**Total Contact Hours = 29** **Total Marks = 800** **Total Credits = 19**

| SEMESTER 1st | | Contact Hrs. | | | Marks | | | Credits |
|---|---|---|---|---|---|---|---|---|
| **Subject Code** | **Subject Name** | **L** | **T** | **P** | **Int.** | **Ext.** | **Total** | |
| **BFTE2-101** | Elements of Fashion | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-102** | Communication and Soft Skills | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-103** | Introduction to Textiles-1 | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-104** | Elements and Principles of Design-1 Lab | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-105** | Pattern Making-1 Lab | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-106** | Fundamentals of Computer Lab | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-107** | Garment Construction-1 Lab | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-108** | Basic Sketching-1 Lab | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **Total** | | **9** | **0** | **20** | **420** | **380** | **800** | **19** |

**Total Contact Hours = 31** **Total Marks = 900** **Total Credits = 23**

| SEMESTER 2nd | | Contact Hrs. | | | Marks | | | Credits |
|---|---|---|---|---|---|---|---|---|
| **Subject Code** | **Subject Name** | **L** | **T** | **P** | **Int.** | **Ext.** | **Total** | |
| **BFTE2-209** | Fashion Studies | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-210** | Fashion and Apparel Design | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-211** | Elements and Principles of Design | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-212** | Textiles and Embroideries of India | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-213** | Textile Studies – II | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-214** | Pattern Making – Lab. | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-215** | Garment Construction – Lab. | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-216** | Computer Aided Designing – Lab. | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-217** | Sketching – II Lab. | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **Total** | | **15** | **0** | **16** | **440** | **460** | **900** | **23** |

**Total Contact Hours = 30** **Total Marks = 900** **Total Credits = 24**

| SEMESTER 3rd | | Contact Hrs. | | | Marks | | | Credits |
|---|---|---|---|---|---|---|---|---|
| **Subject Code** | **Subject Name** | **L** | **T** | **P** | **Int.** | **Ext.** | **Total** | |
| **BFTE2- 318** | Apparel CAD & Grading | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-319** | Garment Manufacturing Technology – I | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-320** | Fabric Studies | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-321** | Knitting and Knitted Garments | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-322** | Fashion Studies | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-323** | Garment Construction Lab –I | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-324** | Pattern Making Lab. - I | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-325** | Fabric Analysis Lab. - I | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **Department Electives - I** | | **3** | **0** | **0** | **40** | **60** | **100** | **3** |
| **BFTE2-356** | Home Textiles | | | | | | | |
| **BFTE2-357** | Surface Ornamentation Techniques | | | | | | | |
| **BFTE2-358** | Technical Textiles | | | | | | | |
| **Total** | | **18** | **0** | **12** | **420** | **480** | **900** | **24** |



**Total Contact Hours = 30** **Total Marks = 900** **Total Credits = 24**

| SEMESTER 4th | | Contact Hrs. | | | Marks | | | Credits |
|---|---|---|---|---|---|---|---|---|
| **Subject Code** | **Subject Name** | **L** | **T** | **P** | **Int.** | **Ext.** | **Total** | |
| **BFTE2- 426** | Apparel Marketing & Merchandising | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-427** | Industrial Engineering | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-428** | Testing & Quality Control in Apparel | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-429** | Garment Manufacturing Technology - II | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-430** | Textile and Garment Finishing - I | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-431** | Garment Construction Lab. -II | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-432** | Pattern Making Lab. - II | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-433** | Textile Testing Lab. | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **Open Elective – I** | | 3 | 0 | 0 | 60 | 40 | 100 | 3 |
| **Total** | | **18** | **0** | **12** | **440** | **460** | **900** | **24** |

**Total Contact Hours = 30** **Total Marks = 900** **Total Credits = 24**

| SEMESTER 5th | | Contact Hrs. | | | Marks | | | Credits |
|---|---|---|---|---|---|---|---|---|
| **Subject Code** | **Subject Name** | **L** | **T** | **P** | **Int.** | **Ext.** | **Total** | |
| **BFTE2- 534** | Production Planning & Control | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-535** | Costing and Retailing Management | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-536** | Material Studies | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-537** | Textile & Garment Finishing -II | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-538** | Project & Seminar | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-539** | Finishing Lab. | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-540** | Pattern Making & Grading Lab. | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **BFTE2-541** | Advance Apparel Construction Lab | 0 | 0 | 4 | 60 | 40 | 100 | 2 |
| **Open Elective –II** | | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **Total** | | **18** | **0** | **12** | **420** | **480** | **900** | **24** |



**Total Contact Hours = 26** **Total Marks = 300** **Total Credits = 21**

| SEMESTER 6th | | Contact Hrs. | | | Marks | | | Credits |
|---|---|---|---|---|---|---|---|---|
| **Subject Code** | **Subject Name** | **L** | **T** | **P** | **Int.** | **Ext.** | **Total** | |
| **BFTE2- 642** | Plant Layout & Facility Design | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-643** | Apparel Technology Management | 3 | 0 | 0 | 40 | 60 | 100 | 3 |
| **BFTE2-644** | Project | - | - | 20 | 60 | 40 | 100 | 15 |
| **Total** | | **6** | **0** | **20** | **140** | **160** | **300** | **21** |

## ELEMENTS OF FASHION

**Subject Code: BFTE2-101** **L T P C** **Duration: 29 Hrs.**
**3 0 0 3**

### UNIT–I (9 Hrs.)

General Definition of Fashion, Types of Fashion and Basic Terms, Fashion Cycle, Haute Couture, Street Fashion, Fashion Forecasting: Steps in Developing a Forecast, Concepts of season, Fairs and International Markets. Study of Great International Designers and Domestic Designers.

### UNIT-II (9 Hrs.)

The awareness of the various aspects of colour will enhance the application of colour in design. Colour Theory: Colour Wheel, Monochromatic, Achromatic, Analogue, Complimentary, Split Complimentary and Tint, Tone, Shades. Textures –an introduction to the basic materials, creating textures using all, art media like pencils, crayons, pastels, paints etc.

### UNIT-III (11 Hrs.)

Elements of Designs: Line, Shape, Texture, Colour, Value. Principles of Design: Unity, Emphasis, Proportion, Rhythm, Balance. Theme Board and Mood Board

**Recommended Books**

1. Marvin Bartel, ‘Composition and Design’.
2. Richard Sager, ‘Fundamentals of Fashion Design’.
3. Manmeet Sodhia, ‘Fashion Studies’.
4. Manmeet Sodhia, ‘Fashion Illustration’.



## COMMUNICATION & SOFT SKILLS

**Subject Code: BFTE2-102** **L T P C** **Duration: 29 Hrs.**
**3 0 0 3**

### UNIT-I (5 Hrs.)

Communication, Definition, Introduction and Process of Communication, Objective of Communication.

### UNIT-II (12 Hrs.)

Parts of Speech: Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Articles and Conjunction.

Tenses (in detail), Voice (Active, Passive), Narration (Direct, Indirect), Antonyms, Synonyms, Homonyms, Prefix, Suffix.

### UNIT-III (12 Hrs.)

- Letters and
- Job Applications,
- Creative Writing,
- Comprehension.

**Recommended Books**

1. Abhishek Arora, ‘Business Communication’.
2. T. Singh., ‘Communication Skill Part-1’.

## INTRODUCTION TO TEXTILES

**Subject Code: BFTE2-103** **L T P C** **Duration: 29 Hrs.**
**3 0 0 3**

**UNIT-I (6 Hrs.)**

Textile Industry: Introduction and History. Fiber Properties and its Classification. Different methods of fiber identification: Physical Examination, Burning Test, Chemical Test.

**UNIT-II (15 Hrs.)**

Flow Chart from fiber to fabric. Properties of natural fiber (Vegetable and Animal) i.e. Cotton, Flex, Wool, Silk, Jute. Properties of synthetic fiber i.e. Polyester, Nylon, Acrylic, Rayon, Spandex, Polyolefin. Yarn classification, Yarn spinning, Yarn numbering system.

**UNIT-III (8 Hrs.)**

1. Basics of weaving
2. Basic weaves
3. Introduction to Non-Woven fabrics
4. Common fabric names
5. Care Labelling

**Industrial Visit in Spinning Mill.**

**Recommended Books**

1. K.V.P. Singh, 'Introduction to Textiles', Kalyani Publishers.
2. Bernard P. Corbman, 'Textiles-Fiber to Fabric', McGraw Hill.
3. Jannet Wilson, 'Classicand Modern Fabrics'.
4. Bradley Quinn, 'Textile Future Fashion Design and Technology'.



## ELEMENTS & PRINCIPLES OF DESIGN-1 LAB.

**Subject Code: BFTE2-104** **L T P C**
**0 0 4 2**

1. Colour wheel: primary, secondary and tertiary colour scheme.
2. Principles of design and its importance in designing: Harmony, emphasis, proportion, balance, rhythm and contrast.
3. Elements of basic design: Line, Form, Composition, colour, texture etc.
4. Theory of Colour: warm, cool, hot, cold, light, dark pale and bright.
5. Basic colour schemes: analogues, complimentary, monochromatic, neutral etc.
6. Study of Positive and Negative- Grey scale.
7. Colour composition
8. 3D Forms
9. Sketch any five designs of garment use element and principles of design.

