

## T.Y.B.TEXT. (FASHION TECHNOLOGY) SEMESTER-I

SR. NO.	SUBJECTS	TEACHING SCHEME				EXAMINATION SCHEME				SUB. TOTAL
		L	T	DR	PR	PT	TW	OE	PE	
5.1	TEXTILE ELECTRONICS-II	3	---	---	2	100	---	---	50	150
5.2	STRUCTURE & PRODUCTION OF KNITTED FABRIC	3	---	---	2	100	25	---	---	125
5.3	GARMENT PROCESSING	3	---	---	2	100	---	---	50	150
5.4	TESTING OF TEXTILES & APPARELS	3	---		2	100	25	---	50	175
5.5	GARMENT PRODUCTION MACHINERY & EQUIPMENTS	3	---		2	100	25	---	---	125
5.6	FASHION ART & DESIGN	3	---	---	2	100	25	---	---	125
5.7	INPLANT TRAINING - I	---	---	---	---	---	50	---		50
		<b>18</b>	---	<b>0</b>	<b>12</b>	<b>##</b>	<b>##</b>	---	<b>150</b>	<b>900</b>

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 T =TUTORIALS TP - THEORY PAPER  
  
 DR=DRAWING TW - TERM WORK  
 PR=PRACTICALS

OE=ORAL  
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 PE=PRACTICAL  
 EXAMINATION

## T.Y.B.TEXT. (FASHION TECHNOLOGY) SEMESTER-II

SR. NO.	SUBJECTS	TEACHING SCHEME				EXAMINATION SCHEME				SUB.
		L	T	DR	PR	PT	TW	OE	PE	TOTAL
6.1	ADVANCED COMPUTER PROGRAMMING	3	---	---	2	100	50	---	50	200
6.2	FASHION ILLUSTRATION	3	---	---	3	100	25	---	---	125
6.3	EMBROIDERY & SURFACE ORNAMENTATION	3	---	---	3	100	50	---	50	200
6.4	HOME TEXTILES IN FASHION	3	---	---	---	100	---	---	---	100
6.5	MERCHANDISING IN APPAREL & FASHION INDUSTRY	4	---	---	---	100	---	---	---	100
6.6	MEN, WOMEN & CHILDREN'S WEAR	4	---	---	---	100	25	---	---	125
6.7	DESIGN COLLECTION & PRESENTATION	---	---	---	2	---	50	---	---	50
		<b>20</b>	---	---	<b>10</b>	<b>##</b>	<b>##</b>	---	<b>100</b>	<b>900</b>

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## THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-I

### 5.1 TEXTILE ELECTRONICS-II

Lectures	:	3 Hrs / Week
Practicals	:	2 Hrs / Week
Theory Paper	:	100 Marks
Practical Exam	:	50 Marks
Subject Total	:	150 Marks

#### I) **Digital Electronics and Number System:-**

Difference between digital and analog, digital gates, working, truth table & Boolean equation, with examples from TTL family.

Digital Circuits :- Introduction to multiplexers, Demultiplexers, Encoders, decoders, Flip Flop – R-S, D & J – K, Registers Latches, binary counter, buffers, Tri state devices, memories – RAM, ROM, EPROM.

Introduction to Number systems :- Decimal, Binary, hexadecimal, conversion of numbers from one system to other. Binary arithmetic – addition, subtraction, two's complement representation.

#### II) **8085 Microprocessor:-**

Introduction to microprocessor, features of 8085, Architecture of 8085 – Register section, ALU, Timing & Control etc. Demultiplexing of address data bus. Generation of control signals, Example of microprocessor based system, 8085 machine cycles and bus timing. Memory interfacing to 8085.

#### III) **Programming of 8085:-**

Instruction classification, instruction and data formats, addressing modes, complete instruction set, assembly language programming, Execution of programs, programming with looping, counting & indexing techniques. Time delay's & counters.

#### IV) **Stacks and Subroutine:-**

Stack, subroutine, call & Return instructions advanced subroutine concepts.

- V) **Interfacing Input / output devices:-**  
Basic interfacing concept, interfacing output displays, interfacing input devices, difference between peripheral Input/output memory mapped Input/out.
- VI) **Interrupts:-**  
Concept of interrupts, software & hardware interrupts, Description of interrupt process, vectored interrupts, programming using interrupts.
- VII) **Interfacing of peripherals & other I/O devices:-**  
8255 PPI interfacing & programming, interfacing of keyboard (matrix) & display, interfacing of thumbwheel switches, stepper motor, D/A & A/D converters, Relays etc.
- VIII) **Introduction to Microcontroller:-**  
Introduction to microcontroller, Block diagram of microcontroller, Difference between microprocessor and microcontroller, Features of 8051 microcontroller, Introduction to PLC & its applications.
- IX) **Applications of Microprocessor in Textiles:-**  
Use of Microprocessor / Microcontroller in Sizing Machine, Jet dyeing machine, advanced looms, Spinning machines, Ring data System, Auto levelers, On-line monitoring systems, Evenness tester.

