

**BHARATHIAR UNIVERSITY (CBCS PATTERN)**

**B.Sc Costume Design & Fashion (Vocational) with compulsory Diploma  
(For the students admitted during the academic year 2008-2009 Batch and onwards)**

**Scheme of Examination – CBCS PATTERN**

Part	Study Components	Course Title	Ins. hrs / week	Examinations				Credit
				Dur.H	CIA	Marks	Total Marks	
	<b>Semester I</b>							
I	Language-I		6	3	25	75	100	3
II	English-I		6	3	25	75	100	3
III	Core Paper I- Basic Skills in Garment Construction		3	3	25	75	100	4
	Core Practical I- Garment Construction Practical		5	3	20	30	50	2
	Core Paper II- Pattern Making & Grading		4	3	25	75	100	4
	Allied Paper I - Sketching & Fashion Illustrations Practical		4	3	40	60	100	5
IV	Environmental Studies #		2	3	-	50	50	2
	<b>Semester II</b>							
I	Language-II		6	3	25	75	100	3
II	English-II		6	3	25	75	100	3
III	Core Practical II - Children's Apparel- Practical		6	4	40	60	100	3
	Core Paper III – Principles of Design & Application		3	3	25	75	100	4
	Core Practical III - Principles of Design & Application- Practical		4	3	20	30	50	2
	Allied Paper II - Embroidery - Practical		3	3	40	60	100	5
IV	Value Education – Human Rights #		2	3	-	50	50	2
	15 days Internship training to any Garment Unit							
	<b>Semester III</b>							
III	Core Practical IV - Women's Apparel-Practical		8	4	40	60	100	3
	Core Paper IV – Fashion & Apparel Designing		5	3	25	75	100	4
	Core Paper V –Basic Textiles		5	3	25	75	100	4
	Core Practical V- Basic Textiles- Practical		3	3	20	30	50	2
	Allied Paper III - Computer Application in fashion Design- Practical-I		4	3	40	60	100	5
	Skill based Subject 1 (Diploma Paper -I) Basic Draping – Practical		3	3	40	60	100	3
	Tamil @ / Advanced Tamil# (OR) Non-major elective - I (Yoga for Human Excellence)# / Women's Rights#		2	3	75	75	75	2

	<b>Semester IV</b>						
III	Core Practical VI – Draping Practical	6	3	20	30	50	2
	Core Paper VI – Fabric Structure & Design	5	3	25	75	100	4
	Core Practical VII Fabric Structure & Design - Practical	3	3	20	30	50	2
	Core Paper VII - Wet Processing	3	3	20	55	75	4
	Core Practical VIII - Wet Processing Practical	3	3	20	30	50	2
	Allied Paper IV - Computer Applications in Fashion Designing – Practical II	5	3	40	60	100	5
	Skill based Subject 2 (Diploma Paper II) Surface Embellishments Practical	3	3	40	60	100	3
	Tamil @ /Advanced Tamil # (OR) Non-major elective -II (General Awareness #)	2	3	75		75	2
	<b>Semester V</b>						
III	Core Practical IX - Men’s Apparel –Practical –I	6	4	40	60	100	3
	Core Practical X - Computer Applications in the Textile Design Practical-I	5	3	20	30	50	2
	Core Paper VIII-Clothing care	3	3	20	55	75	4
	Core Practical XI - Textile Printing - Practical	4	3	20	30	50	2
	Core Paper IX – Apparel Production Techniques	5	3	20	55	75	4
	Elective –I	4	3	25	75	100	5
IV	Skill based Subject3(Diploma) Dyeing & Printing Methods	3	3	25	75	100	3
	<b>Semester VI</b>						
III	Core Practical XII - Men’s Apparel- Practical-II	6	4	40	60	100	3
	Core Practical XIII - Computer Applications in Textile Design Practical-II	6	3	20	30	50	2
	Core Paper X - Knitting	5	3	20	55	75	4
	Core Practical XIV- Knitting Practical	3	3	20	30	50	2
	Elective –II	4	3	25	75	100	5
	Elective –III	3	3	25	75	100	5
IV	Skill based Subject 4 (Diploma Paper IV) Fashion Portfolio Presentation	3	-	-	-	100*	3
V	Extension Activities @	-	-	50	-	50	1
	<b>Total</b>					3600	140

\* For Viva : 20 marks & report: 80 marks.

@ No University Examinations. Only Continuous Internal Assessment (CIA)

# No Continuous Internal Assessment (CIA). Only University Examinations.

List of Elective papers (Colleges can choose any one of the paper as electives)		
Elective – I	A	Textile and Apparel Quality Control
	B	Fabric Production and Processing
	C	Entrepreneurial Development
Elective – II	A	Entrepreneurship Development and Management
	B	Apparel Production Management
	C	Business Finance
Elective - III	A	Indian Art and Costumes
	B	Export Analysis and Documentation
	C	Apparel Quality Management

## **SEMESTER I CORE PAPER – I**

### **BASIC SKILLS IN GARMENT CONSTRUCTION**

#### **Unit I**

Parts and functions of a single needle machine, essential tools – cutting tools, measuring tools, marking tools, general tools, pressing tools. Seams and seam finishes – types, working of seams and seam finishes. Hems – types, stitches used.

#### **UNIT II**

Fullness – Definition, types. Darts, Tucks, pleats, flares and godets, gathers and shirrs, frills or ruffles, flounces. Facings – bias facing, shaped facing and decorative facing. Binding – single bias binding, double bias binding.

#### **Unit III**

Plackets – definition, characteristics of good placket, types – Inconspicuous plackets and conspicuous plackets. Method of constructing the same. Fasteners – conspicuous ( Button and button – holes, button loops, button with holes, shank buttons, eyelets and cords).

Inconspicuous ( press buttons, hooks and eyes, zips)

#### **UNIT IV**

Sleeves – Definition, types, set – in sleeves – plain sleeve, puff sleeve, bishop sleeve, bell, circular. Modified armhole – squared armhole, cap sleeve and Magyar sleeve. Sleeve and bodice combined – raglan, kimono and dolman. Yokes – types, simple yoke, yoke with fullness within the yoke, yoke supporting/ releasing fullness.

#### **Unit V**

Collars – definition, types, peter pan, scalloped, puritan, sailor, square, rippled, full shirt collar, open collar, Chinese, turtle neck, shawl collar. Pockets – types, patch pocket, bound pocket, pocket in a seam, front hip pocket.