## PATTERN MAKING-1 LAB.

**Subject Code: BFTE2-105** **L T P C**
**0 0 4 2**

1. Method of taking measurements: - Tools and basic principles of taking measurements
2. Basic principles of flat pattern making: -Equipment and knowledge to use this equipment
3. Drafting of child bodies block and sleeve
4. Drafting of adult bodies block and sleeve
5. Developing patterns for the following: -

**Basic Sleeve Block and Sleeve Variations**:

a) Puff sleeves - with gathers at the sleeve cap and round arm, gathers only at the sleeve cap and gathers at the round arm; Bishop sleeve
b) Shirt sleeve
c) Petal sleeve
d) Flared sleeve sleeve
e) Leg'O'mutton sleeve
f) Tulip sleeve
g) Lantern sleeve
h) Cap sleeve

**Collars and its Variations**: - Flat and rolled collars, Peter Pan, Cape, Sailors, Puritan, Stand and fall, Mandarin, shawl collar.

## FUNDAMENTALS OF COMPUTER LAB.

**Subject Code: BFTE2-106** **L T P C**
**0 0 4 2**

1. **Definition of Computer:** Data, Instruction and information, Characteristics of Computer, Various Field of Application of Computer, Block Structure of computer, Advantages and Limitations of computer, Classification of Computer. Data Representation: Different number system (decimal, binary, octal and hexa decimal), Input and Output Devices.
2. **What is Software:** System software, Application Software (Corel Draw, Adobe Photoshop), Compiler and Interpreter. Computer Memory: Primary and Secondary Memory. Storage Media.
3. **Introduction to MS-Word:** Introduction to word processing and its features, formatting documents, paragraph formatting, indents, page formatting, header & footer, Bullets & Numbering, Tabs, Tables, Formatting the Tables, Finding and Replacing the Text etc.
4. **Introduction to MS-Power Point:** PowerPoint, Features of MS PowerPoint Clipping, Slide Animation, Slide Shows, Formatting etc.
5. **Introduction to MS-Excel:** Introduction to Electronic Spreadsheets, Feature of MS Excel, Entering Data, Entering Series, Editing Data, Cell Referencing, ranges, Formulae, Functions, Auto Sum, Copying Formula, Formatting Data, Creating Charts, Creating Database, Sorting Data, Filtering etc.
6. **Introduction of Internet:** Advantages and Limitations. E-Mail, WWW, Websites, Protocols, TCP/IP, FTP, TELNET.

## GARMENT CONSTRUCTION-1 LAB.

**Subject Code: BFTE2-107** **L T P C**
**0 0 4 2**

1. Tools and equipment used in garment clothing construction.
2. Sewing machine: parts, working and maintenance of sewing machine, its threading' bobbin winding.
3. Introduction to sewing thread, needles and their relationship with the fabric.
4. Common problems of sewing and its remedies.
5. Fabric preparation and basic rules for cutting of fabric. Definition and understanding of hand stitching techniques: Running Basting: uneven/even/diagonal
6. Hemming - Plain, blind, slip.
7. Backstitch, tailor's tack, button hole, overcasting.

8. Seams and seam finishes: Definition, their usage and b/pes: Plain, flat fell' lap' French, piped, corded, Eased, taped, bound (over locked).
9. Fullness techniques/shaping devices: dart, tucks, pleats, gathers, ruffles, shining, smocking
10. Application of buttons and buttonholes, hooks and eyes, snap fasteners.
11. Application of lace and binding.
12. Create a project to using these applications mentioned above.

## BASIC SKETCHING-1 LAB.

**Subject Code: BFTE2-108** **L T P C**
**0 0 4 2**

1. Introduction to Basic Sketching.
2. Introduction to Model Drawing.
3. Introduction to Prospective Drawing, Still life, Scribbling Drawing.
4. Textures in Pencil rendering and shading.
5. Silhouette/Shapes: - Basic types of Shapes.
6. Fashion Figures: - Difference between normal and fashion figures.
7. Drawing the Eight head (8")/Stick figure/Block figure/Slash figure: - (Male and Female)
8. Quick sketching: - create sketch without eraser in 3-5 minutes.
9. Using only Black and White Media.



## FASHION STUDIES

**Subject Code: BFTE2-209** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** The main objective of this course is to make the student understand the intricacy and importance of Fashion.
Discussion on the course structure.

**UNIT-1**

Definition of Fashion.
a) Motives for consumer buying-practical and aesthetic.
b) Clothes vs fashion.
c) Inspirational sources of fashion (relating them to elements of fashion)

**UNIT-II**

a) Color-color wheel, dimensions of color, color naming and psychological association of colors.
b) Fabric, texture and line (relating them to principles of design) Interplan of elements of design (relating it to anthropometrics)

**UNIT-III**

Silhouettes-
a) Necklines, collars and sleeves
b) Variations of skirts, dresses and trousers.
c) Variations of coats and jackets
d) Detailing- pleats, tucks, darts, yokes and godets.
e) Detailing – hemlines, edgings, pockets and fastenings.

**UNIT-IV**

Fashion cycle-
a) Concept of haute couture, Ready to wear and street fashion.
b) Indian designers

c) Trimmings and accessories.

## FASHION AND APPAREL DESIGN

**Subject Code: BFTE2-210** **L T P C** **Duration: 37 Hrs.**
**3 0 0 3**

**UNIT-I (8 Hrs.)**

1. Fashion Forecasting – Concept of seasons, fairs and international markets.
2. International designers

**UNIT-II (10 Hrs.)**

1. Brand Analysis – Fashion & Textile Accessories.
2. Fashion Criticism

**UNIT-III (11 Hrs.)**

1. Psychology of colour and its application in apparel market.
2. Introduction of texture (prepare file too).
3. Texture: its types and application on clothing.

**UNIT-IV (8 Hrs.)**

1. Wardrobe planning
2. Process of Design development for formal, casual, executive, party and sportswear for male and female

Field visit to understand the available fabric and trims leading to class presentations.



## ELEMENTS AND PRINCIPLES OF DESIGN

**Subject Code: BFTE2-211** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objective**: Students are provided with an understanding of mood boards and importance of presenting creative design for the fashion industry through good layouts. Integration of computer inputs into art is encouraged. Principles of line planning (developing a collection)

**UNIT-I (9 Hrs.)**

1. To develop Mood boards with special emphasis on relating the foreground to the background layout and composition cut and paste techniques and hand crafting techniques. (minimum 5)

**UNIT-II (10 Hrs.)**

1. Application of elements and principles of design to develop a range of garments on paper keeping in view the inspiration and mood /profile of the client.5 sets

**UNIT-III (9 Hrs.)**

1. Introduction to making of specification sheet of basic garments like blouses, shirts, T-shirts, Paints, Jacket.
2. Demographics and psychographics of customer profile.

**UNIT-IV (10 Hrs.)**

Exercise in visually assessing and relating fashion illustration to specs. For the above developed 5 sets.

## TEXTILES AND EMBROIDERIES OF INDIA

**Subject Code: BFTE2-212** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To Study Different traditional textiles originated in various regions of India keeping in view the Socio cultural background, Techniques / material, Colour / motifs / Evolution or changes over time/Present scenario/Contemporary usage

**UNIT-I (9 Hrs.)**

**Woven Textiles**

1. Carpets
2. Shawls
3. Sarees - Chanderi, Maheshwari, Kanjeevaram, Paithani, etc.
4. Brocades

**UNIT-II (10 Hrs.)**

**Embroidered Textiles**

1. Kantha
2. Phulkari
3. Chikankari
4. Kasuti
5. Kashida
6. Embroidery of Gujrat & Rajasthan.

**UNIT-III (10 Hrs.)**

**Resist Dyed Textiles**

1. Bandhani
2. Ikat
3. Patola

**UNIT-IV (9 Hrs.)**

**Printed and Painted Textiles**

1. Block printed textiles from Gujarat
2. Block printed textiles from Rajasthan
3. Ajrakh
4. Kalamkari



## TEXTILE STUDIES-II

**Subject Code**: **BFTE1-213** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To introduce the students to the basics of dyeing and printing

**UNIT-I (9 Hrs.)**

1. Fibers:
2. Introduction, classification, properties and end uses of natural and man-made fibers,
3. Yarns: Introduction. Types-ply yarns, novelty yarn, textured yarn.

**UNIT- II (10 Hrs.)**

1. Manufacturing process-.
2. Spinning, weaving, knitting and non-woven
3. Properties-yarn twist, yarn numbering.
   a) Introduction to fabric
   b) Characteristics and classification of impurities
   c) Introduction to the preparatory processes of dyeing for cotton – Singeing, desizing, scouring, bleaching, mercerization.

**UNIT-III (9 Hrs.)**

a) Definition of color, dyes, pigment
b) Classification of dyes
c) Application of dyes on textiles
d) Stages of dyeing – Fiber, yarn, fabric and garment

**UNIT-IV (10 Hrs.)**

a) Methods of printing
b) Environmental Concerns
c) Field trip to a dyeing & printing unit will be taken.