### **List of Experiments**

- 1) Study of basic gates.
- 2) Study of flip flops
- 3) Assembly language programmes ( 6 to 8)
- 4) Interfacing of 8255 in simple I / O & BSR mode.
- 5) Interfacing of Seven segment display.
- 6) Interfacing of keyboard.
- 7) Interfacing of stepper motor.
- 8) Interfacing of D/A converter.
- 9) Interfacing of A/D converter.
- 10) Interfacing of thumbwheel.

### **Reference Books**

- 1) Digital Principles and applications by Malvino & leach.
- 2) Microprocessor Architecture, Programming and applications with 8085 by Ramesh Gaonkar.
- 3) Microprocessor & Digital system by Douglas Hall.
- 4) Fundamentals of microprocessors & microcomputers by B. Ram.
- 5) The 8051 Microcontroller Architecture, Programming and Applications by Kenneth J, Ayala.
- 6) Machine manuals of USTER, LOPHE, PREMIER

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-I**

### **5.2 STRUCTURE & PRODUCTION OF KNITTED FABRIC**

Lectures	:	3 Hrs / Week
Practicals	:	2 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	25 Marks
Subject Total	:	125 Marks

- I) **Introduction:-** Reasons for the growth of knitting, Comparison of knitted & woven fabric with respect to production and properties, Hand knitting. Knitting processes (weft & warp) and their structures. Basic terms and definitions used in knitting (wales, courses, stitch length, stitch density, face & back loops)
- II) **Weft Knitting:-**
1. Machine: Passage of yarn through circular weft knitting machine. Study of elements of knitting machines such as : Creel, Yarn feeding – Need, types, stop motions, indicators, tensioners etc. , Loop forming mechanism – Knitting cycle, types of needles and their comparison, Study of essential elements of loop forming such as cylinder, sinker, cam, dial, yarn guide. etc, Loop forming cycle for single jersey, rib and Interlock fabrics. Take down motion – Spreader, Nip roller, cloth roller
  2. Fabric structures: - Principle stitches such as knit, Tuck, miss and their representation, their effects on fabric properties. Types and properties of knitted fabrics such as single jersey, double jersey and their derivatives like interlock, Rib and purl etc. Pattern analysis method, Needle order, Cam order. Pattern structures with one, two, three & four needle types (Single Jersey : cross miss, Lapique, Longitudinal tuck stripes, Plain pique. Rib : Milano, Half Milano, Cardigan, Half Cardigan, Double Cardigan, Swiss and French double pique. Interlock: Pique, Texi Pique, Pin tuck, Interlock Super Roma, Bourrelet). Concept of colour and structure Jacquards. Fleecy fabrics, plush fabrics, stripers, Loop transfer.
  3. Study of weft knitted fabric defects and their remedies, yarn quality requirements.
  4. Circular weft knitting machine production calculations, fabric weight and Tightness factor. Knitted fabric relaxation concept.

### III) **Flat Knitting :-**

1. Basic elements & their functions of flat knitting machine. Hand and machine operated flat knitting machines & their knitting actions.
2. Machine operation for various stitches such as Miss, Tuck, Transfer, drop stitch.
3. Design with and without needle selection, bed racking, new formed and transfer loop for hand and machine operated machines.
4. Concept of seamless knitting.

### IV) **Warp Knitting :-**

1. Passage of yarn through warp knitting machine. Essential elements of warp knitting machine. Knitting cycle of Tricot and Raschel warp knitting machine.
2. Study and representation of single and two guide bars structures like Piller stitch, Tricot, Blind lap, In lay, Atlas, Full Tricot, Locknit, Reverse Locknit, Satin, Loop raised, Shark Skin, nettings and Crochet
3. Methods for calculating runner ratios for each bar for different structures.

### **List of Experiments**

1. Study of single jersey circular weft knitting machine – yarn supply arrangements, loop forming mechanism, takedown motion, Production calculation.
2. Study of double jersey circular weft knitting machine – yarn supply arrangements, loop forming mechanism, takedown motion, Production calculation.
3. Study of warp knitting machine – yarn supply arrangements, loop forming mechanism, takedown motion, Production calculation.
4. Study of flat knitting machine – yarn supply arrangements, loop forming mechanism, takedown motion, Production calculation.
5. Design setting on single jersey circular weft knitting machine- Machine operation, cam & needle arrangements, yarn feeding and take down setting.
6. Design setting on Double jersey circular weft knitting machine- Machine operation, cam & needle arrangements, yarn feeding and take down setting.
7. Knitted fabric analysis Single jersey
8. Knitted fabric analysis Derivative of single jersey

9. Knitted fabric analysis. Derivative of single jersey
10. Knitted fabric analysis. Double Jersey
11. Knitted fabric analysis. Derivative of Double Jersey
12. Visit to knitting unit.

### **Reference Books**

1. Knitting Technology by Prof.D.B. Ajgaonkar.
2. Circular Knitting by Dr. Chandrashekhar Iyer.
3. Knitting Technology by Mr. D. Spenser.
4. Warp Knitting by Dr. S. Raz.
5. Flat Knitting by Dr. S. Raz.

