 30 Hours

Credit: 02

#### Course Description:

This course enables the students to learn about six sigma concepts and problem-solving technique which help to improve the production, eliminate the defects and maintain to the quality in the apparel industry.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Identify six sigma techniques, DMAIC and its define phase.	Cognitive
CO2	Discuss the data collection strategies, measuring system, mapping and process capabilities using measuring phases.	
CO3	Practice the defect identification techniques and control impacts	
CO4	Compute the solution parameters of hidden problems in garment production area by using improve phase.	
CO5	Outline solution for sustain the process in Six Sigma tool and techniques using control phase.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1		H	H	H	H	M	M	H	L		L
CO2		H	H	H	H	M	M	H	L		L
CO3		H	H	H	H	M	M	H	L		L
CO4		H	H	H	H	M	M	H	L		L
CO5		H	H	H	H	M	M	H	L		L

Unit	Unit Title	Learning Chapters
I	Six Sigma process	Fundamentals of six sigma - How six sigma work? Six Sigma Process, Hidden Factory, History of six sigma and six sigma DMAIC improvement process techniques.
II	Define phase	<b>Define phase:</b> Capturing voice of customer, Voice of customer methods, Kano analysis, CTQ Drilldown, Six sigma project Charter, change acceleration process (CAP), Process mapping (SIPOC), Flowcharting
III	Measure Phase	<b>Measure Phase:</b> Data collection strategy-sampling methods, sampling Bias, Measurement System, Process capability. 3Cs & 5 Why.
IV	Analysis and Improve Phase	<b>Analysis Phase:</b> As is in process mapping, Data door analysis, Cause & Effect Diagram- Root Cause Analysis (RCA)/ Fish Bone Diagram / Ishikawa Diagram. Control Impact. Why Analysis, Hypothesis, Analysis Example.

		<b>Improve Phase:</b> Solution parameter, Generate possible Solution, Conduct cost benefit analysis, Failure mode effect analysis (FMEA), Pilot solution implement, Validate measurement system, New process capability mapping.
<b>V</b>	<b>Control Phase</b>	Statistical process control, Leading indicator vs. Lagging indicator, Control chart selection, Risk assessment & Mistake proofs – Poka-yoke- Case Study

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Betsiharris Ehrlich, —Transactional Six Sigma and Lean Servicingl, St. Lucia Press, 2002.
2. Donald W Benbow and Kubiak T M, —Certified Six Sigma Black Belt Handbookl, Pearson Education, 2007.
3. Jay Arthur, —Lean Six Sigma – Demystifiedl, Tata McGraw Hill Companies Inc, 2007.
4. James Evans and William Lindsay, —An Introduction to Six Sigma and Process Improvementl, South-Western College, 2014

### **Highly Recommended, not Compulsory**

5. Paul Keller, —Six Sigma Demystifiedl, McGraw-Hill Education, 2011.
6. Howard S. Gitlow, Richard Melnyck and David M. Levine —A Guide

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

7. Sustainability: Utilizing Lean Six Sigma Techniquesbooks Tina Agustiady, Adedeji B. Badiru · 2012
8. Lean Six Sigma in Service: Applications and Case Sandra L. Furterer · 2016

## SEMESTER – VI

### CORE –XIX

#### COMPUTERIZED PATTERN MAKING PRACTICAL

Course Code: 22UPTAD2C19

Marks: 100 Marks (Internal-40; External-60)

L:T:P – 0:1:2

Course Duration : 45 Hours

Credit: 02

#### Course Description:

Pattern Making Software is used by many garment designers to create elaborate computerized patterns, its grading and marker making which is the key requirement in the garment manufacturing unit. By the completion of this course students will be well skilled in the CAD which enhances their career development.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Create basic pattern bodice for selective kids, women's and men's wear.	Psychomotor
CO2	Customize the different sizes of grade patterns for created kids, women's and men's wear.	
CO3	Build marker planning for created kids, women's and men's wear.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1			H	H	H		H	H	M		H
CO2			H	H	H		H	H	M		H
CO3			H	H	H		H	H	M		H

Unit	Unit Title	Learning Chapters
I	Pattern Preparation	Prepare pattern for ➤ Yoke frock ➤ Baba suit ➤ Summer frock ➤ Salwar kameez ➤ Tops ➤ Princess line dress ➤ Slack shirt ➤ Full sleeve shirt ➤ Pleated trouser ➤ T-Shirt ➤ Night suits
II	Pattern grading	Grading the Prepared patterns into desired sizes.
III	Marker Planning	Prepare marker planning for prepared and graded pattern with efficiency.