#### **References:**

1. Practical clothing construction – Part I and II, Mary Mathews, Cosmic press, Chennai ( 1986)
2. The complete book of sewing – Dorling Kindersley limited, London,( 1986)
3. Sewing and knitting – A readers digest, step by step guide, readers digest pvt limited.

### **CORE PRACTICAL I**

#### **BASIC SKILLS IN GARMENT CONSTRUCTION – PRACTICALS.**

##### **Exercise – I:**

Preparation of samples for different types and seam finishes.

##### **Exercise – II:**

Hemming – top stitched hem, Zig – Zag finish. Turned and stitched finish, bound hem finish.

**Exercise – III.**

Preparation of samples for fullness, bias joining, facings and bindings.

**Exercise – IV**

Preparation of samples for plackets and closures

**Exercise – V**

Preparation of samples for plain sleeve, puff sleeve, cap sleeve and raglan sleeve

**Exercise VI:**

Preparation of samples for partial yoke and yoke supporting fullness.

**Exercise VII:**

Preparation of samples for peter pan collar, shirt collar and shawl collar.

**Exercise – VIII**

Preparation of samples for patch and side seam pocket.

**SEMESTER I CORE PAPER II  
PATTERN MAKING AND GRADING**

**Unit I**

Body measurements – importance preparation for measuring, measurements needed for men's women's, boys, girls and Infants dresses. Standardizing body measurements. Importance & techniques. Eight head theory. Relative girth measures in gentlemen and ladies. Relative length measures and gentlemen. Preparation of fabric for cutting. Importance of grain in cutting and construction, steps in preparing fabric for cutting .

**UNIT II**

Pattern making - Methods of pattern making ( drafting draping, placement methods) preparation of paper pattern, advantages & disadvantages of different methods of pattern making, types of paper pattern, principles for pattern drafting, steps in drafting children's and adults pattern ( bodice, sleeve) importance of pattern details.

**UNIT III**

Relocation of darts – dart relocation by slash and spread method Converting darts to seams, converting darts to partial yoke, incorporating dart into seam. Fitting, principles standards, causes of poor fit, checking fit of garment, solving fitting, problems in various garments basic principles and fitting techniques, alteration of pattern for irregular figures.

#### **UNIT IV**

Grading - Definition types ( manual) Manual – master grades, basic back, basic front, basic sleeve, basic collar and basic facing.

Pattern alteration – Importance of altering pattern General principles for pattern alteration. Common pattern alteration in a blouse.

#### **UNIT V**

Pattern layout Definition, purpose, rules in pattern layout, types of layout ( methods), layouts for lengthwise striped design, fabric with bold designs, asymmetric designs, one way design. Economic layout with example ( flared skirt). What can be done if cloth is insufficient, fabric cutting, transferring pattern markings.

#### **References:**

1. Practical clothing construction – part I and II Mary Mathews ( 1997).
2. Pattern grading for womens clothes, the technology for sizing Gerry cooklin, backwell science ltd (1990)

### **SEMESTER I ALLIED PAPER I SKETCHING AND FASHION ILLUSTRATION - PRACTICALS.**

#### **Unit I**

Lines line drawings – object drawing and perspective view drawings – still and life drawing, shading with graphite pencils, enlarging and reducing motifs.

#### **Unit – II**

Study of human anatomy – in terms of shapes, size and movements. Figure types and achieving perfect proportions.

#### **Unit – III**

Drawing a stick figure for both normal and fashion figure. Forming a fleshy figure over a stick figure.

#### **Unit IV**

Dividing the figure into various parts using lines like plumb line, center front line, princess line, waistline, side seam, armholes, jewel neckline, panty line, bust line etc.,

Analyzing a normal figure into fashion figure – front face to be done using pictures from magazines, analyzing profile using of a normal figure into fashion figure – using magazine – analyzing back of a normal figure in to fashion figure – using magazine –

#### **Unit V**

Illustrating pattern details Pockets sleeves, Yokes, skirts, trousers, tops etc.,  
Trimmings and Embellishments.  
Creating fashion figures by collage based on themes.

**RERERENCES:**

1. Fashion design drawing & presentation, Ireland Patrick John.
2. Fashion design illustration: Children, Ireland Patrick John,
3. Fashion Design illustration : Men, Ireland Patrick John
4. Fashion Design illustrations, Ritu
5. Foundation in fashion design and illustration - Julian, seaman..

**SEMESTER II                      CORE PRACTICAL – II**

**CHILDREN'S APPAREL PRACTICALS.**

Designing, drafting and constructing the following garments for the features prescribed.

List the measurements required and Materials suitable

Calculate the cost of the garment.

Calculate the material required – Layout Method and Direct measurement method.

1. **Bib** – variation in outline shape
2. **Panty** – plain or plastic lipid panty
3. **Jabla** – without sleeve, front open (or) Magyar sleeve, back open.
4. **Baba suit** – knicker with chest piece attached (or) Romper
5. **A – line petticoat** – double pointed dart, neckline and armhole finished with facing ( or) Petticoat with gathered waist.
6. **Summer frock** – with suspenders at shoulder line, without sleeve/ collars (or) Angel top with raglan sleeve, fullness at neckline.
7. **Yoke frock** – yoke at chest line, with open, puff sleeve, gathered skirt ( or) frock with collar, with / with out sleeve, gathered / circular skirt at waist line ( or) princess line frock.
8. **Knicker** – elastic waist, side pockets
9. **Shirt** – open collar, with pocket.

**Reference:**

Practical clothing construction – part I and II Mary Mathews, Cosmic Press, Chennai ( 1986)

Zarapker System of cutting - - Zarapker K.R.Navneet Publications Ltd .,  
Practical cutting and tailoring part II Eshwasri Anwahi, Lakhraj Hans R.B Publications. Delhi.

## SEMESTER – II                      ALLIED PAPER II

### EMBROIDERY PRACTICALS

#### Unit - I

Introduction - embroidery, development, basic equipments selection of needle and thread, fabric, methods of transferring the design, embroidery frame, care and preservation of embroidery articles and points to be considered while doing embroidery.

#### Unit – II

Hand embroidery Stitches – running, back stem, blanket, lazy daisy, chain, couching, coral, Herringbone, Fish bone, Feather – single and double, Roumanian, seed, cross, fly satin, long and short, French knot, bullion knot, double knot, chevron, sheaf stitch, fern stitch, Double back stitch, lettering – Alphabets and monograms, drawn thread work and cut work.

#### Unit III

Traditional Indian Embroideries – Origin, embroidery stitches used – Embroidery of Kashmir, Phulkari of Punjab, Gujarat- Kutch and Kathaiawar embroideries,

Embroidery of Rajasthan, Kasuti of Karnataka, Chicken work of Lucknow, Kantha of Bengal - in all the above the types and colors used. Motifs and fabrics used and their historical importance.