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-I**

### **5.3 GARMENT PROCESSING**

Lectures	:	3 Hrs / Week
Practicals	:	2 Hrs / Week
Theory Paper	:	100 Marks
Practical Exam	:	50 Marks
Subject Total	:	150 Marks

- I. **Introduction** – Objects of finishing, Importance of finishing, classification of finishes, Difference between finishing of woven fabric, Knit goods, Terry towel and Readymade garments.
- II. **Resin Finishing** – Mechanism of resin finishing, concept of anti crease, wash-n-wear and durable press finish.
- III. **Finishing of Synthetic Materials** – Heat setting and weight reduction of polyester
- IV. **Functional Finishes** – Soil release finish, water repellent and flame retardant finish, anti microbial finish, Anti static finish, mildew and moth proofing finish, Organdie finish.
- V. **Finishing of Readymade Garments** – Aim and scope of garment field with special reference to textile wet processing. Difference between pre-garment stage and readymade garment stage finishing, concept of garment finishing,



general precaution to be taken during finishing of cotton, wool, silk, rayon, woven and knitted materials.

- VI. **Speciality Finishes on Garments** – Finishing of woven / knitted garments – Stoneless stone wash effects – Mud wash, Ion wash, chalk wash etc. , various softening treatments, water resistant breathable finish, Bio polishing, Leathery Finish, Protective Finishes – Antimicrobial, Deodorizing etc., Functional Finishes – Cool finish, Thermocat finishes, Wrinkle free finishes.
- VII. **Wash down effects on Denim** - Stone Wash, Enzyme Wash, Combined enzyme and stone wash, Acid wash, Antique wash, Ball blast, Whiskering, Sand blast, Ice wash.
- VIII. **Finishing Machines** – Rotary and paper press, Drum washing machine, hydro extractor, Tumble drier, Pedal dyeing machine, Whiskering Machine, Fusing Machine.
- IX. **Finishing of Wool** – Potting, Crabbing, Felting.

#### **List of Experiments**

1. Weight reduction to produce silk like finish
2. To identify various types of stains and their removal
3. To test cotton & blended fabrics for dimensional stability (Shrinkage)
4. Wrinkle free finishing of garment.
5. Permanent press finishing of garment
6. Softening treatments on garment.
7. Stiffening treatment on garment.
8. Soil release finishing.
9. Water repellent finishing.
10. Antimicrobial finishing on garment.
11. Bio-polishing treatment on garment.
12. Stone wash on garment.
13. Acid wash on garment.
14. Special printing on garments like Plastizol.
15. Pearl and Metallic Printing on garment.

## **Reference Books**

- 1) Chemical after treatments of textile by Marks, Atlas & Wooding.
- 2) Textile finishing by A.J. Hall.
- 3) Introduction to textile finishing by J.T. Marsh.
- 4) Technology of finishing – Vol. X by Dr. V.A. Shenai.
- 5) Chemical processing of polyester/cellulosic blends by R.M. Mittal and S.S. Trivedi.
- 6) Silk dyeing, printing and finishing by Prof. M.L. Gulrajani.
- 7) Garment Finishing & Care Labelling by S.S. Satsangi, Usha Publishers, 53-B/AC-IV, Shalimar Bagh, New Delhi.
- 8) Stain Removing Techniques by S.S. Satsangi, Usha Publishers, 53-B/AC-IV, Shalimar Bagh, New Delhi.
- 9) Fabric Care by Noemia D'SOUZA, New Age International Publishers, Daryaganj, New Delhi.

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-I**

### **5.4 TESTING OF TEXTILES & APPARELS**

Lectures	:	3 Hrs / Week
Practicals	:	2 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	25 Marks
Practical Exam	:	50 Marks
Subject Total	:	175 Marks

- I) **Classification of fabric Properties, Sampling of Fabrics**
- II) **Dimensional characteristics** - Length, width & thickness and their measurement, importance of thickness.
- III) **Threads/Unit length** – EPI and PPI, count warp count, weft count, weight of fabric weight per unit length, weight per unit area, warp & weft crimp, effect of crimp on the fabric properties, Measurement of crimp, fabric cover – cover factor.
- IV) **Fabric Strength** – Tensile strength testing – cut strip method, Grab test method, comparison between strip test & grab test, Tear strength testing – Measurement of tear strength – different methods of testing, ballistic test, bursting test & its measurement.

- V) **Fabric abrasion & Handle of fabric** – Serviceability, wear, abrasion, testing of abrasion resistance, assessment of abrasion damage, the BFT abrasion testing machine, Martindale abrasion tester.
- VI) **Pilling of fabrics** – Pills, mechanism of pilling, factors responsible for pilling, effect of pilling, remedies, ICI Pill Box Tester.
- VII) **Fabric Stiffness, Handle & Drape** – Handle, drape, measurement of drape, stiffness, Shirley stiffness tester (cantilever test), Heart loop test.
- VIII) **Crease resistance & crease recovery, measurement of crease recovery.**
- IX) **Air permeability**– air permeability, air resistance, air porosity, SHIRLEY air permeability tester,
- X) **Water proofing & water repellency** – Wetting time test, spray test. Drop penetration test, Bundesmann testers, Water head tester.
- XI) **Fabric Hand** – Objective & subjective evaluation of textiles, Measurement of fabric hand by KAWABATA & FAST techniques
- XII) **Luster** – Subjective aspects of luster, measurement of luster, Effect of fabric construction in luster.