#### READING LISTS AND RESOURCES

##### Compulsory

1. Pattern making for fashion design, Helen Joseph Armstrong, Pearson Education, 2011
2. Patternmaking: a comprehensive reference for fashion design, Sylvia Rosen, Pearson Prentice Hall, 2004

##### Highly Recommended, not Compulsory

3. Metric Pattern Cutting for Children's Wear and Babywear, Winifred Aldrich, John Wiley & Sons, 2012

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

4. Metric Pattern Cutting for Men's wear, Winifred Aldrich, John Wiley & Sons, 2012

**SEMESTER – VI****ELECTIVE – II****BOUTIQUE DESIGNER – II (WOMEN’S CLOTHING) PRACTICAL****Course Code:** 22UPTAD2E05**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:2:0**Course Duration** : 30 Hours**Credit:** 02**Course Description:**

The Course is structured to provide practical skills regarding to establish a boutique for women’s clothing. The Students gain knowledge for design women’s garments and develop patterns for construction. This will also help students to calculate the cost the respective garments with adequate profit.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Organize boutique with required standards and Recognize the customer needs.	<b>Psychomotor</b>
CO2	Develop the technical flat sketches of the designed garments using suitable body measurements.	
CO3	Generate a portfolio using different kinds of boards for designed garments.	
CO4	Develop the pattern blocks for the designed garments and predict the appropriate pattern layout.	
CO5	Construct the designed garments and calibrate the cost calculation.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M		L	H	M	M	H	M	H	M	M
CO2	L	M	H	H	H	H	H	H	M	H	H
CO3	L	M	H	H	H	H	H	H	M	H	H
CO4	H	M	H	H	H	H	H	H	M	H	
CO5	H	M	H	H	H	H	H	H	M	H	H

Unit	Unit Exercise	Learning Chapters
I	<b>Organization of boutique</b>	Selection of area, Size of boutique, Lay out, Interior design.
	<b>Customer profile</b>	Understand customer needs and create the customer persona.

II	<b>Drawing for Inspiration</b>	Personal sketch
	<b>Drawing for Presentation</b>	Fashion sketches and float
	<b>Drawing for Specification</b>	Flats or technical sketch
	<b>Body measurements</b>	Take correct body measurements and know the standard measurement chart.
III	<b>Portfolio</b>	Create a Theme board, Concept board, Mood Board for women's Casual wear/ Sportswear/ Party wear/ Ethnic wear. <b>Suggested Garments-</b> Designer Princess blouse, Lehanga set, Maxi, Co-ord set
IV	<b>Pattern Drafting</b>	Create a pattern for the given garments and its variation With different types of collar, pocket, sleeves, cuffs and placket.
	<b>Pattern Layout</b>	Analyse different pattern layouts and place patterns to get fabric efficiency.
V	<b>Sewing techniques for component parts</b>	Finishing technique - component parts for the given garment and give some variations in collar, sleeves, pocket, plackets, waistband and Hemlines.
	<b>Garment construction</b>	Create garments using different sewing techniques.
	<b>Costing</b>	Estimate the cost calculation for the garment with adequate profit.