#### Unit IV

World Embroidery – Introduction, Embroidery of Australia America – north & South, Africa. – North and west, Central Asia, India, Thailand and Bangladesh in all the above motifs, stitches and colors used an their historical importance.

#### Unit V

Machine Embroidery – General rule for doing machine embroidery, care and maintenance, first stitches (running) cording, satin, long and short, granite work or round stitch, eye let.

#### References:

1. World Embroidery” Caroline Crabtree, published in 1993, printed in Italy by OFSA SPA.
2. “Ethnic embroidery of India” by the Usha Srikant 1998 published by Samata Enterprises, Mumbai.
3. “The country wide needle collection” – Embroidery by taken eldes. Quadrille published limited. London.
4. “Traditional Needle Arts” – Embroidery by Katrin Cargill, 1995, published in Great Britain.
5. Singer Instructions for Art Embroidery and lace work” 8<sup>th</sup> Edition, Signer sewing machine company printed in U.S.A.
6. Indian Embroidery – Kamaladevi Chartophadhya wiley Einstein limited, Delhi

**SEMESTER II                      CORE PAPER – III**  
**PRINCIPLES OF DESIGN AND APPLICATION.**

**Unit – I**

Design Definition, Types structural design and decorative design, types of designs – natural, stylized geometrical, and abstract.

**Unit – II**

Elements of design – line shape, color, size & Texture, Art & Principle – Balance, Rhythm, emphasis, harmony & proportion.

**Unit III**

Color, color theories, prang & Munsell, Dimensions of color – Hue value & intensity, color scheme and texture.

**Unit IV**

Trimmings & Decoration – Definition and types, Figure irregularities, Wardrobe planning.

**Unit V**

Design development and adjustment Selection of design for end uses.

**References:**

1. Elements of fashion & apparel design
2. 'Fashion sketch book' written & illustrated by Bina Abling, Fair child publications, New York.
3. 'Wardrobe strategies for women' by Judith Rasband, Delmar publishers, London.
4. 'Fundamentals of textiles and their care' susheela Dantyagi, 5<sup>th</sup> edition, published by Orient Longman Ltd., New delhi,
5. 'Inside the fashion business' 4<sup>th</sup> edition by Jeannette A Jarnow, Morianr Guerreiro & Beatrice Judelle, Mac Millan Company, New Tork.
6. Mc Jimsoy & Harriet 'Art & Fashion in clothing selection' Liowa state University Press, Iowa.

**CORE PRACTICAL III**  
**PRINCIPLES OF DESIGN AND APPLICATION – PRACTICALS**

- 1. Drawing Diagrams or samples for the following:**
  - a. Application of principles of design in dress design
  - b. Prang color chart
  - c. Value chart
  - d. Intensity chart
  - e. Standard color harmonies
- 2. Preparing samples for surface trimmings**
- 3. Drawing diagrams for persons who have unusual problems in dress**
- 4. Design development for various & application of color.**

### SEMESTER III CORE PRACTICAL -IV

#### WOMEN'S APPAREL – PRACTICALS

Designing, drafting and constructing the following garments for the features prescribed

List the Measurements required and Materials suitable

Calculate the cost of the garment

Calculate the material required – Lay out method and Direct measurement method

1. **Saree petticoat** – six panel, decorated bottom
2. **Blouse** – front open, fashioned neck, waist band at front, with sleeve
3. **Middi** – circular/gathered/pleated, with waist band
4. **Middi top** – kimono/raglan sleeve, gathers / belt at waist
5. **Salwar (or) Churidhar** ( or) Parallels (or) bell bottom
6. **Kameez** – with /without slit, with or without flare, with/without opening, with or without panels, with /without yoke.
7. **Nightie** – with yoke, front open, with sleeve, full length
8. **Princess line dress** – knee length, with or without sleeve.
9. **Ladies pant** – Waist band, Zip attached, tight fitting/ parallel pants.

#### References:

Science Garment quality – K.M. Illege and Sons, Plot No.43 Somuvar peth, Pune 411 001.

Easy Cutting – Juvekar, Commercial Tailors Corporation Pvt Ltd 166 Dr Ambedkar Road, Dadar

Commercial system of cutting - Juvekar, Commercial Tailors Corporation Pvt Ltd, 166 Dr.Ambedkar Road, Dadar.

Zarapker System of cutting – K R Zarapker, Navneet Publications Ltd.,

Dress Making – Smt.Thangam Subramaniam, Bombay Tailoring and Embroidery College, 32 North Park street, Ambattur, Chennai.

Practical clothing construction- Part I and II Mary Mathews, Cosmic press, Chennai.

### SEMESTER III ALLIED PAPER III

#### COMPUTER APPLICATION IN FASHION DESIGN – I PRACTICALS:

##### 1.Photoshop:

Creating effects, color application and creation, learning techniques and materials, developing ones own pallet according to fashion forecast.

##### 2. Corel Draw.

Drawing silhouette , construct styles and designs, 3 D animation.

**SEMESTER III      CORE PAPER IV**  
**FASHION AND APPAREL DESIGNING**

**Unit I**

**FASHION TERMINOLOGIES**

Fashion, Style, Design, Change, Acceptance, Taste, Classics, Fad, High Fashion, Mass Fashion, Fashion Trend, Silhouette, Boutique, Mannequin, Custom made, Collection, Chic, Haute Couture, Pret A porter, Fashion shows.

**Unit II**

**FASHION THEORY AND FASHION CYCLE**

Fashion Theory:

Trickle down theory, trickle across theory, bottom up theory,

Fashion Cycle

Fashion cycle for classic, fashion cycle for Fad

**Unit III**

Fashion Forecasts

Aims of forecasting, Role of fashion predictors, six disciplines of fore casting, Analysis of consumer preference, Components of fashion forecasting.

**Unit IV**

**FACTORS AFFECTING DESIGN APPLICATION FOR VARIOUS AGE GROUPS**

Infants, Toddlers, school going children boys and girls, Teenager, Adolescents, Adults, Old, Seasons, Summer Winter spring Autumn,

**Unit V**

Western costume based on historic perceptive

Egypt, Mesopotamia, Persia, crete, Greece and Rome

**Practical:**

1. Flat sketching
2. Fabric rendering
3. Documentation and presentation of western costumes.

**Reference:**

1. Fashion from concept to consumer( sixth edition) Gini Stephens (1999) Prentice – all of India.
2. Elements of fashion and apparel design, Sumathi G.J.(2002).
3. Inside the fashion business: Jeaneette A Jarnow, Miriarn Guerreiro: Mac Millan Publishing Company, Newyork.