### **Apparel Testing**

Strength properties of Apparel Fabrics – Fabric strength, Seam Strength, Resistance to Yarn Slippage, Fabric Stretch Properties, Dimensional Stability in Apparel, Durable Press Evaluation, Needle cutting/Yarn Severance, Sewability of Fabrics, Soil/Stain Release Testing, Snagging, Colorfastness to – Washing, Dry Cleaning, Light, Crocking, Perspiration, Frosting, Heat, Burnt Gas fumes, Ozone Testing of Fusible interlinings, Testing of Zippers, Testing of Elastic Waistband

### **List of Experiments**

1. Determination of Fabric Tensile strength and Elongation
2. Determination of crimp in Yarn.
3. Determination of Abrasion Resistance.
4. Determination of Fabric bursting strength
5. Determination of fabric washing fastness.
6. Determination of Shrinkage of knitted and woven fabrics.
7. Determination of color fastness to rubbing - Crock meter

8. Analyzing of Woven and knitted fabric EPI, PPI, Wales and courses per inch, loop length, GSM,
9. Determination of fabric stiffness and crease recovery angle.
10. Determination of fabric Drape
11. Seam strength testing
12. Dimensional Stability

**Reference Books**

1. J.E.Booth- "Principles of Textile Testing", CBS Publishers & Distributors, 1996.
2. Sundaram V, "Hand book of Textile Testing", CTRL Publication, Bombay.
3. Textile Testing Vol.I & II by Anagappan & Gopalkrishnan
4. An Introduction to Quality Control for Apparel Industry , Pradip Mehta
5. Managing Quality in the Apparel Industry, Pradip Mehta & Satish Bhardwaj

**THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-I**

**5.5 GARMENT PRODUCTION MACHINERY & EQUIPMENTS**

Lectures	:	3 Hrs / Week
Practical	:	2 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	25 Marks
Subject Total	:	125 Marks

- I) Introduction to spreading machines and cutting machines - types and functions History of sewing machines and development. Sewing machinery - classification according to bed types, stitch types (hook or looper), material wise (extra light to heavy weight).
- II) Major parts of sewing machinery and functions. Adjustment of major parts of Single needle lock stitch machine: non-UBT: stand height, pedal, presser foot, height of needle bar, needle to hook relationship, height of feed dog, normal and reverse feed stitch length, feed timing, presser foot pressure, needle and bobbin thread tension, bobbin winding assembly, belt tension. Sewing machine safety regulations.

- III) Sewing needle and sewing thread, thread consumption, thread routing. Adjustment on SNLS UBT: Needle stop position, wiper, thread timing sequence, timing of thread trimmer cam, positioning the moving knife, installation, sharpening, replacing moving knives, adjusting the floating amount of the auxiliary tension disk.
- IV) Parts, functions and adjustments of Over lock: Needle height, feed dog height, differential feed ratio, tilt of the feed dog, position of the upper and lower knives, sharpening of knife and loopers, trouble shooting in over lock.
- V) Work-aids and attachments, functions of pullers, guides and folders compensating presser foots- left, right, double; feller, hemmer etc. Collar turning machines, folding machinery, fusing and pressing machinery. Computer controlled cutting, sewing, folding machinery.

### **List of Experiments**

1. Study of various types of cutting machine for the working & construction.
2. Study of various types of cutting machine for the working & construction.
3. Study the various types of beds of the sewing machines.
4. Study the major parts of sewing machines.
5. Study of Needles for the sewing machine.
6. Study of sewing threads.
7. Study of single needle sewing machine for working & construction.
8. Study of overlock sewing machine for working & construction
9. Study of special sewing machines for working & construction.
10. Study of feed off the arm machine for working & construction
11. Work aids and attachment for sewing machine.
12. Visit to garment unit.

### **Reference Books**

1. Jacob Solinger., "Apparel Manufacturing Handbook ", Van Nostrand Reinhold Company (1980).
2. Peyton B .Hudson., " Guide to Apparel Manufacturing ", MEDIAppearl Inc (1989) ISBN: 0 -945116-08-X.
3. Carr.H, Latham. B., " The Technology of Clothing Manufacture ", Blackwell Scientific Publications(1988).

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-I**

### **5.6 FASHION ART & DESIGN**

Lectures	:	3 Hrs / Week
Practicals	:	2 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	25 Marks
Subject Total	:	125 Marks

- I) Origin of clothing – Grouping of dress out of painting, cutting and other methods. Role of costumes as a status symbol, sex appeal, Fashion and seasons. Costumes of ancient civilization – Egypt, Greece, Roman, English, French empires during Renaissance 1500 –1600 AD.
- II) Costumes of India. History of Indian costumes up to Mughal period, History of Indian costumes post Mughal period. Traditional costumes of different states. In India – Factors influencing costumes changes. Accessories and Garment used in India. Costumes of Pakistan, Srilanka, Burma, China & Japan.
- III) Lines- color, light Theory of Color, prang of color system – Proportions – rhythm – Balance. Emphasis, Harmony – Sketching and Drawing – Fashion Classification And Types Of Fashion – Origin of Fashion language – Philosophy of Design – street Fashion – Study of leading Fashion Designers – French, Italian, American, Indian& English.
- IV) Concepts of Design – Background to the world of Fashion Design – Definition Of Fashion Designing – Initial steps of Fashion Designing – Ingredients of Fashion Designing – Designing Equipments – Computer Aided Designing. Knowledge Of Latest Fashions – Based On Age, Sex, Nationality, Occupation, Socio Economic Status.
- V) Study of Dacca Muslin, Jamdhani, Himrus & Amrus, Carpets, Kashmir shawls, Kancheepuram & Baluchari saris, Paithani Saris, Bandhani, Patola, Ikkat, Kalamkari & other styles of printing and dyeing textiles. Factors determining changes in Costumes from period to period.
- VI) Design Details of:
  - (a) Neckline finishes classification and their types.
  - (b) Collars – classification & Their types
  - (c) Seam & Pockets – Classification & Their types
  - (d) Cuffs.