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Garment Construction Complete Course on Making Clothing for Fit and Fashion By Peg Couch , 2011
2. The Complete Book of Sewing By Chris Jeffreys, DK Publishing, Inc, 2003
3. The New Complete Guide to Sewing Step-by-Step Techniques for Making Clothes and Home Accessories Updated Edition with All-New Projects and Simplicity Patterns By Editors of Reader's Digest, 2010
4. The Dressmaker's Companion A Practical Guide to Sewing Clothes By Elizabeth M. Haywood
5. The Dressmaker Complete Book on All Matters Connected with Sewing and Dressmaking from the Simplest Stitches to the Cutting, Making Altering, Mending and Caring for the ClothesByButterick Publishing Company, 1916
6. Metric Pattern Cutting for Women's Wear By Winifred Aldrich, 2015

### **Highly recommended, not compulsory**

7. Clothing, Simplicity-economy for the High School Girl By Laura Irene Baldt, Helen D. Harkness, 1931
8. Sew Sweet Handmade Clothes for Girls22 Easy-to-Make Dresses, Skirts, Pants & Tops Girls Will Love By Yuki Araki, 2014
9. Carefree Clothes for Girls20 Patterns for Outdoor Frocks, Playdate Dresses, and More ByJunko Okawa, 2009
10. Modern Style for Girls Sew a Boutique Wardrobe By Mary Abreu, 2015
11. Clothing for Women; Selection, Design, ConstructionA Practical Manual for School and HomeBy Laura Irene Baldt, 1916
12. Pattern Cutting Techniques for Ladies' JacketsBy Jo Baker-Waters, 2016
13. Making Trousers for Men &Women A Multimedia Sewing Workshop By David Page Coffin, 2009
14. Making Trousers How to Achieve Great Results By David Page Coffin, 2009
15. The Shirtmaking WorkbookPattern, Design, and Construction Resources - More Than 100 Pattern Downloads for Collars, Cuffs & PlacketsBy David Page Coffin, 2015

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

16. Making Working Women's CostumePatterns for Clothes from the Mid-15th to Mid-20th CenturiesBy Elizabeth Friendship, 2015
17. Laser Cutting for Fashion and TextilesBy Laura Berens Baker, 2016
18. Pattern Cutting for Women's Tailored JacketsClassic and ContemporaryBy Winifred Aldrich, 2002
19. <https://www.thesprucecrafts.com/techniques-for-sewing-clothing-2978471>
20. <https://study.com/academy/lesson/clothing-construction-terms-basics-methods.html>

**SEMESTER – VI****ELECTIVE – II****BOUTIQUE DESIGNER – II (MEN’S CLOTHING) PRACTICAL****Course Code:** 22UPTAD2E06**Marks:** 100 Marks (Internal-40; External-60)**L:T:P** – 0:2:0**Course Duration** : 30 Hours**Credit:** 02**Course Description:**

The Course is structured to provide practical skills regarding to establish a boutique for men’s clothing. The Students gain knowledge for design men’s garments and develop patterns for construction. This will also help students to calculate the cost the respective garments with adequate profit.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Organize boutique with required standards and Recognize the customer needs.	<b>Psychomotor</b>
CO2	Develop the technical flat sketches of the designed garments using suitable body measurements.	
CO3	Generate a portfolio using different kinds of boards for designed garments.	
CO4	Develop the pattern blocks for the designed garments and predict the appropriate pattern layout.	
CO5	Construct the designed garments and calibrate the cost calculation.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M		L	H	M	M	H	M	H	M	M
CO2	L	M	H	H	H	H	H	H	M	H	H
CO3	L	M	H	H	H	H	H	H	M	H	H
CO4	H	M	H	H	H	H	H	H	M	H	
CO5	H	M	H	H	H	H	H	H	M	H	H

Unit	Unit Exercise	Learning Chapters
I	<b>Organization of boutique</b>	Selection of area, Size of boutique, Lay out, Interior design.
	<b>Customer profile</b>	Understand customer needs and create the customer persona.

II	<b>Drawing for Inspiration</b>	Personal sketch
	<b>Drawing for Presentation</b>	Fashion sketches and float
	<b>Drawing for Specification</b>	Flats or technical sketch
	<b>Body measurements</b>	Take correct body measurements and know the standard measurement chart.
III	<b>Portfolio</b>	Create a Theme board, Concept board, Mood Board for Men's Casual wear/ Sportswear/ Party wear/ Ethnic wear. <b>Suggested Garments-</b> Designer Kurta / Sherwani, SB Vest, Dhoti pant/Jogger
IV	<b>Pattern Drafting</b>	Create a pattern for the given garments and its variation With different types of collar, pocket, sleeves, cuffs and placket.
	<b>Pattern Layout</b>	Analyse different pattern layouts and place patterns to get fabric efficiency.
V	<b>Sewing techniques for component parts</b>	Finishing technique - component parts for the given garment and give some variations in collar, sleeves, pocket, plackets, waistband and Hemlines.
	<b>Garment construction</b>	Create garments using different sewing techniques.
	<b>Costing</b>	Estimate the cost calculation for the garment with adequate profit.