**Recommended Books**

1. Joseph J. Puzzuto, 'Fabric Science'.
2. V.A. Shenai, 'Technology of Dyeing, Printing and Bleaching'.

## PATTERN MAKING LAB.

**Subject Code: BFTE1-214** **L T P C** **Duration: 39 Hrs.**
**0 0 4 2**

**Course Objectives:** The main objective of this subject is to make the students understand the basic of pattern making involved in any exercise or assignment undertaken during the course. This is the very basis of the core specialization that they will ultimately learn through the semesters. To develop skill in the area pattern making with special emphasis on basics of garments design.



**UNIT-I (10 Hrs.)**

a) Drafting and pattern making terminology.
b) Principles of pattern cutting.
c) Balanced line terms.
d) Symbol key, notches and punches.

**UNIT-II (10 Hrs.)**

a) Childs bodice block (5year in inches).
b) Slash method: collar – Peter pan (one-two piece), Cape, fall collar, Chinese, rippled, cowl,
c) Sleeves:-( puff, flared, Ruffle, shirred, bell, bishop, umbrella, lantern),
d) Skirt (hip rider, cascade/partial circles, gored, pegged, wrap around, handkerchief, shirred, slashed, pleated).

**UNIT-III (10 Hrs.)**

Drafting and pattern making, layout of

a) Trouser or Nicker
b) Jump suit.

**UNIT-IV (9 Hrs.)**

Drafting and pattern making, layout of

a) A-line frock, casual frock, Yolk, princess and empire lines.
b) Drafting of apron

**Recommended Books**

a) Manmeet Sodhia, 'Drafting and pattern making', Kalyani Publishers.
b) Helen Joseph-Armstrong, 'Pattern making for Fashion Design,' 4th Edn.

## GARMENT CONSTRUCTION- LAB.

**Subject Code: BFTE1-215** **L T P C** **Duration: 38 Hrs.**
**0 0 4 2**

**Course Objectives:** To understand and appreciate different hand and machine sewing techniques and obtain fabricating skills for the same.

**UNIT-I (9 Hrs.)**

**Understanding of Basic Techniques Practically like**

a) Basting: uneven/even/diagonal running stitch.
b) Hemming: plain, blind, slip.
c) Marking.
d) Padding.
e) Button hole.

**UNIT-II (9 Hrs.)**

A) Definition and understanding of basic seams practically Plain/ Flat Fell/ Lap/ French and False French/ Bound/ Bias/ Corded/ Piped/ Eased/ Princess/ Taped.

**UNIT-III (10 Hrs.)**

POCKET MAKING AND APPLICATION

1. Patch pockets- different types
   a) Unlined patch pockets
   b) Lined patch pockets
   c) Patch pockets with flap
2. Patch pocket with self-flap INSIDE POCKETS
   a) Reinforcing in-seam pockets
   b) Fabricating bound pockets
   c) Welt pocket with flap



**UNIT-IV (10 Hrs.)**

FASTENERS

1. Inserting a zip fastener:
   a) Centred standard
   b) A lapped standard zip
   c) Concealed zip
   d) Open end zip
2. BUTTONS- Types attaching
   a) Hook and eye
   b) Press-studs
   c) Touch and close

## COMPUTER AIDED DESIGNING LAB.

**Subject Code: BFTE1-216** **L T P C** **Duration: 38 Hrs.**
**0 0 4 2**

**Course Objectives:** The main objective of this subject is to make the students understand the basic of Computer Application various tools of software. Photo shop & Corel draw to design collection.

**UNIT-I (10 Hrs.)**

Knowing and understanding the use of all the design tools of Corel Draw **to develop** Fashion Details

a) Collars
b) Sleeves

c) Cuff

**UNIT-II (10 Hrs.)**

Knowing and understanding the use of all the design tools of Corel Draw **to develop** Fashion Details

a) Necklines
b) Pockets
c) Plackets

**UNIT-III (8 Hrs.)**

a) Skirts
b) Trouser
c) Ties & Bows

**UNIT-IV (10 Hrs.)**

a) Block Figure
b) Flesh Figure

**Recommended Books**

Corel draw Users' guide/Manual accompanying the software.
Corel draw for dummies

## SKETCHING-I LAB.

**Subject Code: BFTE1-217** **L T P C** **Duration: 40 Hrs.**
**0 0 4 2**



**Course Objectives:** The objective of the course is to increase the proficiency in drawing skills and to inculcate creative ability in the application of these acquired skills to translate as ideas for design. Also, to make the students understand the applications of different mediums to draw an\colour and render such as pencils, colour pencils, water colours, crayons, etc.

**UNIT-I (10 Hrs.)**

Familiarity with the anatomy of the human body
Understanding of body proportion with special reference to:
a) Anatomy b) Movement c) Posture d) Details of the Garments worn by the live model.
Understanding of the movement of the human body

**UNIT-II (10 Hrs.)**

a) Introduction to Female croqui for casual/formal wear both for the export as well as domestic market.
b) Development of children croqui for playwear/formalwear

**UNIT-III (10 Hrs.)**

a) Relative differences between normal and fashion figure
b) Rendering, shading & colouring the garments worn by the live model.

**UNIT-IV (10 Hrs.)**

1. Drawing the Garment:
   a) Understanding fabrics folds (flat sketching of tops, skirts, and trousers).
   b) Laying down multiple washes.
   c) Rendering texture of fabrics.
2. Costume anatomy (style lines)
3. Garment draping on fashion figure.

## APPAREL CAD & GRADING

**Subject Code: BFTE2-318** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To introduce CAD for Apparel and computer software related to pattern making, grading and marker planning.

**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

**UNIT-I (9 Hrs.)**

Fundamentals of CAD: Definition, History, Hardware and Software requirements of CAD, Design Process, Application, Use, Creating the manufacturing Data base and benefits of CAD. Hardware in CAD: Introduction, Design workstation, Graphics terminal, input and output devices, central processing unit and secondary storage.

**UNIT-II (9 Hrs.)**

Introduction to garment production software. Computerized Apparel Design: Introduction to "Basics of Computer Aided Design for Apparel. Usage of different drawing and measuring tools. Basic Block construction and digitization of patterns, Pattern making of different garments, e.g. skirts, jackets through assembly of lines, points, fold etc.

**UNIT-III (11 Hrs.)**

Introduction to Computer Graphics – What is Computer Graphics, Computer graphics applications, Computer Graphics Hardware and Software, two dimensional graphics primitives – Point and Lines, Line drawing algorithms, Introduction to Software Packages**:** Introduction to Auto-CAD: Features, Basic Drawing Techniques: Drawing Line, Circle, Rectangle, Arc, Polyline, Ellipse, Elliptical Arc, Polygons, Donuts, Corner rounding, Chamfering, Displacing, Duplicating, Removing Objects. Introduction to Corel Draw – Features and basic drawing techniques, Introduction to Photoshop – Features and basic drawing techniques.



**UNIT-IV (9 Hrs.)**

Introduction to Grading techniques, Application of grading system to basic blocks and adaptations, Computerized grading on Lectra and other software. Fundamentals & techniques for Grading with the use of size-charts etc., Grading of basic bodices by 2-track and 3-track method.

**Recommended Books**

1. Mikcle P. Groover, Emory W. Zimmers Jr., 'Computer Aided Design & Manufacturing'.
2. James D. Foley, Andeies, 'Computer Graphics Principles & Practices'.
3. Kitty G. Dickerson, 'Inside the Fashion Business', 7th Edn., Pearson Education, India.
4. G.S. Fringes, 'Fashion from Concept to Consumer', Pearson Education.
5. H.J. Armstrong, 'Pattern-making for Fashion Design', Pearson Publication.

## GARMENT MANUFACTURING TECHNOLOGY-I

**Subject Code: BFTE2-319** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To introduce various terms and techniques related to sewing of garment. Such as various sewing machine parts, sewing thread, seam and stitch formation, seam finishes, pucker, etc.

**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short

answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (10 Hrs.)**

**History of Sewing:** stages and evolution of sewing and sewing machineries, requirement of stitches, contribution of stitch in fashion. Introduction to various Sewing machine parts, their functions and applications.

**Needles:** types of needles. Understanding the structure and specifications of sewing machine needles and their importance in sewing processes. Introduction to various parts of needle-shank, butt, shoulder, reinforced shoulder, blade, point (set, cut, ball), eye, groove, scarf.

**Needle Sizing:** needle numbers, singer and metric system. Needle size and its relation to fabric and sewing quality requirements

**UNIT-II (10 Hrs.)**

**Seam Terminology:** inside curved seam, outside curved seam, enclosed seam, exposed seam, extended seam allowances, intersecting seam.

Graphical description and representation of seams and its finishing, understanding of seam properties and their application in relation to different fabrics and apparels seams and the effect on performance, costs and quality in industrial sewing process.

**UNIT-III (9 Hrs.)**

**Introduction:** Classification and applications of different types of seams and stitches. Seam finishes: book seam finishes, net bound seam finish, self-bound seam finish, single ply bound seam finish, double stitched seam finish, pinked seam finish, etc.

Sewing threads: fibre types, and thread composition, thread finishes, thread sizing, thread package, thread cost, thread properties & seam performance.



**UNIT-IV (9 Hrs.)**

Machine stitches and their classification. Blind stitch, chain stitch, double needle machine stitch, hemistitch, lettuce edging, lock stitch zigzag machine stitch, over edge machine stitch, purl edging, picot edging, safety stitch, scallop over edge, shirring stitch, etc.

Sewing problems- problems of stitch formation, problem of pucker, problems of damaged to the fabric along stitch line, needle cutting index.