### **List of Experiment**

1. Drawing of Neckline finishes I
2. Drawing of Neckline finishes I
3. Drawing of Collars and their types
4. Drawing of Collars and their types
5. Drawing of Collars and their types
6. Drawing of different types of Seams
7. Drawing of different types of Seams
8. Drawing of different types of Pockets
9. Drawing of different types of Pockets
10. Drawing of different types of Cuffs.

### **Reference Books**

1. Russel Gillow, Nicholas Barnard, "Traditional Indian Textiles", Thames and Hudson Ltd., London, 1991.
2. Elizabeth Rouse, "Understanding Fashion", Blackwell Scientific Publication, Oxford, 1989. ISBN:0632018917.
3. Mckelvey, K. and Munslow, J. "Illustrating Fashion", Blackwell Science, 1997, ISBN:0632040246.
4. Entwistle, J. "The Fashioned Body", Polity 2000, ISBN: 0745620078.
5. S.N Dar, "Costumes of India & Pakistan", D.B Tataporevala sons & co. Ltd., 1982.
6. Churye G.S, "Indian Costume", Ramdas Bhatkal for Popular Prakashan Pvt. Ltd., Bombay, 1995.
7. Corter Ernestine, "The Changing World Of Fashion", Om Book Service, 1900 to
8. present.
9. Singer, "Sewing Active Wear", The Hamlyn Publishing group Ltd., London 1963.
10. Hatanaka kokyo Collection –"Textile arts of India", chronide Books, 1996
11. Madhubani, K.prakash, "An Invaluable book on the original Art Tradition", Design Point, 1994.

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-I**

### **5.7 INPLANT TRAINING-I**

Term Work : 50 Marks

Subject Total : 50 Marks

#### **Objective:**

To provide an opportunity to observe industrial activities and gather related technical and non-technical information about industry working.

#### **Training Period:**

One Month after completion of second semester of Second Year B.Text.

#### **Industry:**

Training with a Boutique/domestic garment production house for minimum of 4 weeks/one month.

#### **Observations:**

Observe working of industry and collect data as per guidelines in the manual, study machineries / systems / practices.

During this period, students are required to study the layout, structure, process flow, Types of fabric, Types of Garment, Machinery working & specification, layout, humidification, air supply system, material handling systems, inspection techniques, In-house quality practices, packing system for local and export market, industrial practices and the other relevant data, and information.

#### **Training Report:**

- \* Report should have Title on Cover of Report as per Format.
- \* Report should be prepared as per following sequence -
  - I Page Certificate from Institute as per Format.
  - II Page Acknowledgement
  - III Page Programme of Training
  - IV Page Introduction of Industry
  - V Page Index with Page Numbers
  - VI Page Plant/Dept. Layout
  - VII Page Organization Structure.
  - VIII Page Department wise / Product wise Report: Report should  
(Onwards) be based on Own Observations made, data



collected during Inplant Training (i.e. Study of Machinery, Actual Production and Efficiency, Production Control, Modern Developments in Machines/Process, Flow Chart of Processes, Speed of Important Parts, Labour Allocation, Maintenance Practices, Process Control & Quality Control Activities etc.) roles and responsibilities of various Workers/Technical Staffs.

Special Study: Mini Project Undertaken, Costing, Production Planning & Control, Target Achievement, Information regarding humidification plant, Utility, Electrical Supply, Store, Purchase, Marketing, Sales, Samples, Lay-out of Mill etc.

**Assessment:**

Viva-voce to be conducted in first semester of Third Year B.Text. Term Work Marks are assigned on the basis of student's performance in viva-voce, conducted by internal and external examiners from related field.

**THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-II**

**6.1 ADVANCED COMPUTER PROGRAMMING**

Lectures	:	3 Hrs / Week
Practicals	:	2 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Practical Exam	:	50 Marks
Subject Total	:	200 Marks

**1. Introduction to Windows:**

Managing windows, working with disks, folders and files, finding lost files, creating backups, shortcut keys, installing and removing programmes, printing in windows, printer setting, fonts, installing fonts.

**2. Networking Concepts:**

Introduction to network, use of computer networks, network topologies, network types – LAN, MAN, WAN, network hardware components – cables, connectors, NIC, Hub, Switch etc. Network operating system, client/server architecture, Internet and its applications.

**3. Database Management:**

Introduction to database, records, Relational database management systems, structural query languages (SQL), SQL commands – Select, Insert, update, delete, joins – inner join, outer join, equijoin.