**SEMESTER III                      CORE PAPER – V**

**BASIC TEXTIELS**

**Unit – I**

Introduction to the field of Textiles – major goals- classification of fibres – natural and chemical – primary and secondary characteristics of textile fibres.

**Unit II**

Manufacturing process, properties and uses of natural fibres – cotton, linen, jute, pineapple, hemp, silk, wool, hair fibres, Man made fibres – viscose rayon, acetate rayon- nylon, polyester, acrylic.

**Unit III**

Spinning – definition, classification – chemical and mechanical spinning – blending, opening, cleaning, doubling, carding, combing, drawing, roving, spinning, Yarn classification – definition classification – simple fancy yarns, sewing threads and its properties .

**Unit IV**

Wovens – basic weaves- plain twill, satin, fancy weaves – pile, double cloth, leno, swivel, lapper, dobby and jacquard  
Weaving technology- process sequence –machinery details.

**Unit V**

Non- wovens- felting, fusing, bonding , lamination , netting, braiding and calico, tating and crotcheting

**References:**

Textiles – Fiber to Fabric, Corbmann B.P. International students edition, Mc Graw Hill book Co, Singapore 1985.  
Sewing and knitting – A Reader's Digest Step- by- step guide, Readers Digest, New York 1993.  
Fabric Science 5<sup>th</sup> Edition, Joseph J pretal, Fairchild publication's New York 1990  
Technology of dyeing and printing – Shenai.

**CORE PRACTICAL V  
BASIC TEXTILES – PRACTICALS**

**Identification of Textile Fibers**

Fibers – cotton, silk, wool, nylon, polyester, linen, rayon, jute

1. Microscopic method
2. Flame test
3. Chemical test

**Testing of yarns/ fabric**

1. Count of the yarn using Wrap Reel
2. Count of the yarn using Beesley's Yarn Count Balance
3. Twist of the Yarn using Twist Tester
4. Determining the weight of the fabric
5. Determining the Fabric Count by
  - a. Ravelling Method
  - b. Pick Glass Method
6. Course Length and Loop Length of Knitted Fabric
7. Colour Fastness to Water
8. Test of Shrinkage
9. Test of Absorbency

**DIPLOMA PAPER I**  
**BASIC DRAPING PRACTICAL**

**Unit I**

Introduction to draping and dress forms.

**Unit II**

Draping basic front  
Draping basic back

**Unit III**

Draping basic skirt.

**Unit IV**

Draping Yokes – shirt yoke, Midriff yoke

**Unit V**

Draping Collars – Peter pan, Mandarin

**Reference:**

1. Dress pattern designing by Bray Natalie.
2. Dress Pattern designing by Natalie Bray.
3. Flat pattern cutting & modeling for fashion by Stanley Helen.

**SEMESTER IV      CORE PRACTICAL VI**

**DRAPING PRACTICALS.**

**Unit – I**

Introduction to draping and dress form, preparation of muslin and draping steps.  
Marking and trueing of bodice front and back.

**Unit –II**

Draping Basic Skirt pattern & truing the skirt. Joining the skirt to the bodice Making and truing of basic sleeve.

**Unit III**

Shaping the cap setting the sleeve and adjustment. Dart manipulation. Yokes and its variations.

**Unit IV**

Princess lines

**Unit V**

Collars – Peter pan and mandarin. Sleeve Raglan and kimono.

**References:**

1. Dress pattern designing by Bray Natalie.
2. Dress Pattern designing by Natalie Bray.
3. Flat pattern cutting & modeling for fashion by Stanley Hellen.

**SEMESTER IV      ALLIED PAPER IV**

**COMPUTER APPLICATION IN FASHION DESIGN – II PRACTICALS.**

1. Drafting Basic patterns for children, ladies, Men's apparel.
2. Pattern grading for children, ladies, and Men's apparel.
3. Lay planning for children, ladies and Men's apparel
4. Pattern Manipulation for children, ladies, and Men's apparel
5. Drafting different styles of sleeves, collars, and pockets.

**SEMESTER IV      CORE PAPER VI  
FABRIC STRUCTURE AND DESIGN**

**Unit – I**

Elements of woven design, methods of fabric representation weave repeat unit, draft & lifting plan construction for elementary weaves – plain, warp rib, weft rib, twill, Modification of twills, satin & sateen weaves, their derivatives.

## **Unit – II**

Ordinary & Brighten Honey comb, its modifications Huck a back & its Modifications; crepe weaves ; Mock leno.

## **Unit – III**

Extra warp & Extra weft figuring – single and two colors: planting, backed fabrics; Warp & weft backed fabrics.

## **Unit - IV**

Pile fabrics – Basic structure; twill back & sateen back; weft plush length density and fastness of pile; Terry pile – 3 pile, 4 pile and 6 pile.

## **Unit V**

Double cloth - classifications, self stitched – face to back, back to face ; stitched double cloth- warp, weft and center stitched double cloth.

## **References:**

1. Watson's Textile Design and colour, Grosichkli.Z. Newness Butter, Worths, London, 1980.
2. Watson's Advanced Textiel Design, Grosicki.Z. Newness butter worth, Bombay, 1989.
3. Knitting Technology, Spencer D.J.Perganion Bross, Oxford 1982.

## **CORE PRACTICAL VII FABRIC STRUCTURE AND DESIGN PRACTICALS.**

### **1. Identification of weaves structure, ends per inch and pics per inch by**

1. Pick glass method
2. Raveling method –

Plain – Plain weave, rib weave, Matt Weave

Twill – pointed twill, curved twill, Herring Bone twill and combination twill.

Sateen and satin,

Honeycomb

Huck-a back

Crepe weave.

## **SEMESTER – IV    CORE PAPER VII WET PROCESSING**

### **Unit – I**

Typical sequence of processes. Object and methods

Singeing, Desizing, Scouring, Synthetic Fiber Heat setting, Wool carbonizing, Weighting of silk.

Wet processing equipment – kier – J box – pad roll – U box – Roller bed – Conveyor steamer – stenter.

### **Unit II**

Mercerization – Theory process - Methods – Chemicals – effects.

Bleaching – Hypo chlorites – Hydrogen peroxide – sodium chlorite.

Equipments and chemicals for bleaching of cotton, viscose, cotton/ viscose

Polyester/ cotton.

Evaluation of bleached fabric – whiteness – absorbency – chemical damage - residues.