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Garment Construction A Complete Course on Making Clothing for Fit and Fashion By Peg Couch, 2011
2. The Complete Book of Sewing By Chris Jeffreys, DK Publishing, Inc, 2003  
The New Complete Guide to Sewing Step-by-Step Techniques for Making Clothes and Home
3. Accessories Updated Edition with All-New Projects and Simplicity Patterns By Editors of Reader's Digest, 2010
4. The Dressmaker's Companion A Practical Guide to Sewing Clothes By Elizabeth M. Haywood  
The Dressmaker Complete Book on All Matters Connected with Sewing and Dressmaking from the
5. Simplest Stitches to the Cutting, Making Altering, Mending and Caring for the Clothes By Butterick Publishing Company, 1916
6. Illustrated Guide to Sewing: Garment Construction A Complete Course on Making Clothing for Fit and fashion By Fox Chapel Publishing, Colleen Dorsey, 2011
7. Practical Pattern Making By Lucia Mors, Lucia Mors de Castro, Isabel Sánchez Hernández, 2015
8. Patternmaking For Fashion Design And DVD Package, 4/E (DVD) By Helen Joseph, 2008
9. Metric Pattern Cutting for Menswear By Winifred Aldrich, 2012
10. Menswear By John Hopkins, 2017

### **Highly recommended, not compulsory**

11. Pattern Cutting for Menswear By Gareth Kershaw, 2013
12. Patternmaking for Menswear Classic to Contemporary By Myoungok Kim, Injoo Kim, 2014
13. How to Make Men's Clothes By Jane Rhinehart, 1976
14. Making Trousers for Men & Women A Multimedia Sewing workshop By David Page Coffin, 2009
15. Making Trousers How to Achieve Great results By David Page Coffin, 2009
16. Sewing Shirts with a Perfect Fit The Ultimate Guide to Fit, Style, and Construction from Collared and Cuffed to Blouses and Tunics By David Page Coffin, 2018
17. The Shirt making Work book Pattern, Design, and Construction Resources - More Than 100 Pattern Downloads for Collars, Cuffs & Plackets By David Page Coffin, 2015

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

18. Laser Cutting for Fashion and Textiles By Laura Berens Baker, 2016
19. Pattern Cutting for Clothing Using CAD How to Use Lectra Modaris Pattern Cutting Software. By M Stott, 2012
20. <https://www.thesprucecrafts.com/techniques-for-sewing-clothing-2978471>

## SEMESTER – VI

### ELECTIVE - II

#### ENTREPRENEURSHIP DEVELOPMENT - II

**Course Code:** 22UPTAD2E07

**Marks:** 100 Marks (Internal-25; External-75)

**L:T:P** – 2:0:0

**Course Duration :** 30 Hours

**Credit:** 02

#### Course Description:

This course will be enhance the students to assess the economic viability of a venture which helps them to prepare a business model to start up an enterprise. It also gain knowledge about Intellectual property rights and legal ownership of the invention and business idea.sz

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Generalize the economic viability and project relevant factors	Cognitive
CO2	Develop strategic management template to develop new business models.	
CO3	Organize a small enterprise with legal procedures and certifications.	
CO4	Verify laws to protect and enforce rights of the inventors.	
CO5	Interpret the trade mark secrets and grants protections.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	M	M	H	H	H	H	H	H	H	M	H
CO2	M	M	H	H	H	H	H	H	H	M	H
CO3	M	M	H	H	H	H	H	H	H	M	H
CO4	H	L	L	L	L	L	H	L	L	L	L
CO5	H	L	L	L	L	L	H	L	L	L	L

Unit	Unit Title	Learning Chapters
I	Financial Analysis and Methodology to assess the Feasibility	Financial Analysis: Fundamentals of a feasibility plan, Feasibility Analysis and its Objectives. Feasibility Study: Product / Service Feasibility, Industry /Market Feasibility, Organization Feasibility, Financial feasibility. Typical feasibility Study: Concept of Your venture, Technical feasibility of your idea, Market Assessment, Your Managing plan.
II	Financial Visibility Business Model Canvas	Business Model: Customer Segments, Value Proposition, Channels, Customer Relationships, Key Resources, Key Activities, Key Partners, Revenue Streams, and Cost Structure. Making Personal Business Model. New Business Model for Textile and Apparel Industries.