**4. Visual Basic Fundamentals:**

Introduction, projects in visual basic, project explorer, setting project options, Visual Basic code – understanding procedures, subroutines, functions, comments, code window & its features, controlling program flow, conditional branching, loops.

**5. Visual Basic Data Types:**

Data types in visual basic, - byte, Integer, long, single, double, currency, Boolean, data, string, object, variant, declaring variables, variable scope & life time, data conversion, arrays, constants, user defined data types.

**6. Designing User Interface:**

Forms, form properties, form events, loading, unloading, showing & hiding forms controls in visual Basic – label, buttons, text box, list, dropdown selection list, checkbox, option button, timer control, setting tab order, manus in visual basic.

**7. Dialogs:**

Introduction, message box, input box, common dialog.

**8. Programming Database Access :**

Introduction, Record set object – definition, properties, methods & events, records, working with record set in code, visual basic data control, Introduction to ADO.

**List of Experiments**

1. Study of Windows 98 operating system.
2. Working with Start Button, Desktop, Explorer, Control Panel.
3. Study of network System with commands from Novell Network.
4. Creating databases, tables using Ms-access.
5. Working with SQL Commands like Select, Insert, Update, Delete, etc.
6. Creating simple form in Visual Basic.

7. Writing applications in Visual Basic using multiple forms, various controls (like radio button, list etc.) and database application using data control for
- ◆ Finding mean, SD, CV% of yarn strength testing machine
  - ◆ Finding twist & its SD, mean & CV%
  - ◆ To calculate production of winding m/c, warping m/c, sizing m/c, looms, (Weaving Machine.), blow room, card, speed frame, ring frame etc (Spinning Machine).
  - ◆ Finding % exhaustion of dye bath.
  - ◆ Finding correlation between whiteness & strength.
  - ◆ Finding at add on of finish.

### **Reference Books**

1. Windows 95 for busy people – Ron Mansfield (Tata McGraw-Hill Edition)
2. Computer Guide to Networking – Peter Norton (Techmedia publication)
3. Computer Networks (Third Edition)
4. SQL for professional – Swapna Kishore, Rajesh Naik (Tata McGraw-Hill editon)
5. Guide to Visual Basic 6 – Peter Norton (Techmedia Publication)
6. Beginning Visual Basic 6 – Peter Wright (WROX Publication)

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-II**

### **6.2 FASHION ILLUSTRATION**

Lectures	:	3 Hrs / Week
Practicals	:	3 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	25 Marks
Subject Total	:	125 Marks

- I) Anatomy for Designer – Human proportion and figure construction
- II) Head the unit of measurement – methods of determining individual proportions – Basic Drawing of the Fashion Figure – Flat Sketching average proportions- Methods of determining standards of Child, Men & Women’s Figure
- III) Drawing the Lay figures – Three Quarter View of Lay Figure – proportions of the figure measuring 8 Heads
- IV) Sketching and illustration of body figures and body shapes
- V) Display of Fashion Materials – Definition , Importance, Source, Techniques, Window Display
- VI) Folios – Creative- Dress – Designer

#### **List of Experiments**

1. Concept of fashion drawings
2. Drawing of Basic figures,
3. Drawing of Bone Structure
4. Drawing of Muscle view
5. Drawing of Front view ½ sheet each
6. Drawing of Side view
7. Drawing of Back pose
8. Drawing of Structure of hands, legs & foot
9. Enlargement and reduction of Basic Figures
10. Drawing the face & Facial proportion
11. Drawing of hair Styles
12. Drawing of 8 Head Figure

## **Reference Books**

1. Fashion Drawing Designs by Magazine of Thailand
2. Fashion Drawing – The Basic Principles by Anne Allen and Julion Seaman
3. Fashion Illustration by Bina Abling
4. Erwin Mabel(1994) Clothing for Moderns Macmillan Publications, New York.
5. Mckelvey, K. and Munslow, J. “Illustrating Fashion”, Blackwell Science, 1997, ISBN:0632040246.
6. Tate and Sharon Lee 1976. Inside Fashion Design Canfield Press publication Inc London

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-II**

### **6.3 EMBROIDERY & SURFACE ORNAMENTATION**

Lectures	:	3 Hrs / Week
Practicals	:	3 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Practical Exam	:	50 Marks
Subject Total	:	200 Marks

- I) Introduction and origin of embroidery – general rules for hand and machine embroidery, Attachments of sewing machines for embroidery – Selection of needle, threads & fabrics for embroidery.
- II) Knowledge, classification & practice of hand embroidery stitches- running, couching, button hole, satin, long & short, wheat, chain, stem, herringbone, cross stitch, knotted stitches, fish bone etc. Some Indian traditional embroideries – Phulkari, Kasuti, Kashmiri embroidery, kutch work, chikkankari, kantha, tribal embroideries- stitches, designs, colors and materials used.
- III) Knowledge & practice of the following machine embroideries and surface ornamentations– eyelet work, cutwork, Richelieu work, lace work, drawn thread and fabric work, patch work, mirror work, applique, shaded embroidery,

shadow work, badala work, bead and sequins work, bobbin thread embroidery etc.