### **Unit III**

Dyeing – Classification of colorants – fastness properties of dyes

Dyeing – classification of colorants – fastness properties of dyes.

Dyeing machines – fiber, yarn and fabric dyeing machines – loose stock fiber bale – hank package – jigger – winch – HT Beam jet – padding mangles. Garment dyeing machines.

### **Unit IV**

Printing styles of printing – direct – discharge – resist styles.

Methods of printing – screen printing – automatic screen printing – roller printing – rotary printing – transfer printing. Fixation and after treatment.

### **Unit – V**

Wet processing of Knitted fabric – scouring – Bleaching dyeing – printing calendering.

Shrink controlling - steaming.

Wet processing of polyester, Nylon, silk, wool and their blends.

### **References:**

1. Paters R.H. Textile Chemistry” Vol. I,II Textile institute, Manchester 1970.
2. Shenai V.A.” Technology of textile processing” Vol. III, V, Vii, VII Sevale publications, Bombay 1981.
3. Lewis D.M.”Wool Dyeing” SDC publications England 1990.

## **CORE PRACTICAL VIII WET PROCESSING – PRACTICALS**

Preparation of samples for processing – Desizing, scouring, Bleaching

Dyeing – Acid basic, direct, Napthol, Sulphur, Vat & Disperse dyes, reactive dyes ( Hot and cold).

Test of absorbency

Test of shrinkage.

**SEMESTER – IV**  
**Diploma Paper –II**  
**SURFACE EMBELLISHMENT PRACTICALS**

Prepare samples for the following

1. Hand embroidery – 20 stitches -10 samples
2. Machine embroidery -7stitches -3 samples.
3. Applique ( machine / hand )- 3 types
4. Smocking -3types
5. Laces – 6 types
6. Bead Work -1 sample
7. sequins work -1 sample
8. Zardosi work -1 sample
9. Belts – any 2 types.
10. Bows –any 2 types
11. Tassels and fringes -2-3 samples.
12. Mirror work -1 sample
13. Fixing the stones-1 sample.

**SEMESTER – V**                      **CORE PRACTICAL IX**  
**MEN’S APPAREL PRACTICAL – I**

Designing, drafting and constructing the following garments for the features prescribed

List the Measurements required and Materials suitable

Calculate the cost of the garment

Calculate the material required – lay out method and direct measurement method

1. **S.B.Vest** – with/without collar, button, attached, sleeveless .
2. **T-shirt** – Front half open, zip attached, with collar
3. **Slack shirt** – with collar, half sleeve, patch pocket,
4. **Full sleeve shirt** – full open, shirt collar, patch pocket, full sleeve with cuff.
5. **Kalidhar Kurtha** - Kali piece, side pocket, round neck, half open
6. **Nehru Kurta** – half open, stand collar, with/without pocket, full sleeve
7. **House coat** – knee length, shawl collar, overlap front with belt.

**References:**

Scientific Garment quality – K.M.Illege and sons Plot No.43, Somuvar Peth, Pune 411 011.

Easy cutting – Juvekar, Commercial Tailors Coporation Pvt. Limited , 166, Dr.Ambedkar Road, Dadar.

Commercial system of cutting, - Juvekar, Commercial Tailors Coporation Pvt. Limited , 166, Dr.Ambedkar Road, Dadar.

Zarapker System of cutting, - K.R. Zarapker, Naveent Publications Limited,

Dress – making – smt. Thangam Subramaniam, Bombay tailoring and embroidery college, 32 North park street, Ambattur, Chennai.

Practical clothing construction – part and II Mary Mathews, Cosmic Press, Chennai.

**SEMESTER – V                      CORE PRACTICAL X**  
**COMPUTER APPLICATION IN TEXTILE DESIGN – I**

**1. WEAVE**

- Creation of various weaves
- Creation of various stripes, checks, plaids, dobby designs
- Application of colors
- Weave insertion
- Weave association
- Fabric simulation

**2. DESIGN AND REPEAT**

- Creation of designs
- Tracing of designs
- Repeat setting
- Changing of repeat
- Application of colors.

**3. JACQUARD**

- Creation of designs
- Tracing of designs
- Repeat setting
- Application of colors
- Application of weaves
- Fabric simulation

**4. KNIT**

- Creation of designs
- Tracing of designs
- Repeat setting
- Application of stitches
- Gauge setting
- Fabric Simulation

**SEMESTER V    CORE PAPER – VIII**  
**CLOTHING CARE**

**Unit – I**

Laundry equipment. Minimum requirements – Availability – Effective arrangements of space and equipment – purchase and maintenance of equipment.

Water – hard and soft water – Methods of softening water.

### **Unit – II**

Soaps and detergents – cleansing action of soap, indigenous cleaning agents like Rita nuts. Shikkakai – green gram- bran solutions.

### **Unit III**

Other agents used – stiffening agents – Natural and commercial starches – Preparation of starch; use blueing agents – their application – optical blues, bleaches, types of bleaches and other laundry reagents.

### **Unit – IV**

Principles of laundering – stain removal, methods of washing – Application of friction - hand friction, Rubbing and scrubbing - Application of light pressure, kneading and squeezing suction – washing – use of washing machine.

### **Unit – V**

Methods of finishing damping – Ironing Methods of ironing different garments - Drying equipments. Dry cleaning and storage. Visit to soap manufacturing factory and dry cleaning unit.

### **References:**

1. Textiles fabric & Their Selection, Wingate, I.B. Allied Publications Pvt. Ltd., Chennai.
2. Fundamentals of Textiels and Their care. Dantyagi.S. Orient Longman Ltd., New Delhi 1980.
3. Family clothing tate of Glession John wiley & Sons Inc., Illionois latest Edition.
4. Household textiles and laundry work durga Deulkar, Alma Ram & Sons, Delhi.

## **SEMESTER –V CORE PRACTICAL XI TEXTILE PRINTING PRACTICALS.**

**Exercise 1:** Preparation of sample for printing – cotton, silk, polyester

**Exercise 2:** Preparation of printing paste

**Exercise 3:** Preparation samples for hand block printing

**Exercise 4:** Stencil preparation & sample for stencil printing

**Exercise 5:** Screen preparation & samples for screen printing

**Exercise 6:** Tie & dye samples

**Exercise 7:** Batik samples.

## **SEMESTER V CORE – PAPER IX APPAREL PRODUCTION TECHNIQUE.**

### **Unit – I**

History of apparel industry

### **Unit – II**

Industry infrastructure – land, labour and capital and machinery.