**Recommended Books**

1. Jacob Solinger, 'Apparel Manufacturing Handbook', Van Nostrand Reinhold Company, **1980.**
2. Tyler, 'Carr and Latham's Technology of Clothing Manufacturing', Blackwell.
3. Jones, Richard M, 'Apparel Industry', 2nd Edn., Blackwell.
4. Chuter, 'Introduction to Clothing Production Management', Blackwell.

## FABRIC STUDIES

**Subject Code: BFTE2-320** **L T P C** **Duration: 38 Hrs.**

**3 0 0 3**

**Course Objectives:** To impart knowledge of fabric designing by understanding the concepts of fabric structure comprising basic weaves, their modification as well as decorative weaves, etc.

**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (10 Hrs.)**

**Woven Design Fundamentals:** Classification of woven structures, Importance of fabric structure, Concept of fabric designing through fabric structure, methods of weave

representation, Basic elements of a woven design; Design, Drafting plan, Peg plan and Denting, Types of draft plans.

**Plain Weaves:** External characteristics, properties, uses, ornamentation, rib and cord effect. derivatives/modifications; warp rib, weft rib, hopsack, their classification, design, draft and peg-plan for all

**UNIT-II (10 Hrs.)**

**Twill Weaves:** External characteristics, properties, factors influencing prominence of twill weaves, influence of twist, classification; balanced and unbalanced: ordinary, zig-zag, herringbone, curved, broken, transposed, elongated, combination twills, design, draft and peg-plan for all weaves

**UNIT-III (9 Hrs.)**

**Sateen and Satin Weaves:** External characteristics, properties, uses, regular and irregular sateen, Cork screw weaves; warp faced, weft faced, uses, Diamond weave, Honey Comb weaves; ordinary and Brighton, characteristics and uses, Huck a back weaves; characteristics and uses, Crepe weaves; methods of constructions, characteristics and uses, Draft and Peg-plan for all decorative weave.

**UNIT-IV (9 Hrs.)**

**Bed Ford Cords:** Plain faced, twill faced, Mock Leno weaves; perforated fabrics, distorted thread effects, end uses, Welt and Pique Fabrics. Extra warp and weft figured fabrics, Introduction to Backed cloth, Terry pile fabrics and pile formation and velveteen.
Constructional particulars of various fabrics used for apparels.

**Recommended Books**

1. Navneet Kaur, 'Comdex Fashion Design; Fashion Concepts', Vol. I, Dreamtech Press, **2010.**
2. N. Gokarneshan, 'Fabric Structure and Design', New Age Publishers.
3. Z.J. Groscicki, 'Watson Textile Design and Colour', Newnes Buttersworth.
4. H. Nisbet, 'Grammer of Textile Design', D.B. Tarapore Wala Sons and Co.



## KNITTING AND KNITTED GARMENT

**Subject Code: BFTE2 – 321** **L T P C** **Duration: 37 Hrs.**
**3 0 0 3**

**Course Objectives:** To impart knowledge of knitted fabrics, their properties, manufacturing techniques as well as ornamentation. To study Knitted garment technology, various types of methods of producing knitted garments, etc.

**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit

**UNIT-I (9 Hrs.)**

Definition of knitting, comparison of knitting and weaving, Classification of knitting- warp and weft knitting. Classification of weft knitting machines. Difference between woven and knitted fabric properties., Characteristics of warp knit and weft knit structure. Fundamental Stitches: Knit, Tuck and float stitches and their uses. Ornamentation of knitted fabrics. Concept of loop length, production calculation, fabric faults in knitting.

**UNIT-II (10 Hrs.)**

Weft knitting elements: knitting needles, sinkers, cam systems, etc. Knitting cycles of Latch, Beard and Compound Needles. Weft knitting elements: properties and uses of basic weft knitted structures- Plain, Rib, Interlock and Purl.

**UNIT-III (9 Hrs.)**

**Warp Knitting:** classification of warp knitting machine. Brief introduction of Raschal and Tricot machines. Characteristics of Raschal and Tricot structures and their uses. Calculations for Tightness factor, fabric cover, stitch density, areal density and knitting machine production. Characteristics of knitting yarns. Major Knitted fabric faults and their remedies.

**UNIT-IV (9 Hrs.)**

Introduction to Knitted Garments- types and flowchart including the steps of production. Fully Cut garments – Fully fashioned garments, Integral garments – hand and machine spreading, types of lays. Marking – manual and computerized marking Cutting devices as die-cutter. Hand shears, laser cutting, etc. Shaping of various garments, e.g., in body sleeve angles, etc., Cutting in case of cut stitch shaped garments.

**Recommended Books**

1. Azgaonkar. 'Knitting Technology', Universal Publishing Corporation, **1998**.
2. Spencer, 'Knitting Technology', Pergamon Press.
3. H. Wignal, 'Hosiery Technology', Textile Book Service, **1968.**
4. Irfan Ahmed Sheikh, 'Pocket Knitting Expert', Irfan Publisher.
5. Terry, 'Knitted Clothing Technology', Blackwell.
6. Brackenbury, 'Knitting Clothing Technology'.

## FASHION STUDIES

**Subject Code: BFTE2– 322** **L T P C** **Duration: 38 Hrs.**

**3 0 0 3**



**Course Objectives:** To impart knowledge of fashion, dresses, sleeves, basic bodice, etc.
**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (9 Hrs.)**

Definition of fashion, fashion terminology, fashion cycle, fad/classic, factors affecting fashion, Fashion adaptation theories, Major fashion centers of the world: Brief introduction to world fashion centers - American, European, Japanese. Consumer identification with fashion cycles- leaders, innovators, followers. Motives of consumer buying, fashion selection, brief introduction about roles/jobs in fashion / export houses**.**

**UNIT-II (9 Hrs.)**

Fashion information services, trend forecasting and auxiliary services. Forecasting trends: Purpose of forecasting trends, how to use forecasting service. Fashion promotion and communications- Trade fairs, Fashion shows.

**Children's Wear:** Size categories for children's wear. Selling seasons, Sources of inspiration for children's wear.

**UNIT-II (11 Hrs.)**

**Women's Wear:** Tops and Coats – different bodices, use of darts, ease gores and yokes to design tops, different types of sleeves and placket finishes, knit styling. Designing of some women's wear garments. Skirts – Basic skirt shapes and their variations, skirt lengths and waistband treatment. Dresses – Different dress categories like junior dresses, contemporary dresses, Missy dresses.

**UNIT-IV (9 Hrs.)**

**Men's Wear**: Historical development of menswear, menswear manufacturing plant, menswear designer. Sources of inspiration, constructional details in menswear. Designing of menswear.

**Recommended Books**

Sharon Lee Tate, 'Inside Fashion Design'.
Kitty G. Dickerson, 'Inside Fashion Business'.

## GARMENT CONSTRUCTION LAB.-I

**Subject Code: BFTE2 – 323** **L T P C**
**0 0 4 2**

**Course Objectives:** To familiarize students with basic tools, thread types, needle types and trims and components.

1. Introduction and application of different aids, tools & equipment for cutting.
2. Preparation of different types of pattern & pattern layout
3. Selection of different types of needles according to stitching components (Hand sewing & industrial Sewing)
4. Selection procedure of different types of sewing thread & embroidery thread.
5. Utility of different aids & tools for garment construction.
6. Basting operation.
7. Study of sewing machineries, Different tools & Work aids.
8. Application of different trims & components.
9. Study of fusing & pressing machine procedure.

**NOTE:** At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by teacher as per the scope of the syllabus.

**Recommended Books**

1. H.C. Carr, 'The Clothing Factory ', The Clothing Institute, London, **1972.**
2. Jacob Solinger, 'Apparel Manufacturing Handbook', Van Nostrand Reinhold Company, **1980.**
3. Irland, 'Encyclopedia of Fashion Details', Batsford



## PATTERN MAKING LAB.-I

**Subject Code: BFTE2-324** **L T P C**
**0 0 4 2**

**Course Objectives:** To familiarize students with basic tools, materials and drafting techniques.

1. Introduction to the tools and material used for drafting.
2. Drafting of child's basic and adults' bodice blocks.
3. Drafting of different commonly used sleeves as set-in, puff, raglan, flared, leg'o'mutton, etc.
4. Drafting of different collars as peter-pan, sailor, mandarin and shirt collars etc.

**Note:** At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by teacher as per the scope of the syllabus.

**Recommended Books**

1. Jacob Solinger, 'Apparel manufacturing handbook', Van Nostrand Reinhold Company, **1980**
2. Tyler, 'Carr and Latham's Technology of Clothing Manufacturing', Blackwell.
3. Jones, M. Richard, 'Apparel Industry', 2nd Edn., Blackwell.
4. Chuter, 'Introduction to Clothing Production Management', Blackwell.
5. Armstrong, 'Pattern Making for Fashion Design', Dorling Kindersley Publication.

## FABRIC ANALYSIS LAB.-I

**Subject Code: BFTE2-325** **L T P C**
**0 0 4 2**

**Course Objectives:** To give hands on training to students in understanding the fabric formation on looms, the mechanism involved and as well as developing creativity in designing unique fabric structures along with fabric analysis.