III	Small Enterprises and Enterprise Launching Formalities	Definition of Small Scale, Objective, Scope; Role of SSI in Economic Development of India, SSI: Registration, NOC from Pollution Board, Machinery and Equipment Selection, Project Report Preparation, Specimen of Project Report, Project Planning and Scheduling using Networking Techniques of PERT/CPM; Methods of Project Appraisal.
IV	IPRs	IPRs: Intellectual Property Rights: Intellectual Property Rights in Fashion Business, Significance of Intellectual Property in the Fashion Industry. Textile and apparel sector through Intellectual Property Rights (IPR) lens. Incentives and subsidies – Subsidised services – subsidy for market. Transport – seed capital assistance– Taxation benefit to SSI.
V	Patents, Trade Marks, Brand and Copyrights	Patents: Meaning and Law regarding Patent, why have Patents?, what can be Patented?, Conditions of Patent, Rights of Patentees. Trade Marks: Meaning, Definition, Registration of Trade marks. Brand: Meaning, Definitions, Distinction between Trademark and Brand, Essentials. Copyrights: Meaning and concept, Features of Copyright, Nature and scope of Copyright.

### READING LISTS AND RESOURCES

#### Compulsory

1. Business Model Canvas: a Good Tool with Bad Instructions? Rod King, 2017
2. Handbook of Deep Trade Agreements Aaditya Mattoo, Nadia Rocha, Michele Ruta, 2020
3. Entrepreneurship and Local Economic Development a Comparative Perspective on Entrepreneurs, Universities and Governments, 2018
4. Entrepreneurship and Economic Development, 2010

#### Highly recommended, not compulsory

5. Media Innovation and Entrepreneurship Michelle Ferrier, Elizabeth Mays, 2017
6. Enterprise Planning and Development by David Butler, 2006

#### Good for Students who have Future Interests

7. Journal of Small Business and Entrepreneurship Autumn, 1998
8. Entrepreneurship By Robert D. Hisrich, Michael P. Peters, 2002
9. <http://www.fashionenterprise.com/files/2010/09/CFECopyrightDownload1.pdf> on 16th Oct, 2014
10. <http://www.lexology.com/library/detail.aspx?g=6c596a24-e79b-4d39-a73f-9837529d9a78> on 18th Oct, 2014
11. <http://antwerpsex.wordpress.com/2013/09/03/fashion-101-intellectual-property-laws/> on 16th Oct, 2014
12. WIPO Magazine/May-June, 2005
13. <http://www.businessoffashion.com/2011/07/fashions-intellectual-property-conundrum.html> on 18th Oct, 2014

## SEMESTER – VI

### ELECTIVE - II

#### MERCHANDISING AND MARKETING - II

Course Code: 22UPTAD2E08

Marks: 100 Marks (Internal-25; External-75)

L:T:P – 2:0:0

Course Duration : 30 Hours

Credit: 02

#### Course Description:

This course will help students to recognize merchandising roles and responsibilities in the apparel industry market opportunities that can be utilized in Market research. Market survey helps them to promote service with customer satisfaction

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Predict the Buyer coordination parameters in the apparel manufacturing industry.	Cognitive
CO2	Execute the order follow up and procedures and methods of inspection.	
CO3	Discover the Procedure of shipping and documentation with logistics.	
CO4	Summarize the strategies of New Product Development and its Pricing Methods.	
CO5	Distinguish the Product Promotion according to the Marketing Challenges and Opportunities.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1			H	M	M	H	H	M	M	M	L
CO2			H	M	M	H	H	M	M	M	L
CO3			M	M	M	M	M	M	L	L	L
CO4				H	M		M	M	H		M
CO5			M	M	M	M	M	M	L	L	L

Unit	Unit Title	Learning Chapters
I	Buyer Coordination	Approval and updating of work sheets - Procedure and method of approval and updating of all the work sheets, like the trims sheet, fabric sheet, consumption sheet (fabric and thread) this also includes in tech-pack, if any. Procedure and method of actual TNA updating that sent for approval.
II	Execution of orders	QA or 3rd Party QA - Procedure and method of coordinating with buying house. QA for Initial/mid and final inspection of shipment. Procedures and methods of inspection. Procedure and method of check execution of orders.