### **Unit III**

Apparel production method –  
# Design, Sampling and costing  
# Fabric section

### **Unit - IV**

Fabric Layout, cutting room and bundling, sewing section.

### **Unit - V**

Finishing inspection and quality control, packaging.

### **Practicals.**

1. Visit to various apparel production unit and preparing the report.

### **References:**

1. Solinger, Jacob, Apparel Manufacturing Analysis, Newyork (1961) Textile books, futs.
2. Solinger, Jacob, Apparel Manufacturing Handbook, Analysis principles & practice, Columbia media corp.1988.

## **SEMESTER-V      Diploma Paper –III DYEING AND PRINTING METHODS**

### **UNIT-I**

Printing – Introduction to printing , differences between printing and dyeing , preparation of fabric for printing – cotton , linen, polyester, wool and silk, methods of printing, preparation of printing paste, selection of thickening agents.

### **UNIT-II**

Direct printing : Block printing – Brief History , Preparation of design , Blocks, table, print paste and printing process  
Stencil printing – Brief history , preparation of fabric , stencils (For one or more colour)  
Materials used for preparing stencils, process involved and techniques used .

### **UNIT-III**

Screen printing – brief history , Flat screen and Rotary screen printing , Preparation of screen , print paste , screen printing process,  
Discharge printing – chemicals used , process involved .

### **UNIT-IV**

Resist printing : Brief history, Batik printing wax used, Equipments required, process sequence and techniques used.  
Tie and dye – Brief history , Equipments required, process sequence and techniques used.

### **UNIT-V**

Other printing methods : Ink jet printing, Heat transfer printing , photo printing.

**References:**

1. Textiles – Ninth edition, Sara J Radolph and Anna L Langford, Prentice hall, New Jersey (2002).
2. Textile processing – J L Smith, Abhishek publications, Chandigarh (2003).
3. Textile Chemistry – Peters R H, Vol I, & II, Textile Institute Manchester (1970)
4. Beginners Guide to fabric dyeing and printing – Stuart & Robinson, Technical books, London (1982).
5. Thickening agents and Emulsion thickenings in textile printing – Herbert Barthm, New Delhi (1994).

**SEMESTER – VI      CORE PRACTICAL – XII  
MEN’S APPAREL PRACTICAL – II**

Designing, drafting and constructing the following garments for the features prescribed  
List the Measurements required and Materials suitable  
Calculate the cost of the garment  
Calculate the material required – lay out method and direct measurement method

1. **Pleated trousers** – pleats in front, darts at back, side pocket, fly with button /zip.
2. **Bell bottom trousers** – pleat less, bellbottom, side pocket, fly with button/ zip
3. **Boxer shorts**
4. **Bermudas**
5. **Jeans** – tight fitting, jeans, cut, with pockets
6. **Pyjama** – elastic/tape attached waist, with fly
7. **S.B.Coat** – coat collar, coat sleeve, pocket

**Reference:**

Scientific Garment quality – K.M. Illege and sons Plot No.43, Somuvar Peth, Pune 411 011.  
Easy cutting – Juvekar, Commercial Tailors Coporation Pvt. Limited, 166, Dr.Ambedkar Road, Dadar.  
Commercial system of cutting, - Juvekar, Commercial Tailors Coporation Pvt. Limited, 166, Dr.Ambedkar Road, Dadar.  
Zarapker System of cutting, - K.R. Zarapker, Naveent Publications Limited, Dress – making – smt. Thangam Subramaniam, Bombay tailoring and embroidery college, 32 North park street, Ambattur, Chennai.  
Practical clothing construction – part and II Mary Mathews, Cosmic Press, Chennai.

**SEMESTER – VI      CORE PRACTICAL – XIII  
COMPUTER APPLICATION IN TEXTILE DESIGN – II**

**1. COLORING**

- Importing the images
- Creation of various color ways

- Creating color atlas
- Creating various motifs, images

## **2. COLOR REDUCTION AND CLEANING**

- Importing the images
- Cleaning of colors
- Reduction of colors
- Separation of colors

## **3. STORY BOARD AND CATALOGUING**

- Importing the images
- Application of designs to images
- Creating story board

## **4. 3D TEXTURE MAPPING**

- Importing the images
- Selecting the outline
- Grid edition
- Mapping
- Processing at various levels

# **SEMESTER – VI CORE PAPER X KNITTING**

## **Unit I**

Knitting – Definition, classification and History, Types of knitting – hand and machine, characteristics of knitted goods.

## **Unit – II**

General terms and principles of knitting Technology, Machine knitting, part of machine, knitted loop structure, stitch Density.

## **Unit – III**

Weft knitting – classification – circular rib knitting machine, purl interlock, Jacquard – single Jersey machine – basic knitting elements – types and functions – knitting cycle, cam system – 3 way technique to develop design – knit, tuck, miss – effect of stitches on fabric properties.

## **Unit IV**

Warp Knitting – lapping variations – Tricot, raschel, simplex and Milanese – kitten raschel - single bar, Z bar, multi bar machines, types of threading , Production of nets, curtains, heavy fabrics, elasticized fabrics

## **Unit V**

Care and maintenance of knitted material.

### **Reference:**

1. David Speneer, "Knitting Teachnology", Pergamen Press, Oxford 1982.
2. D.B.Ajgonkar, " principles of knitting" Universal publishing Corporation, 1998  
"warp Knit Machine Elements, Wilkens 1997.

## **SEMESTER – VI CORE PRACTICAL XIV KNITTING PRACTICAL**

1. knit a fabric in a laboratory – knitting machine
2. Identification of knit sample by pick glass method and raveling method
3. Identification of technical face side and back side
4. Calculation stitch density

### **Weft Knits:**

1. Plain knit ( single jersey)
2. Double jersey - rib, interlock
3. Jacquard

### **Warp Knits**

- 1 . Tricot
2. Raschel.

## **SEMESTER VI DIPLOMA PAPER IV FASHION PORTFOLIO PRESENTATION**

1. Final design project should entail conceptualizing a design collection consisting of at least five ensembles which must demonstrate the creativity and understanding of the student towards the target customer. These collections should be displayed effectively in the form of a show or exhibition.
2. Presentation of final design project to a panel of examiners ( Internal and External) in the form of a written report. Also, project which deals with the development of a product design can also be included.

## **PORT POLIO DEVELOPMENT**

### **PRACTICAL**

Research conceptualize, illustrate at lease four design projects each consisting of five garments with sourcing, costing and flat sketches. Swatches of embellishments and construction details should also be incorporated.