1. To understand how woven fabric are manufactured on a loom
2. To understand process sequence for woven fabric manufacturing to study the objective and passage of material on cone winding machine
3. Line sketches of warping, sizing, drawing-in creating weave patterns by using colored pencil along with draft and peg plan
4. Description of important parts of a loom
5. General passage of material through loom
6. Basic loom mechanisms
7. Ways to distinguish warp & filling yarns
8. Weave analysis, count and weight calculations, cover factor
9. Use of strips of colored paper to produce different color and weave effects
10. Characterize a woven fabric with respect to its dimensional properties
    a. Thread density
    b. yarn count
    c. Yarn crimp
    d. thickness
    e. cover factor
    f. areal density
    g. weave
    h. skewness
11. Demonstration and practice of Weave software.

**Note:** At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by teacher as per the scope of the syllabus.

**Recommended Books**

1. Navneet Kaur, 'Comdex Fashion Design; Fashion Concepts', Vol. I, Dreamtech Press, **2010.**
2. N. Gokarneshan, 'Fabric Structure and Design', New Age Publishers.
3. Z.J. Groscicki, 'Watson Textile Design and Colour', Newnes Buttersworth.
4. H. Nisbet, 'Grammer of Textile Design', D.B. Tarapore Wala Sons and Co.

## HOME TEXTILES

**Subject Code: BFTE1-356** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To impart knowledge on various Home textiles, their product range, properties, design aspects and applications, etc.

**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (20 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (10 Hrs.)**

Introduction to Home textile and Home Fashion, Product Classifications; Widely used Home textile and Home fashion fabrics, Decorative fabrics; home textile fabrics, Soft floor coverings, designers,

Decorative weaves/Advanced fabric structures for Home Fashion; Jacquard weave, crepe weave, pile weave, Slack tension weave, Double weave fabrics,

**UNIT-II (10 Hrs.)**

Upholstery fabrics; their properties, standard performance specifications for woven upholstery fabrics, upholstery fabrics in use- application terms, upholstery fabric on furniture Flame resistance of upholstered fabrics, filling and padding of upholstered furniture, care and maintenance

**UNIT-III (9 Hrs.)**

Carpets; manufacturing methods, Woven Vs tufted carpet, types of carpet pile, carpet construction terms, fibres, yarns, dyeing, printing, and finishing for carpets, carpet underlay, carpet flammability, Traffic classification, carpet soiling, carpet maintenance, methods of cleaning, factor evaluating carpet quality,

**UNIT-IV (9 Hrs.)**

Window fabrics, how fibre properties, yarn and fabric construction, dyes and prints affect window fabrics, fabric finishing for window fabrics, Wall and Ceiling coverings, manufactured products, Bedding products; sheets, pillowcases, blankets, bedspread, quilts and comforters, mattresses, Textile Tabletop products and Hospitality Industry.

**Recommended Books**

1. Billie J. Collier, Martin Bide & Phyllis G. Tortora, 'Understanding Textiles', 7th Edn., Prentice Hall Publication Ltd, Cambridge, **2000.**
2. Navneet Kaur, 'Comdex Fashion Design; Fashion Concepts', Vol. I, Dreamtech Press, **2010.**
3. N. Gokarneshan, 'Fabric Structure and Design', New Age Publishers.
4. Z.J. Groscicki, 'Watson Textile Design and Colour', Newnes Buttersworth.
5. Diamond Ellen and Diamond Jay, 'Fashion Apparel & Accessories and Home Furnishing', Pearsons Prentice Hall, NJ, **2007.**



## SURFACE ORNAMENTATION TECHNIQUES

**Subject Code: BFTE1-357** **L T P C** **Duration: 38 Hrs.**

**3 0 0 3**

**Course Objectives:** To familiarize students with traditional Indian embroideries. Illustration and application of various techniques and stitches in ornamentations of textiles or garments.

**UNIT- 1**

Surface ornamentation by beads, patch work, embroidery, etc. Introduction to embroidery. Various types of embroidery stitches such as stem stitch, chain stitch, herringbone stitch, cross stitch, etc.

**UNIT- 2**

Study of Indian traditional textiles and embroideries of different States with special reference to material, thread, colours, stitches, motifs and production processes used such as Chikankari and Brocades of UP. Phulkari of Punjab. Chamba Rumal of Himachal Pradesh.

**UNIT- 3**

Functional changes and value addition due to embroidery. Study of Indian traditional textiles and embroideries such as Kanthas, Baluchar and Jamdani of Bengal. Kashida, Shawls and Carpets of Kashmir, Ikat of Orissa. Patola, Bandhani, Sindh and Kutch of Gujrat.

**UNIT- 4**

Kalamkari and Pochampali of Andhra Pradesh. Kasuti of Karnataka.
Patch work, appliqué, quilting-introduction, tools material and techniques.
Advancements in embroidery techniques, new embroidery machines with advanced features.

**Recommended Books:**

1. Usha Shrikant, 'Ethnic Embroidery of India', Honesty Publications.
2. B.K. Behra, 'Traditional Textile Designs of India'.
3. Barnden Betty, 'Embroidery Basics', Barson's Educational Series Incorp.
4. Gillow, 'Traditional India Textile', Thames & Hudson, **1998**.

## TECHNICAL TEXTILES

**Subject Code: BFTE1-358** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To give overview and brief knowledge on the advancement in technology and its tremendous impact in various spheres of life including electronics, sports, medical, defence by bringing functionality in apparels.

**Unit 1**

Functional garments; definition and different types, brief idea about properties and uses of speciality fibres like Nomex, Kevlar, Glass fibre and other fibres used in functional garments. Sportswear; Requirement, different fibres used, approaches for manufacture.
Breathable apparels; Introduction, principle, classification and use. Moisture management fabric.

**Unit 2**

Protective clothing; General requirement of protective clothing, chemical protective clothing (CPC) and their applications. Functional requirements of defence clothing.

**Unit 3**

Antimicrobial clothing, their importance and applications. Thermal protective clothing; combustion mechanism, fire governing parameters, requirements, construction, various parameters affecting flame retardency, performance evaluation.

**Unit 4**

Ballistic Protective clothing: Requirements, principle of mechanism, different fibres and fabrics, Medical Responsive Fabrics; Definition, requirements, fibres, classification, Smart Electronic clothing and requirements.

**Recommended Books:**

1. A.R. Horrocks and S.C. Anand, 'Handbook of Technical Textiles', Woodhead Publication Ltd, Cambridge, **2000.**
2. Sarah. E. Braddock and Marie O "Mahony", 'Techno Textiles – Revolutionary Fabrics for Fashion & Design', Thames & Hudson.
3. Sabit Adanaur, 'Wellington Sears Handbook of Industrial Textiles', Technimic Publishing Company, Inc., Pennsylavania, U.S.A.
4. W. Fung, 'Coated and Laminated Textiles'.
5. W. Fung and J.M. Hardcastle, 'Textiles in Automotive Engineering'.
6. X.M. Tao, 'Smart Fibres, Fabrics and Clothing'.
7. R.A. Scott, 'Textiles for Protection'.
8. R. Shishoo, 'Textiles in Sport'.
9. X.M. Tao, 'Wearable Electronics and Photonics'.

## APPAREL MARKETING & MERCHANDISING

**Subject Code: BFTE2–426** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To impart knowledge about Apparel Marketing and Merchandising, domestic and export market and their procedures.
**Note:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit

**UNIT-I (10 Hrs.)**

Exploration of Fashion and Apparel Industry, Marketing and Careers within the industry, Core components, Primary markets, Producers of material, Secondary markets, Design and Production, Present scenario of Textile and Apparel industry in India. Fashion Marketing concept, Marketing environment.

**UNIT-II (10 Hrs.)**

Domestic Vs International Marketing, Challenges for International Marketing, International Marketing environment, Identifying foreign apparel markets, International marketing mix – PLC model, Pricing decision, Channels of distribution, Promotion mix in International context, Modes of entering foreign market for apparel exports, Merits and demerits of each method, Terms of payment

**UNIT-III (9 Hrs.)**

Exports- Export procedure and documentation, Export assistance – various schemes, sources of information, export promotion council etc., export finance,

**UNIT-IV (9 Hrs.)**

Export houses- working of export houses, categories- star trading export houses, etc. Outsourcing merchandising, visual merchandising, Business process off shoring/outsourcing. Concept of supply chain management, India's leading export houses, Trends in apparel industry, Foreign trade agreements related to the garment industry

**Recommended Books**

1. Varshney and Bhattacharya, 'International Marketing Management'.
2. Nabhi's Publication on Export Govt. Handbook
3. Onkvisit and Shaw, 'International Marketing'.
4. Cateora, 'International Marketing'.

## INDUSTRIAL ENGINEERING

**Subject Code: BFTE2-427** **L T P C** **Duration: 39 Hrs.**
**3 0 0 3**

**Course Objectives:** To introduce various terms and techniques related to Industrial Engineering, work study, Method Study, etc.
**Note:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (`12 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (10 Hrs.)**

Definition of Industrial Engineering. Various processes involved in Apparel Industry and the utility of Industrial Engineering. Machine productivity, Efficiency, SPM, SPI, etc.

**UNIT-II (9 Hrs.)**

Selection of proper work aids in garment machineries. Working of different work aids and their application in relation to different fabrics and apparels and the effect on the performance, costs and quality in industrial sewing process.