<b>III</b>	Shipping and Documentation	Procedure of shipping and documentation. Method of coordination with shipping and documentation department for forwarding approved shipment. Procedure and method of closely work with logistics and help shipping department with timely information of packing reports for preparation of shipping documents
<b>IV</b>	Product Pricing Strategies	Product -Product Classification- Product Strategies- New Product Development- Product Life Cycle and Marketing Mix- Branding Strategy - Labeling Strategy - Packaging Strategy - Pricing Methods and Strategy
<b>V</b>	Product Promotion	Promotion Decision - Promotion mix -Advertising and Sales Promotion, Advertising objectives, Advertising Decision, – Developing Advertising Programme – Role of Media in Advertising – Advertisement effectiveness - Sales force Decision-Rural Marketing Challenges & Opportunities

### **READING LISTS AND RESOURCES**

#### **Compulsory**

1. Apparel Merchandising, Robin Mathew, Book Enclave Publishers, Jaipur, 2008.
2. Inside the Fashion Business, McMillan Publishing Co, 7th Edition, 2004
3. Fashion Merchandising, Elian Stone, McGraw-Hill Publication, 2004.
4. Marketing – R S N P illai and Bhagavathi, Published by S Chand and company ltd, New Delhi, 1987.
5. Fashion Business, Dr. K. Prabha Kumari & D. Anita Rachel, Abhishek Publications. ISBN: 978-81-8247-68-4, 2018.
6. Marketing Management, Dr B K Chatterjee Jaico, Juice Publishing house, Bombay 1982. Principles of Marketing, Backman T N, Munard H H and Davidson W R , Ronald Press Company, New York, 1970.

#### **Highly recommended, not compulsory**

7. Apparel Merchandising, An integrated Approach, Krishna kumar, M, Abishek Publications, 2010.
8. Apparel Merchandising, Jerry A & Rosenau, Fairchild Publications, London, 2007.
9. Marketing Principles and methods, Philip C F and Duncon, Irwin Publications,

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

10. Apparel Production Management, Dr.K. Prabha Kumari & D. Anita Rachel, Karangal Publication, ISBN:978-81-93623-99-2, 2018.
11. Fashion Marketing, Mike Easey, Published by Black well Science Ltd, 1995.

**SEMESTER -VI**  
**QUALIFICATION PACK LEVEL – VII**  
**SKILL COMPONENT - V**  
**SOURCING MANAGER (Ref.ID: AMH/Q0920)**

**Course Code:** 22UPTAD2S01

**Marks:** 100 Marks

**L:T:P** – 2:2:6

**Course Duration :** 150 Hours

**Credit:** 07

**Course Description:**

Sourcing Manager in an Apparel Industry is primarily concerned with procurement of fabrics, trims & accessories as per design needs and sample requirements received from merchandiser. The role is supervising the functionary of purchase departments. Sourcing Manager is concerned with identifying suitable suppliers for materials assessed on the basis of price, quality, reliability, time and long term business relations

**Course Outcomes:**

By the end of this Course, Students will be able to

S. No	Outcomes	Domains of Learning
CO1	Plan and estimate fabrics, trims and accessories procurements as per garment design's requirements from domestic and international suppliers	Psychomotor & Cognitive
CO2	Evaluate the activities performed by subordinates as per working organizational guidelines	
CO3	Maintain records for processes related to fabrics, trims and accessories procurement	
CO4	Identify workplace, health and safety hazards and ensuring safeguard mechanism against hazards	
CO5	Comply with industry regulatory and organizational requirements in the workplace and adapt with all national and international regulations	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	M	M	H			M
CO2	H	H		H	H			H	H		L
CO3	H				H		M	H	H		H
CO4	H			H	H		M	H	M	H	
CO5	H			H	H		M	H	H		M