## **ELECTIVE I - A**

### **TEXTILES AND APPAREL QUALITY CONTROL.**

#### **Unit – I**

Introduction and quality control concept, fabric faults, Grain, off grain, fabric width.

#### **Unit II**

Defects in weaving, dyeing printing and finishing. Bow and skew ness, color fastness for washing, rubbing light.

#### **Unit - III**

Shrinkage and wash ability. Sewing thread. Stitch length & stitches per unit length seam strength, seam slippage, seam finishes.

#### **Unit IV**

Quality control of constructional details – placket fastness. Neck finished and hem lines. Quality finishing of garment

#### **Unit – V**

Packing and packaging. Labels types and importance.

#### **Practicals:**

1. Study of various types of labels on textile material.
2. Study of various types of labels on ready to wear garments.
3. Preparation of care label for the garment prepared individually.

#### **References:**

1. Solinger, Jacob, Apparel Manufacturing Analysis, Newyork (1961) Textile books, futs.
2. Solinger, Jacob, Apparel Manufacturing Handbook, Analysis principles & Practice.

## **ELECTIVE I - B**

### **FABRIC PRODUCTION AND PROCESSING**

#### **Unit I :**

Fabric forming Techniques – Comparison of weaving and knitting – Principles and Comparison of weft and warp knitting - Classification of machines – Terms and definition of knitting – Basic structures and characteristics – Features of modern knitting machineries.

#### **Unit II:**

Formation of tuck and miss stitches and their influence on knitting fabrics – Methods and structures – Need and possibilities. Elastomeric yarn types and its effects in knitting –

Study of single Jersey and its derivative structures: Pique, Double pique, Lacoste, pearl and Twill. Study of rib and its derivative: Half cardigan, milano rib, Rib waffle and flat back rib. Concept of 2\*2 Rib and rib drop needle. Interlock Derivative: Eight lock, Ottoman Rib, Ponte-Di-Roma, Texipique and Pin tuck. Areal density and production calculation of circular knitting machines.

**Unit III:**

Weaving Definition – Terms related to woven fabric – Classification of Looms – Sequencing of weaving preparation process – Passage of material through plain loom – Important motions of a loom – Parts of a Loom – Introduction to woven fabric Design and their derivatives.

**Unit IV:**

Introduction to Processing – Study of preparative process of dyeing and objectives – Dyes and pigments - Classification – Principles and methods of knitted fabrics – Concept of Tie & Dye methods – Study on garment dyeing.

**Unit V:**

Printing – Comparison of Dyeing and Printing – methods of Printing – study of screen and Rotary Print. Styles of Printing – Study of non conventional printing styles employed in garment printing – Principles and working of garment printing machines. Printing ingredients and model recipe formulation. Need and objectives of finishing – Classification – Brief Study of various mechanical and chemical finishers.

**BOOKS FOR REFERENCE:**

1. D.B. Ajgoankar, Knitting Technology, Universal Publishing Corporation, Mumbai 1998.
2. David.J.Spencer, Knitting Technology, Woodhead Publishing Limited, Second Ed, England, 1989.
3. Shenai.V.A, Technology of Bleaching and Mercerising Sevak Publications, Mumbai -31.
4. E.R.Trotman, Textile Scouring & Bleaching , B.I Publications Private Ltd, New Delhi, 1968

**ELECTIVE I - C**

**ENTREPRENEURIAL DEVELOPMENT**

**Unit I :**

Concept of Entrepreneurship: Definition Nature and Characteristics of Entrepreneurship - Functions and types of Entrepreneurship phases of EDP. Development of women Entrepreneur and rural Entrepreneur – including self employment of women council scheme.

**Unit II:**

The Start – up process, Project Identification – Selection of the product – Project formulation evaluation – Feasibility Analysis, Project Report.

**Unit III:**

Institutional service to Entrepreneur – DIC, SIDO, NSIC, SISI, SSIC, SIDCO, ITCOT, IIC, KUIIC and commercial Bank.

**Unit IV:**

Institutional finance to Entrepreneur – IFCI, SFC, IDBI, ICICI, TIIC, SIDCS, LIC and GIC, UTI, SIPCOT – SIDBI and commercial Bank venture capitals.

**Unit V:**

Incentives and subsidies – Subsidied Services – Subsidy for market. Transport – seed capital assistance – Taxation benefit to SSI – role of Entrepreneur in export promotion and import substitution.

**BOOKS FOR REFERENCE:**

1. Entrepreneurial Development – C.B. Gupta and N.P. Srinivasan
  2. Fundamentals of Entrepreneurship and small Business – Renu Arora and S.KI.Sood
  3. Entrepreneurial Development – S.S.Khanka
  4. Entrepreneurial Development – P.SaravanaVel
  5. Entrepreneurial Development – S.G.Bhanushali
  6. Entrepreneurial Development – Dr.N. Ramu
- 
1. Costumes of India & Pakistan – D.B. taraporeeala Sons & Co Bombay 1958.
  2. Indian costumes – Ghurye.G.S.
  3. Traditional Indian textiles – John Gillow & Nicholas Barnard (1996), Published by Thames & Hudson Ltd, London.
  4. Awakening Indians to Indua by Chinmaya Yuvakendra published by Central Chinmaya Museum Trust, Mumbai, August 2002.

**SEMESTER VI ELECTIVE II - A  
ENTREPRENEURSHIP DEVELOPMENT & MANAGEMENT.**

**Unit I**

Introduction to EDP Entrepreneurial motivation.

**Unit – II**

Enterprise planning. Identifying a feasible enterprise. Steps in setting up an enterprise

**Unit – III**

Types of enterprise sources of information about financial institutions

**Unit – IV**

Financing procedures. Resources management. Marketing and sales management

**Unit – V**

SWOT analysis – Strength weakness, opportunities and threat,  
Legal issues – licensing, registration, municipal laws, insurance coverage, factory act,  
Income tax, sales tax, and excise rules.

**Practical:**

2. Visit to various local entrepreneurs
3. Preparing individual project and presentation before the month of June.

**Reference:**

1. Sharma R.K. – Development banks & entrepreneurship promotion in India, Mital publication, New Delhi( 1991).
2. Battacharya – Entrepreneurship development in India and at south east Asian countries Amrishing Prasad Publishing, New Delhi 1983.

**Elective II - B**

**APPAREL PRODUCTION MANAGEMENT**

**Unit I :**

Nature and scope of management – Management Science/Art – Development of management theory – Scientific management – Henry Foyal’s principles of management.