**UNIT-III (10 Hrs.)**

Classification and applications of different types of tools that are used in measuring work study, motion and method study. Machine lay out, material handling.

**UNIT-IV (10 Hrs.)**

Definition of Ergonomics. Problems of sewing workers, problems of damaged to the various parts of human being during working in Apparel Industry. Robotics and uses of robots in apparel industry.

**Recommended Books**

1. Jacob solinger, 'Apparel manufacturing handbook', Van Nostrand Reinhold Company, **1980**
2. Tyler, 'Carr and Latham's Technology of Clothing Manufacturing', Blackwell**.**
3. Jones, Richard M, 'Apparel Industry', Blackwell.
4. Chuter, 'Introduction to Clothing Production Management', Blackwell.

## TESTING AND QUALITY CONTROL IN APPAREL

**Subject Code: BFTE2-428** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**



**Course Objectives:** To impart knowledge, importance and methods of Testing relevant to fibres, yarn, fabrics and apparel with brief description of relevant equipment, etc.

**Note:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit

**Objective:** To impart knowledge, importance and methods of testing relevant to fibres, yarn and Fabrics with brief description of relevant equipment.

**UNIT-I (9 Hrs.)**

Introduction to testing and its importance, Standard atmospheric conditions for testing and its effect on test results. Testing of yarn strength, elongation, twist, evenness and hairiness. Fabric dimensions' measurement – length, width, thickness, weight/area, thread/length, and crimp.

**UNIT-II (10 Hrs.)**

Tensile strength and elongation: Definition of different units, tensile strength and elongation, work of rupture, tearing strength, bursting strength. Serviceability: Snagging test, Pilling test, Abrasion resistance.

**UNIT-III (10 Hrs.)**

Comfort: Water vapor repellency, Wicking properties, Air permeability, Thermal insulation and wettability. Fabric handle: Bending length, Crease recovery, Drape, Low stress mechanical properties. FAST, Kawabatta Evaluation System.

**UNIT- IV (9 Hrs.)**

Garment Testing: Dimensions, Seam strength, Seam slippage, Adhesion between interlining and fabric, shrinkage, zippers, buttons, snap fasteners and other general garment properties. Needle Cutting/Yarn severance.

**Recommended Books**

1. B.P. Saville, 'Physical Testing of Textiles', Woodhead Publishing Ltd, Cambridge, **2002.**
2. V.K. Kothari, 'Testing and Quality Management', Ed. V.K. Kothari, IAFL Publications,
3. J.E. Booth, 'Principles of Textile Testing', CBS Publishers and Distributors, New Delhi.
4. Gopalakrishnan Angappan P. & R. Komarapalayam, 'Textile Testing', SSM Institute of Textile Technology, **2002**.
5. Irfan Ahmed Sheikh, 'Pocket Textile Testing & Quality Expert', Irfan Publisher.
6. V.K. Mehta, 'Apparel Quality Control'.

## GARMENT MANUFACTURING TECHNOLOGY - II

**Subject Code: BFTE2-429** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To impart knowledge of garment manufacturing Technology, latest developments.

**Note**: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (9 Hrs.)**

Overview of the Garment Manufacturing processes, Introduction to the latest advancements in the Garment manufacturing processes. Fabric cutting Process: Pre-requisites for the fabric cutting. Tools and equipment needed for the cutting process. Advancements in the fabric cutting technology.

**UNIT-II (10 Hrs.)**

Garment assembly processes: Basics of sewing, Functional parts of sewing machines (SNLS): Feed mechanisms, Run-in-ratio, Effect of sewing process on the sewing thread strength. Principle, mechanism and utility of following machines: Interlock machine, overlock machine, Double needle Lock stitch and chain stitch sewing machines, Bar- tacking machine, feed off the arm, Button attaching and buttonhole making machine and computerized embroidery machines.

**UNIT-III (10 Hrs.)**

Study of sewing needle temperature: Factors affecting and remedial measures, Methods for the needle temperature measurement. Study of the measurement of the sewing forces and pressure during sewing. Study of the measurement techniques of the sewing thread tension on the sewing machine:

SNLS and overlock machines. Applications of Programmable logic circuits (PLC) in the Garment manufacturing processes.

Robotics: Basic analogy, its applications, scope and limitations in the Garment Industry.

**UNIT-IV (9 Hrs.)**

Pressing and Fusing process and equipment. Handling of garments between different processes in the apparel industry.

**Recommended Books**

1. Brackenburry, 'Knitted Clothing Technology'.
2. Barbara Latham, 'The Technology of Clothing Manufacture Harold Carr'.
3. Gerry Cooklin, 'Introduction to Clothing Manufacture'.
4. Jacob Solinger, 'Apparel Production'.
5. M.G. Mahadevan, 'Robotics & Automation in the Textile Industry'.
6. Ann Giocllo & Berle, 'Fashion Production Terms Debbie'.

## TEXTILE AND GARMENT FINISHING-I

**Subject Code: BFTE2-430** **L T P C** **Duration: 39 Hrs.**
**3 0 0 3**

**Course Objectives:** To introduced fundamentals of printing, various methods and styles of printing and their applications. Emphasis is given on applications of printing procedure instead of detail chemistry of dyes and printing auxiliaries.

**Note**: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit.

### UNIT-I (10 Hrs.)

Introduction of printing. Evolution in textile printing. Different methods of printing such as block, roller and screen printing. Construction and working mechanism, drawback and advantage of each method. Design making and screen exposing - Table, Flat-bed, Rotary screen.

### UNIT-II (9 Hrs.)

**Transfer Printing:** Types, mechanism of transfer in each type and machineries.

Print Paste: Constituent and characteristics of print paste, classification and mechanism and working of thickeners.

### UNIT-III (10 Hrs.)

**Printing Styles:** Direct, discharge and resist styles of printing on textiles. Brief concept of printing of cellulosics with direct, reactive and vat dyes; proteineous with acid dyes and synthetic textiles with disperse dye.

### UNIT-IV (10 Hrs.)

**Printing with Pigments:** Fundamental concept, chemistry and procedure of pigment printing. Advantage and disadvantages of pigment printing.

**Printing after Treatments:** Importance of steaming, curing, ageing of prints. Mechanism of each process. Special effects like – Batik, Tie and dye, crimp style, etc.

Advancement in printing technology and applications ie. Ink Jet Printing.

**Recommended Books**

1. V.A. Shenai, ‘Technology of Printing’, Sevak Pub. Mumbai.
2. Clarke, ‘An Introduction to Textile Printing’, CBS Pub Delhi.
3. R.B. Chavan, ‘Textile Printing’, Second annual Symposium.
4. Leslie W.C. Mile, ‘Textile Printing’, Amer Assn of Textile, **2003.**

## GARMENT CONSTRUCTION LAB.-II

**Subject Code: BFTE2-431** **L T P C**
**0 0 4 2**

**Course Objectives:** To give hand on training on apparel construction and their techniques.
Illustration for the techniques of draping to get the fault free draped pattern. Practice of draping of basic bodice to the dress-form. Variations in bodices as per the designing details. Draping of basic skirt and hence skirt variations.
Fundamentals & techniques for Grading with the use of size-charts etc Grading of basic bodices by 2-track and 3-track method,
Different operational stitches of a garment. Line balancing system. Standard allowed minute calculation. Lay out setting procedure. Practice of pattern making and construction of ladies and kids wears. Analysis of different garments-beach wear, swim wear, leisure wear, night wear, etc. and construction few of them as per suitability.

**Recommended Books**

1. Armstrong,' Pattern Making for Fashion Design', Dorling Kindersley Publication.
2. Aldrich, 'Metric Pattern Cutting Men's wear', 4th Edn., Blackwell Publication.
3. Aldrich, 'Metric Pattern Cutting for Children Wear & Baby Wear', Blackwell Publication.
4. Aldrich, 'Pattern Cutting for Women Tailored Jacket', Blackwell Publication.
5. Holman, 'Pattern Cutting Made Easy', Batsford Publication.
6. Cooklin, 'Pattern Grading Men's Cloth', Blackwell Publication.
7. Cooklin, 'Pattern Grading Women's Cloth', Blackwell Publication.

**Note:** Number of experiments or construction of garments may vary as per availability of resources.



## PATTERN MAKING LAB.-II

**Subject Code: BFTE2-432** **L T P C**
**0 0 4 2**

**Course Objectives:** To give hands on training to students on apparel construction techniques-basic block, dart manipulation- pleats, tucks, gathers, dart clusters, radiating darts, etc.

- Developing the basic blocks, marking information on blocks. Adaptations of the basic blocks, principle of dart manipulation by (i) slash and spread method (ii) pivotal transfer method.
- Style variations of dart manipulation – pleats, tucks, gathers, dart clusters, radiating darts, terminating darts.
- Fitting problems and their identification. Commercial paper pattern – symbols used in commercial patterns, envelopes for commercial paper patterns, guide sheet and other relevant information.
- Flat pattern technique – drafting, developing paper pattern, designing and construction of garments of children, men and women using different construction and decorative features.