- IV) Selection of thread color and suitable stitches for embroidery using computer  
–Care and maintenance of embroidery articles – pressing embroidery articles  
– frames & backing materials Types & Purposes. Estimating, costing & marketing of finished embroidery goods.
- V) CAD Softwares used for embroideries – process of designing, types of stitch applications, punching. Types of embroidery machines and their working – vertical embroidery machines, multi-head embroidery machines- Special attachments in Embroidery machines.

### **List of Experiments**

1. Study of the stitches and work style .
2. Study of historical background motifs, colours, and materials used in embroideries of Phulkari, Kasuti.
3. Study of historical background motifs, colours, and materials used in embroideries of Kashmiri, Kutch.
4. Study of historical background motifs, colors, and materials used in embroideries of kantha and tribal embroidery.
5. Study of computerized embroidery machine.
6. Selection of material for different types of embroidery work and for the different articles.
7. Study of embroidery software.
8. Design development for embroidery.
9. Design development for embroidery.
10. Embroidering of the developed design on machine.
11. Study of the special types of embroidery machines and applications.
12. Visit to Embroidery unit.

### **Reference Books**

1. Shailaja D. Naik, “Traditional Embroideries of India”, A.P.H Publishing Corporation, New Delhi, 1996.
2. . Sheila Paine, “Embroidered textiles”, Thames and Hudson Ltd., 1990.

3. 2. Gail Lawther, "Inspirational Ideas for Embroidery on clothes & Accessories", Search Press Ltd., 1993.

### **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-II**

#### **6.4 HOME TEXTILES IN FASHION**

Lectures : 3 Hrs / Week

Theory Paper : 100 Marks

Subject Total : 100 Marks

- I) Textile for seating – Upholstery fabrics for domestic applications – scope, fixed upholstery, non-stretch loose covers, stretch covers. Upholstery fabrics for contract use – general, automotive applications, Commercial applications.
- II) Window Textiles – Sun filters (Sheers and nets), Semi-sheers, Reflective textiles, curtain fabrics & drapes, Blinds.
- III) Bed Textiles – Sheets & Pillow Cases, Quilted Textile, Blankets & Rugs - Jacquard blankets, Printed blankets, Fire proof blankets, Baby blankets. Bed Spreads, Mattress covers, (Ticking)
- IV) Fabrics for Wall Covering, Textile Art – Tapestries, Wall hangings, Textiles for screens & Room Dividers.
- V) Bathroom Textiles - General shower curtains, Terry Toweling.
- VI) Accessories – Scatter Cushions, Floor Cushions, Lampshade fabrics.
- VII) Table Textiles – Tablecloths – Colour – Woven & Printed type, jacquard types, embroidered types, non-woven types. Table mats – Colour -woven, Printed jacquard, embroidered.
- VIII) Textile Floor Coverings – Introduction, Pile Fibres, Backing fibres & fabrics – Tufted carpets, Needle felt backings, woven carpet. Woven Carpet Manufacture – Wilton weaving, shedding mechanism, Axminster. Tufted Carpet Manufacture – Broadloom machinery, Hand tufting, Ancillary equipments Needle felt Manufacture – Needling machinery, textured & patterned needle felts, thermo-bonded products. Unconventional methods for making carpets – Bonding, knitted carpet, stitch bonding, flocking.

- IX) Towels :- Types of towels, Bath robes, Beech Towels, Kitchen Towels, Terry towels, Napkins - Construction, weave, pile height, patterning, production, dyeing, finishing, etc.
- X) Velour: - Types of velvets – Jacquard, Dobby, Plain, Printed – Manufacture & construction. Methods of velour making by cutting and shearing.
- XI) Kitchen Textiles :-Aprons, Dish cloth, Teacosy, Bread bag, Mittens, Pot Holders, Table Mats – Construction & manufacturing details.
- XII) General: - Hand / machine embroidered scarves, stoles, shawls, Madeups used in hospitals, etc. Textiles care labeling & Design aids.

### **Reference Books**

1. Carpets : Back to Front, Textile Progress, Vol.19, No.3 by – L Cegiela MA, The Textile Inst. Publication
2. Textile Floor coverings by G.H. Crawshaw, Textile Progress, Vol.9, No.2, The Textile Inst. Publisher.
3. Interior Furnishings', Textile Progress, Vol.11, No.1, By Mortimer O.Shea, The Textile Inst. Publication
4. Interior Furnishing by Mortimer O.Shea, Textile Progress, Vol.11, No.1, The Textile Institute, Publication.
5. Textile Floor covering by G.H. Crawshaw, Textile Progress Vol.9, No.2, The Textile Institute, Publication



## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-II**

### **6.5 MERCHANDISING IN APPAREL & FASHION INDUSTRY**

Lectures	:	4 Hrs / Week
Theory Paper	:	100 Marks
Subject Total	:	100 Marks

- I) **Organization of the Apparel Business** - Introduction to apparel industry - organization of the apparel industry types of exporters Business concepts applied to the apparel industry - International trade.
- II) **Marketing** - Functional organization of an apparel firm. Responsibilities of a marketing division - marketing objectives and strategies - Marketing research - Types of markets: Retails and wholesale strategies for merchandise distribution- retailers - sourcing flows and practices. Marketing plan. Labeling and licensing.
- III) **Merchandising** - Definition of merchandising - functions of merchandising division - Role and responsibilities of a merchandiser- different types of buyers -Communications with the buyers - awareness of current market trends – product development - line planning line presentation.
- IV) **Sourcing** - Need for sourcing - sourcing materials - manufacturing resources planning - principles of MRP – Overseas sourcing - sourcing strategies. Supply chain and demand chain analysis - Materials management for quick response - JIT technology.
- V) **Documentation** - Order confirmation, various types of export documents, Pre-shipment Post -shipment documentation, Terms of sale, payment, shipment etc.Export incentives: Duty drawback, DEPB, I / E license - exchange control regulation - foreign exchange regulation acts - export management risk - export finance. WTO / GATT / MFA - Functions and objectives, successes and failures.

#### **Reference Books**

1. D. Sinha., - " Export Planning and Promotion ", - IIMS, Calcutta (1989).
2. Tuhin K. Nandi., - " Import - Export Finance ", - IIMS, Calcutta (1989).
3. Elaine Stone, Jean A. Samples., - "Fashion Merchandising ", McGraw Hill Book Company (1985) ISBN: 0 - 07 - 061742 - 2.
4. S. Shivaramu., - " Export Marketing - A practical guide to Exporters ",Wheeler Publishing ( 1996) ISBN: 81-7544-166-6.
5. J.A. Jarnow, M.Guerreiro, B.Judelle., - " Inside the Fashion Business " ,Macmillan Publishing Company ( 1987) ISBN: 0-02-360000-4.

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-II**

### **6.6 MEN, WOMEN & CHILDREN'S WEAR**

Lectures	:	4 Hrs / Week
Theory Paper	:	100 Marks
Term Work	:	25 Marks
Subject Total	:	125 Marks

- I) Study of various types of kids wear and children's wear; measurements required for construction of kids & children's wear (Baba suit, Baby frock, shorts, Rompers, Pedal pushers). Selection of fabrics, trimmings, seams for Children's wear. Factors affecting selection.
- II) Pattern lay rules, common method of layout for asymmetric design, strips, checks and one way design for children's garments. Fit for children's garments.
- III) Step by step procedure for construction and minimizing fabric consumption for men's Boxer shorts, formal shirts with regular collar, button down collar-plackets – back tucks – center and side tucks – Balancing of designs – Asymmetric & symmetric designs - checks & stripes.
- IV) Step by step procedure for construction and minimizing fabric consumption for Men's formal trouser: –principles involved in fitting –step-by-step construction procedure for men's trousers. Formal trouser –pleated and flat front – Double welt and single welt back pockets- 5 pocket casual trousers.
- V) Step by step procedure for construction and minimizing fabric consumption for Men's suits: – principles of fit- step by step construction of 2 piece and 3 piece suits – single and double breasted suits.
- VI) Step by step procedure for pattern making & construction, nighties, blouses, midi skirts & tops – dart manipulation – dart relocation by pivot.
- VII) Method – connectivity darts into seams –fitting problems. Step by step Procedure for pattern making and construction of salwar kameez – selection of thread, color, material – embroidery using computer – beadwork and tinged work.
- VIII) Step by step pattern making – construction for trousers and peach bottom – pleated trousers - skirts 'A' line– umbrella- 6 gore skirt – circular skirt.

- IX) Intimate apparels – Different types of fitting for ladies inner wear – step by step procedure of construction– braziers – size & fit – ladies panties- – other lingerie’s- use of Elastomeric yarns in lingerie.

### **Reference Books**

1. Harold Carr & Barbara Latham, “The technology of Clothing Manufacture”, Blackwell Science Inc., 1994.
2. Singer, “Sewing Lingerie”, Cy DeCosse Incorporated, 1991.
3. Singer, “Sewing Active Wear”, Cy DeCosse Incorporated, 1986.
4. Singer, “Sewing Pants That Fit”, Cowles Creative Publishing Inc., 1989.
5. Patric John Ireland, “Fashion Design Illustration: Men”, B.T Batsford Ltd., London, 1996.
6. Cooklin Gerry, “Pattern Grading for Children’s”, Om Book Service, 1991.
7. Gerry Cooklin, “Garment Technology for Fashion Designers”, Blackwell Science, 1997

## **THIRD YEAR B. TEXT (FASHION TECHNOLOGY) - SEMESTER-II**

### **6.7 DESIGN COLLECTION & PRESENTATION**

Practicals	:	2 Hrs / Week
Term Work	:	50 Marks
Subject Total	:	50 Marks

#### **List of Experiments**

1. Forecasting colours, pattern and fabric for the ensuing seasons based on international forecast
2. Collections of fabric swatches and colours based on future forecast.
3. Collection of the laces, braids, linings, waddings, etc. on future forecast.
4. Preparation of story boards/Mood boards
5. Illustrating Fashion Models
6. Selection Fabric Swatches
7. Selection of Surface Ornamentation techniques
8. Preparation of various Styles for Selected fabrics
9. Selection of Seams, Necklines, Collars, Sleeves etc
10. Selection of cuffs, pockets , etc.
11. Selection of Accessories