**Unit II:**

Planning – Meaning and purpose of planning – Steps in planning – Types of planning – Objectives and policies – Objectives, policies, procedures and methods, nature and types of policies – Decision making – Process of decision making – Types of decisions – Problems involved in decision making.

**Unit III:**

Organizing – Types of organization – Organizational structure – Span of control – Committees. Delegation and centralization line & staff relationship – staffing – Sources of recruitment – Selection process – Training methods – Performance appraisal.

**Unit IV:**

Directing – Nature and purpose of directing – Motivation – Discipline – Leadership – Supervision – Communication – Requirements for effective controls – Critical control points and standards.

**Unit V:**

Controlling – Need for co-ordinating – Meaning and importance of control – control process – types of control.

**BOOKS FOR REFERENCE:**

1. O.P.Khanna, Industrial Engineering and Management, Dhanapat Rai Publications, New Delhi(2006).
2. Patrick.J.Montana and Bruce.H.Charnov,Management, Barrows(2000).
3. D.P.Jain, Business Organisation and Management, Vrinda Publications(1999).
4. Harold Koontz and Heinz Weihrich, Essentials of Management, Tata McGraw Hill(1998).

**ELECTIVE II - C**

**BUSINESS FINANCE**

**Unit I :**

Business Finance: Introduction – Meaning – Concepts – Scope – Functions of finance, Traditional and modern concepts – content of modern finance functions.

**Unit II:**

Financial Plan: Meaning – Concept – objectives – Types – Steps – Significance – Fundamentals.

**Unit III:**

Capitalisation – Bases of Capitalisation – Cost Theory – Earning Theory – Over Capitalisation – Under Capitalisation – Symptoms – causes – remedies – Watered Stock Vs. Over Capitalisation.

**Unit IV:**

Capital Structure – Cardinal Principles of capital structure – Trading on equity – Cost of capital – concept – Importance – Calculation of Individual and composite cost of capital.

**Unit V:**

Sources and forms of Finance: Equity Shares, Preference Share, Bonds, Debentures and fixed deposits – features – advantages and disadvantages.

**BOOKS FOR REFERENCE:**

1. Essentials of Business Finance – R.M.Sri Vatsava
2. Financial Management – SaravanaVel
3. Financial Management – L.Y.Pandey
4. Financial Management – S.C.Kuchhal
5. Financial Management – M.Y.Khan and Jain

## **ELECTIVE III – A INDIAN ART AND COSTUME**

### **Unit I**

Traditional forms of art

### **Unit II**

Evolution of Indian form Indian sculpture – Major source for Indian costume

### **Unit III**

Painting tradition in India – Murals & Miniature –  
Kalamkari, Madhubani, Pithoro, Tanjore, ravi varma, raga maliga etc.,

### **Unit IV**

Study of costumes during the following periods.

- Indus valley
- Vedic period
- Mauryan and sunga period
- Satavahana period
- Kushan period

### **Unit V**

Study of costumes during the following periods.

- Gupta period
- Mughal period
- British period
- Contemporary period

### **References:**

5. Costumes and textiles of Royal India – Ritu Kumar Published by Christie's Books

## **Elective III - B**

### **EXPORT ANALYSIS & DOCUMENTATION**

#### **Unit I :**

Cost estimation of yarn, knitted fabric, dyeing, printing & finishing. Cost estimation for cutting, stitching, checking, forwarding, shipping and insurance –INCO terms & their relationship with costing. Estimation of factory cost for vest, briefs, shorts, T-Shirts, pyjamas, children's wear and women's wear. Various factors to be considered in costing for domestic products & international products.

**Unit II:**

Introduction – Apparel Export promotion Council and its role – Registration formalities – Registration cum membership certificate – Import Export code – RBI code. Benefits and incentives offered by Government of India to garment export. Role of SEZ and apparel parks in export.

**Unit III:**

Need, rationale and types of documents relating to goods – Invoice – Packing note and list – Certificate of origin – Certificates related to shipment – Mate receipt – Shipping bill – Certificate of measurement – Bill of lading – Air way bill – Documents related to payment – Letter of credit – Bill of exchange – Letter of hypothecation – Bank certificate for payment – Document related to inspection – Certificate of inspection – GSP and other forms. Importance of insurance of goods in foreign trade – ECGC and its role.

**Unit IV:**

Import license – Procedure for import license – Import trade control regulation procedure – Special schemes – Replenishment license – Advance license – Split up license – Spares for after sales service license – Code number – Bill of entry.

**Unit V:**

Pre shipment inspection and quality control – Foreign exchange formalities – Pre shipment documents. Shipment of goods and port procedures – Customs clearance.

**BOOKS FOR REFERENCE:**

1. Paras Ram, Hand Book of Import and export Procedures

## **ELECTIVE III - C**

### **APPAREL QUALITY MANAGEMENT**

**Unit I :**

Meaning of quality, testing and standard and their importance in apparel industry – Quality terminologies – Sources of international standards.

Quality Parameters of yarn: Yarn evenness & hairiness and their effect on fabric quality. Quality parameters of fabric: Brief study of fabric pilling resistance, bursting strength, colour fastness and dimensional stability. Testing of sewing threads, zippers, fusible interlings, buttons and fasteners.

**Unit II:**

Inspection: Incoming and raw material inspection: Fabric inspection – 4-point system. In process/ on-line inspection: Advantages – On line inspection during spreading, pattern making, cutting, sewing and ironing.

Final inspection: Sampling plans and AQL charts – Level of final inspection. Packing & packaging quality tests. Care labeling and international care symbols.

**Unit III:**

Principles of TQM – Deming’s PDCA Cycle - KAIZAN concepts – 5 ‘S’ applications in apparel industry. Application of seven QC tools in apparel industry.

**Unit IV:**

Understanding of ISO 9001:2000 standards: QMS, management responsibility, resource management, product realization and measurement analysis & improvement – Various documents required for ISO 9001:2000 implementation and its contents – Development of quality system manual for garment industry.

**Unit V:**

Documented procedures required for ISO 9001:2000 implementation – Procedures for internal quality audit – Management review meeting – Certification process – Surveillance audit.

**Text Book**

Pradeep V Mehta, Managing the Quality in Apparel Industries, New Age International (P) Ltd, New Delhi – 1998 Edition.

**BOOKS FOR REFERENCE:**

1. D.L.Shah Trust, ISO 9000 Quality Management System, DL Shah Trust.
2. Booth J.E, Principles of Textile Testing, CBS Publishers and Distributors, New Delhi, First Edition.
3. Kothari V.K. Testing and Quality Management, IAFL Publications, New Delhi, First Ed, 1999.