**Recommended Books**

1. Armstrong, 'Pattern Making for Fashion Design', Dorling Kindersley Publication.
2. Aldrich, 'Metric Pattern Cutting Men's Wear', 4th Edn., Blackwell Publication.
3. Aldrich, 'Metric Pattern Cutting for Children Wear & Baby Wear', Blackwell Publication.
4. Aldrich, 'Pattern Cutting for Women Tailored Jacket', Blackwell Publication.
5. Holman, 'Pattern Cutting Made Easy', Batsford Publication.

6. Cooklin, 'Pattern Grading Men's Cloth', Blackwell Publication.
7. Cooklin, 'Pattern Grading Women's Cloth', Blackwell Publication.

**Note:** At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by teacher as per the scope of the syllabus.

## TEXTILE TESTING LAB.

**Subject Code: BFTE2-433** **L T P C**
**0 0 4 2**

**Course Objectives:** To give hands on training to students on various testing equipment relevant to fibres, yarn and fabrics.

List of some of the experiments:

1. To find out tearing strength of a given fabric sample using the Elmendorf Tear Tester.
2. To find out the seam strength of a fabric.
3. To find out the abrasion resistance of various kinds of fabrics.
4. To find out the pilling resistance of given fabric samples
5. To test the air permeability of given fabric samples.
6. To find out the water permeability and water repellency of various kind of given fabric samples.
7. To check the dimensional stability of given fabric samples.
8. To check the rubbing fastness of different kind of fabrics.
9. To check the colour fastness of given fabric samples.
10. To determine the flammability resistance/Limited Oxygen Index of treated fabric samples
11. Determine the compression property of a fabric (thickness)



**Recommended Books**

1. B.P. Saville, 'Physical Testing of Textiles', Woodhead Publishing Ltd, Cambridge, **2002.**
2. V.K. Kothari, 'Testing and Quality Management', IAFL Publications.
3. J.E. Booth, 'Principles of Textile Testing', CBS Publishers and Distributors, New Delhi.
4. P. Angappan & R. Gopalakrishnan, Komarapalayam, Textile Testing, SSM Institute of Textile Technology, **2002.**

**Note:** At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by teacher as per the scope of the syllabus.

## PRODUCTION PLANNING & CONTROL

**Subject Code: BFTE2-534** **L T P C** **Duration: 37 Hrs.**
**3 0 0 3**

**Course Objectives:** To familiarize students with production planning and control in apparel industry using work study, time study and advanced software for G.S.D.

**Note:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (9 Hrs.)**

Introduction to production, operation concept of production, production as the conversion process, productivity component of production. Production planning and Control, its objectives, function, organization of (PPC) department.

**UNIT-II (9 Hrs.)**

Production planning – order preparation, material planning process planning, loading and scheduling. Production control of dispatching, progressing and follow-up. Method study – basic procedure of method study. Work measurement – uses of work measurement, data, basic procedure of work measurement, definition and scope of motion and time study.

**UNIT-III (10 Hrs.)**

**Time Study:** Time study procedure, illustrative examples on computation of standard time. Motion and time study: data for sewing work study, improvement of production efficiency, improvement in thought pattern of an operator, evolution of PMTS.

**UNIT-IV (9 Hrs.)**

General sewing data system, method engineering, production analysis (qualitative and quantitative). Co-coordination of activities. Layering and marker planning, cutting room planning, planning of sewing room. Material management in clothing production. Quick response in apparel manufacturing, different production systems.

**Recommended Books**

1. A.J. Chuter, 'Introduction to Clothing Production Management', Blackwell.
2. Rajesh Bheda, 'Production Management in Apparel Industry'.
3. Rajesh Bheda, 'Managing Productivity in Apparel Industry', C.B.S. Pub.
4. V.P. Mehta, 'Managing Quality in Apparel Industry', New Age International.



## COSTING AND RETAILING MANAGEMENT

**Subject Code: BFTE2-535** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To introduce fashion retailing and their related terms such as retail formats, key elements of retail mix, importance and objectives, etc.

**Note:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (`12 marks). Students have to attempt 5 questions in total at least one question from each unit

**UNIT-I (10 Hrs.)**

Retail, fashion retailing - types of retail formats, retail formats operating fashion in India-franchised retail, chain store retailing, specialty stores, factory outlets, discount retailing, non-store retailing like online retailing, level of service offered, franchising system-characteristics, retail marketing decisions.

**UNIT-II (9 Hrs.)**

Wholesalers-difference between retailers and wholesalers, types of wholesalers, major functions and services provided by wholesalers, product line of wholesalers, modes of physical distribution, marketing logistics, inventory management

**UNIT-III (9 Hrs.)**

Retail marketing –nature, concept and importance, objectives of retail marketing, retail marketing mix, mix planning and composition, key elements of retail mix, retail marketing planning and its types, retail buying sequence and communication. Various modes of fashion retail promotions. Influence of promotion on the business, limitations.

**UNIT-IV (10 Hrs.)**

Changing dimensions of fashion retailing - growth of private labels: retailers into manufacturing, concentration of retail power, globalization of retailing, relationship marketing, partnerships, logistics and distribution.

**Recommended Books**

1. Kitty G. Dickerson, 'Inside the Fashion Bussiness', 7th Edn., Pearson Education, India.
2. Philip Kotler and Kevin Keller, 'Marketing Management', 13th Edn., Prentice Hall Higher Education**, 2008.**
3. Mike Easey, Fashion Marketing, Blackwell Publishers, **2008.**

## MATERIAL STUDIES

**Subject Code: BFTE2-536** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To impart knowledge and importance of different types of raw materials relevant to fibres, yarn, fabrics and apparel with brief description of relevant leather, metal, narrow fabrics like laces, braids, ribbons, fancy yarns and fabrics for apparels.

**Note:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit.

**UNIT-I (9 Hrs.)**

Introduction to important high performance fibres and their application in fashion design and speciality garments, fancy yarns, Types of fancy yarns and their application in fashion design.

**UNIT-II (10 Hrs.)**

**Fabrics:** Characteristics of Apparel fabrics; properties and end uses of fabrics like poplin, muslin, Madras Check, Seersucker, Georgettes, Crepe, Voile, denim, Drill, Chino, Satin, Brocade, Tussar, Organdie, Bedford cord, Pique, Velvet/Velveteen, Gauze and Leno, Gaberdine, Organdie, Organza, Jean, etc.



**UNIT-III (10 Hrs.)**

**Narrow fabrics:** Types of Narrow fabrics, like Tapes, Ropes, Braids, Laces, Ribbons, Elastics, Belts and their applications in garments and fashion accessories, Lining & Interlining fabrics: Different types and their structure and end uses.

**Nonwoven Fabrics:** Manufacturing techniques and applications in the apparel and accessories.

**UNIT-IV (9 Hrs.)**

Introduction to nature of miscellaneous materials like metals, glass, shells, plastic and their applications in fashion design.

**Leathers:** Different types of leathers, their properties and end uses.

**Furs:** Different types, their properties and end uses.

**Recommended Books**

1. R. Chattopadhyay, 'Textile Ropes and Cordages'.
2. Watson, 'Textile Design'.
3. Preston & Lewin, 'High performance Fibres'
4. N.N. Banerjee, 'Nonwoven Fabrics'.
5. Carr & Latham, 'The Technology of Clothing'.

## TEXTILE AND GARMENT FINISHING-II

**Subject Code: BFTE2-537** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives:** To introduce various mechanical and chemical finishes, their application in textile and garment industries. Emphasis is given on Conceptual knowledge, working principles of finishes applications instead of detail chemistry.

**Note**: Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit

**UNIT-I (9 Hrs.)**

Introduction to textile finishing. Aim and scope. Classification of finishes. Concept of permanent and temporary finishes. Various finishes in industrial practices such as raising and shearing, drying. Calendaring - its types, construction and function of various calendaring m/cs.

**UNIT-II (10 Hrs.)**

Mechanism of shrinking and pre-shrunk fabric. Sanforizing – method and mechanism. Brief concept of finishing of wool: Crabbing, decatising, milling, shrink finishing, etc. General chemical finishes like softening, stiffening, delustering of rayon, polyester. organdy finish. Silky finish of polyester. Weighting of silk.

**UNIT-III (9 Hrs.)**

Introduction and preliminary concepts of specialty finishes such as durable press textile and garments, anti-crease finish. Water repellent and water proof finish, Flame-proof and flame-retardant finish.

**UNIT-IV (10 Hrs.)**

Introduction and preliminary concepts of specialty finishes such as Soil and oil repellent finish, anti-static finish, antimicrobial finish. Introduction of enzymes and their applications in finishing of textiles and garments. Finishing of denim: stone wash, enzyme wash, etc. enzyme wash and some other specialty finishes. Brief introduction to garment finishing machines.

**Recommended Books**

1. E.P.G. Gohl and L.D. Vilensky, 'Textile Science', CBS Publishers.
2. J.T. Marsh, 'An Introduction to Textile Finishing', 2nd Edn., Chapman and Hall, London, **1966.**
3. V.A. Shenai, 'Textile Finishing', Sevak Pub., Mumbai.
4. J.N. Chakarverty, 'Fundamental and Practices in Colouration of Textiles', Wood Head Publications, **2008.**

## PROJECT & SEMINARS

**Subject Code: BFTE2-538** **L T P C**
**3 0 0 3**

**Course Objectives:** To develop creative as well as technical skill to formulate or develop some product.

Students have to carry out extensive literature survey, compile text material and pursue project on any specific topic assigned to him. The minor project may be also an initial part or literature survey of major project coming in next semester. It is expected from the students

that they will utilize assigned hours in library, laboratory or industry as per the requirement of the project. Evaluation of minor project will be carried out by faculty members. Each student will have to deliver a talk on the topics, in the weekly period allotted to the subject pertaining to his project work or any topic assigned by Head of the Department.
The performance of the speaker would be judged in the class.