Unit	Learning Chapters ( <a href="http://sscammh.com/approvedOPNo.php">http://sscammh.com/approvedOPNo.php</a> )
I	Reference ID: AMH/N0920 Plan for the procurement of materials as per garment design requirements Reference ID: AMH/N0921 Procure materials from national and international suppliers related to fabrics, trims and accessories
II	Reference ID: AMH/N0922 Supervise and evaluate performance of subordinates
III	Reference ID: AMH/N0923 Maintain records about procurement of materials
IV	Reference ID: AMH/N0924 Maintain health, safety and security in the sourcing department
V	Reference ID: AMH/N0104 Comply with industry, regulatory and organizational requirements

## **READING LISTS AND RESOURCES**

### **Compulsory**

1. Qualification Pack – Occupational Standard For Apparel, Made up's And Home Furnishing Sector
2. Qualification Pack – Sourcing Manager (AMH/Q0920)
3. Mastering Fashion Buying and Merchandising Management Tim Jackson, David Shaw Macmillan International Higher Education, 16-Nov-2000.
4. Retail Buying Techniques: Planning, Organising and Evaluating Retail Buying Decisions and Improving Profitability Fiona Elliott, Janet Rider Management Books 2000, 2003
5. Law for Retailers: The Legal Beagle Keeps You Straight with a Guide to Trading Within the Law W. H. Thomas Management Books 2000,

### **Highly Recommended, not Compulsory**

6. Sourcing Manager Complete Self-Assessment Guide, Gerardus Blokdyk, 2018.
7. Retail Management: A Strategic Approach Barry Berman, Joel R. Evans Macmillan, 1983
8. Entrepreneurship and Venture Management: Text and Cases Kenneth W. Olm, George G. Eddy C.E. Merrill Publishing Company, 1985
9. Sourcing Strategy: Principles, Policy and Designs Sudhi Seshadri, 2005
10. Retailing Tony Kent, Ogenyi Omar Macmillan Education UK, 13-Dec-2002
11. Strategic Retail Management: Text and International Cases Joachim Zentes, Dirk Morschett, Hanna Schramm-Klein Springer Science & Business Media, 16-Oct-2007

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

12. Global Sourcing in the Textile and Apparel Industry By Jung Ha Brookshire, 2017
13. Boutiques and Other Retail Spaces: The Architecture of Seduction David Vernet, Leontine de Wit Routledge, 17-Aug-2007
14. <https://www.slideshare.net/ujjmishra/retail-buying-merchandising-purchasing>

## SEMESTER – V

### SKILL COMPONENT – VI

#### PORTFOLIO SOURCING TECHNIQUES - II

**Course Code:** 22UPTAD2P06

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

#### Course Description:

This course is designed for procurement of fabrics, trims & accessories as per requirements received from merchandiser. The students are able to supervise the functionary of purchase departments concerned with identifying suitable suppliers for materials assessed on the basis of price, quality, reliability, time and long term business relations.

#### Course Outcomes (COs)

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

S. No	Outcomes	Domains of Learning
CO1	Analyze the various types of Garments, Fabric, Accessories and Trims	<b>Psychomotor</b>
CO2	Execute the different types of vendor evaluation and selection as per required criteria.	
CO3	Evaluate the supplier as per their lead time and Logistic constraints.	
CO4	Carry out the records and documents about sourcing and future reference.	