## FINISHING LAB.

**Subject Code: BFTE2 – 539** **L T P C**
**0 0 4 2**

**Course Objectives:** To give practical exposure on various finishing chemicals and their applications in apparel industries.
Understanding of screen and block and stencil printing.
Printing of cotton, wool, silk, linen with direct resist and discharge printing. Pigment printing. Direct, discharge, resist and sublimation transfer printing of polyester fabrics. Printing of garments. Batik printing, different designs of tie-dye printing. Burn out printing, glittering printing, etc. Demonstration and practice on Lectra- Kaledo Print Software.
Applications of various finishes on textile materials such as - starch, anticrease finish, flame retardant finish, water repellent finish, softening agents, fragrance finishes, OBA, etc on basis of availability in the lab and their evaluation.

**Recommended Books**

1. E.P.G. Gohl and L.D. Vilensky, 'Textile Science', CBS Publishers, Delhi, **1983.**
2. 'An Introduction to Textile Finishing', V.A. Shenai, Textile Finishing, Sevak Publication, Mumbai.
3. J.N. Chakarverty, 'Fundamental and practices in Colouration of Textiles', Woodhead Publishing India Pvt. Ltd., **2008.**
4. V.A. Shenai, 'Technology of Printing', Sevak Pub. Mumbai.
5. Clarke, 'An introduction to Textile Printing', CBS Pub Delhi.
6. R.B. Chavan,'Textile Printing', Second annual Symposium.

**Note:** At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by teacher as per the scope of the syllabus.

## PATTERN MAKING AND GRADING LAB.

**Subject Code: BFTE2 – 540** **L T P C**
**0 0 4 2**

**Course Objectives:** To give hands on training to students on pattern making and grading, manipulation of darts, application of CAD software, etc.
Practice of pattern making and construction of shirts, pants/trousers and Jackets/Coats.
Introduction to "Basics of Computer Aided Design for Pattern making and grading". Usage of different drawing and measuring tools. Basic Block construction and digitization of patterns. Pattern making of different garments, e.g. skirts, jackets through assembly of lines, points, derived pieces, fold etc.
Introduction to Grading techniques. Application of grading system to basic blocks and adaptations.

**Recommended Books**

1. Armstrong, 'Pattern Making for Fashion Design', Dorling Kindersley Publication.

2. Aldrich, 'Metric Pattern Cutting Men's Wear', 4th Edn., Blackwell Publication.
3. Aldrich, 'Metric Pattern Cutting for Children Wear & Baby Wear', Blackwell Publication.
4. Aldrich, 'Pattern Cutting for Women Tailored Jacket', Blackwell Publication.
5. Holman, Pattern Cutting Made Easy, Batsford Publication.
6. Cooklin, 'Pattern Grading Men's Cloth', Blackwell Publication.
7. Cooklin, 'Pattern Grading Women's Cloth', Blackwell Publication.

**Note:** At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by teacher as per the scope of the syllabus.

## ADVANCE APPAREL CONSTRUCTION LAB.

**Subject Code: BFTE2-541** **L T P C**
**0 0 4 2**

**Course Objectives:** To give hand on training on apparel construction and their techniques. Practice of pattern making and construction of shirts, pants/trousers, Jeans and Jackets/Coats. Development of Design of Men's tailored clothing. Presentation/exhibition of garments prepared in advance apparel construction lab I or II by the students on mannequins or in terms of fashion shows. Development of Design of Men's tailored clothing. Making of Flat sketches, Moodboard, Storyboard and Portfolio.

**Recommended Books**

1. Armstrong, 'Pattern Making for Fashion Design', Dorling Kindersley Publication.
2. Aldrich, 'Metric Pattern Cutting Men's Wear', 4th Edn., Blackwell Publication.
3. Aldrich, 'Metric Pattern Cutting for Children wear & baby wear', Blackwell Publication.
4. Aldrich, 'Pattern Cutting for Women tailored Jacket', Blackwell Publication.
5. Holman, 'Pattern Cutting Made Easy', Batsford Publication.
6. Cooklin, 'Pattern Grading Men's cloth', Blackwell Publication.
7. Cooklin, 'Pattern Grading Women's cloth', Blackwell Publication.

**Note:** Number of experiments or construction of garments may vary as per availability of resources.

## PLANT LAYOUT & FACILITY DESIGN

**Subject Code: BFTE2-642** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**

**Course Objectives: To impart knowledge about plant location, plant lay out, material handling and Facility design and their importance in Textile and Garment industries.**

**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (12 marks). Students have to attempt 5 questions in total at least one question from each unit

### Unit 1

Plant Location- Theories of plant location and location economics. Location of Textile & Garment Industries, its importance, factors influencing plant location, building, structure, lighting, ventilation, etc.

### Unit 2

Plant layout-Objectives and importance of layout in Textile & Garment Industries, Principles of plant layout, types of plant layout, their merits and demerits, basic layout types various

approaches to plant layout, Modular design concept, Production Line balancing. Computer Aided Layout

**Unit 3**

**Material handling:** Definition, principles, system design and selection of equipment, unit load concepts, availability of labour, material management and transportation.
Space Determination and Area Allocation. Factors for consideration in space planning, receiving, storage, production, shipping, other auxiliary service actions. Establishing total space requirement, area allocation factors to be considered, expansion, flexibility, aisles column and area allocation procedure.

**Unit 4**

**Facility Design:** Its importance, factors influencing Facility design in Textile and Garment plants, categories of facility design, etc. Design of layout, Method of constructing the layout, evaluation of layout, presenting layout to management, implementing Quantitative Approaches to Facilities Planning
Warehouse layout models, plant location problems. Evaluation, Selection, implementation and maintenance of the facilities plan.

**Recommended Books**

1. Chandrashekhar Hiregoudar, 'Facility Planning and Layout Design'.
2. Ruddell Reed, 'Plant Layout: Factors, Principles and Techniques'.
3. James Mendon Moore, 'Plant Layout and Design'.

## APPAREL TECHNOLOGY MANAGEMENT

**Subject Code: BFTE2-643** **L T P C** **Duration: 38 Hrs.**
**3 0 0 3**



**Course Objectives:** To introduce various terms and techniques related to Industrial Engineering, work study, Method Study, Plant Engineering, Production & productivity, etc
**NOTE:** Examiner will set 9 questions in total, with two questions from each unit and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal mark (`12 marks). Students have to attempt 5 questions in total at least one question from each unit.

**Unit – 1**

**Human Resource Development:** Introduction to Structure and Sectors of Apparel Industry - Job Analysis and Description – Job Specification – Recruitment and Selection – Kinds of Interview - Purpose Of Appraisal – Criteria Of Appraisal – Methods Of Appraisal Methods – Limitations - HRD Methods And Processes – Sewing Room Supervisor's Job And Training Needs - HRD In Indian Apparel Industry.

**Unit - 2**

Plant Engineering & Line Balancing Introduction to Garment Industry Plant Location – Location Economics – Plant Layout – Process Layout – Product Layout – Combination Layout – Introduction to Balancing Theory – Balance Control – Balancing Exercises for Garment Industry.

**Unit – 3**

Work Study Concept and Need – Method Study and Work Measurement –Techniques – Process Chart Symbol – Process Flow Chart – Flow Diagrams – String Diagrams – Multiple Activity Chart – Principles of Motion Economy – SIMO Chart – Time Study Methods – Standard Time Data – Ergonomics with Special Reference to Garment Industry.

**Unit – 4**

**Production and Productivity:** Methods of Production Systems – Job, Mass & Batch – Section Systems, Progressive Bundle System & „Synchro" System – Conveyor Systems –

Unit Production System – Quick Response. Productivity Concepts – Measurement Of Productivity– "Man Machine Material" – Criteria For Increasing Productivity.

Production Planning and Control - Function, Qualitative And Quantitative Analysis Of Production - Coordinating Departmental Activities - Basic Production Systems - Evaluating And Choosing The System - Flow Process And Charts For Garment - Scheduling Calculations -Assigning Operators Optimally - Setting Up Complete Balanced Production Lines To Produce Given Amount Of Garments

**Recommended Books**

1. Jacob Solinger, 'Apparel Manufacturing Handbook', Van Nostrand Reinhold Company, **1980.**
2. Tyler, 'Carr and Latham's Technology of Clothing Manufacturing', Blackwell.
3. Jones, Richard M., 'Apparel Industry', 2nd Edn., Blackwell,
4. Chuter, 'Introduction to Clothing Production Management', Blackwell.

## PROJECT

| **Subject Code: BFTE2-644** | **L T P C** |
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**Course Objective:** To develop creative as well as technical skill to formulate or develop some product.

Students have to carry out literature survey, compile text material and pursue project on any specific topic assigned to him. It is expected from the students that they will utilised allotted hours/ week in library, laboratory or industry as per the requirement of the project. In case of industrial project, student may spend required time in industry in consultation with faculty/ supervisor. Students have to give their presentation in front of board of panel.