Course Outcomes (COs)	Programme Specific Outcomes (PSOs)										
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
CO1	H	H	H	H	H	H	H	H	M	M	L
CO2			L	H	L	M	M	L	H	L	
CO3			L	H	L	M	M	L	H	L	M
CO4		L	L	H	L	M	M	L	H	L	M

Unit	Unit Title	Learning Chapters
I	Sourcing Needs	<ul style="list-style-type: none"><li>• Various brands for apparel</li><li>• different types of woven and knit fabric structure and their trade names</li><li>• Special fabrics in apparel made ups and home furnishing.</li><li>• Forecasting upcoming trends, Demands</li></ul>
II	Vendor Selection	<ul style="list-style-type: none"><li>• Procurement tools and techniques</li><li>• Procurement Risks.</li><li>• Budget and Cost negotiation</li><li>• Cost Analysis and Benchmark</li><li>• Forecast and Market studies.</li></ul>
III	Supplier Evaluation	<ul style="list-style-type: none"><li>• Supply chain management and Supply Lead time</li><li>• Supplier comparison index</li><li>• Logistic constraints</li><li>• Supplier contract- both local and international market</li></ul>

<b>IV</b>	Sourcing Documents	<ul style="list-style-type: none"> <li>• Garment manufacturing process</li> <li>• Maintain health, safety and security in the sourcing department</li> <li>• Hazards Management at workplace</li> <li>• Health &amp; safety equipments</li> <li>• Letter of credit documents</li> <li>• Internal and external communications</li> <li>• Computer applications for record maintenance</li> </ul>
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## READING LISTS AND RESOURCES

### **Compulsory**

10. Goworek, H. (2007), Fashion Buying, 2nd Edition, Blackwell Publishing, Oxford.
11. Jackson, T. and Shaw, D. (2000), Mastering Fashion Buying and Merchandising Management, Palgrave Macmillan, London.
12. Hines, T. and Bruce, M. (2001), Fashion Marketing: Contemporary Issues, Butterworth-Heinemann, Oxford.
13. Mintel Reports: Value Clothing Retailing (May 2005); Clothing Retailing (July 2005); Keynote Reports: Clothing Manufacturing (May 2006);
14. Clothing and Footwear Industry (March 2006).

### **Highly Recommended, not Compulsory**

15. Baker, M.J. and Hart, S. (2007), Product Strategy and Management, 2nd Edition, FT Prentice Hall, London.
16. Cravens, D.W. and Piercy, N. (2005), Strategic Marketing, 9th Edition, McGraw-Hill, London.
17. Nagle, T.T. and Hogan, J.E. (2007), The Strategy and Tactics of Pricing: A Guide to Growing More Profitably, 4th Edition, Pearson Education, London.

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

18. Marciniak, R. and Willans, J.R. (2008), Fashion Retailing, Blackwell, London.

**SEMESTER – VI**  
**SKILL COMPONENT – VII**  
**MINI PROJECT AND VIVA VOCE**

**Innovative Product/Process Development**

**Course Code:** 22UPTAD2M06

**Marks:** 100 Marks (Internal-40; External-60)

**L:T:P** – 0:1:2

**Course Duration** : 45 Hours

**Credit:** 02

**Course Description:**

This course will guide the students to create innovative ideas. It also enables the students to professionally customize a product or sample using various kinds of machineries used in garment manufacturing industry.

**Course Outcomes (COs)**

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

S. No	Outcomes	Domains of Learning
CO1	Identify the problem to develop an innovative product	Psychomotor
CO2	Find a solution for the defined problem.	
CO3	Explain the uniqueness of the product developed	
CO4	Discuss the value proposition of the developed product	
CO5	Identify the market potential for scalability	
CO6	Calculate the economic aspects for commercialization	
CO7	Develop product addressing the sustainable development goals (SDG) on environment	
CO8	Prepare an effective documentation with photographs and video URL.	

Unit	Unit Title	Learning Chapters
I	Problem Identification	How to identify the right problem to develop innovative product development. Define the problem and its relevance to today's market/society/Industrial needs.
II	Solution Proposed/Idea	Apply various tools and techniques to propose solution to develop innovative product idea.
III	Uniqueness	Explain the uniqueness and distinctive features of the product How is the developed product idea different from the competitors, if any.
IV	Utility value/Value Proposition	Explain the key benefits of the innovation
V	Scalability	Highlight the market potential (market size, segment and target) aspects of the solution or the product
VI	Economic Sustainability	Emphasize the commercialization/business application aspects of the solution.
VII	Environment Sustainability	Highlight environmental friendliness aspects and the related benefits of the innovation.
VIII	Documentation	Prepare a detailed report of (unit-1-7), with high quality photographs and develop a video of the innovative product.