

BHARATHIAR UNIVERSITY COIMBATORE – 641 046
M.Sc. TEXTILES AND APPAREL DESIGN
UNIVERSITY DEPARTMENT
(For the students admitted from the academic year 2017-2018 onwards)

SCHEME OF EXAMINATION – CBCS PATTERN

Subject Code	Study Components	Ins. hrs / week	Exam				Credit
			Dur Hrs.	CIA	Uni. Exam	Total	
Semester I							
13A	PAPER –I Research Methodology & Statistics	4	3	25	75	100	4
13 B	PAPER- II Advanced Textile Science	4	3	25	75	100	4
13 C	PAPER - III Apparel Production Technology	4	3	25	75	100	4
13 P	PRACTICAL -I Innovative CAD Designing	6	4	40	60	100	4
13Q	PRACTICAL -II Advanced Draping	6	4	40	60	100	4
1EA	ELECTIVE –I	4	3	25	75	100	4
	Supportive I Offered by other Departments	2	3	12	38	50	2
Semester II							
23 A	PAPER-IV Advanced Wet Processing	4	3	25	75	100	4
23 B	PAPER-V Technical Textiles	4	3	25	75	100	4
23 C	PAPER-VI Textile Testing	4	3	25	75	100	4
23 P	PRACTICAL –III Textile Testing	6	3	40	60	100	4
23 Q	PRACTICAL –IV- Advanced Garment Construction	6	4	40	60	100	4
2 EB	ELECTIVE –II	4	4	25	75	100	4
	Supportive II Offered by other Departments	2	3	12	38	50	2
Semester III							
33 A	PAPER- VII Apparel Quality Standards and Implementation	4	3	25	75	100	4
33 B	PAPER-VIII Clothing Appearance and Fit	4	3	25	75	100	4
33 C	PAPER-IX Eco Textiles and Sustainability	4	3	25	75	100	4
33 P	PRACTICAL -V Surface Enrichment on Textiles	6	4	40	60	100	4
33 Q	PRACTICAL -VI Portfolio Presentation	6	4	40	60	100	4
3 EC	ELECTIVE - III	4	3	25	75	100	4
	Supportive III Offered by other Departments	2	3	12	38	50	2
Semester IV							
43 P	Practical -VII CAD in Textile Designing	6	4	40	60	100	4
47 V	Project work & Viva voce *			-	-	200	8
TOTAL						2250	90

***For Project Report 80% Marks & Viva-Voce 20% Marks**

ELECTIVE PAPER With effect from 2017-2018 onwards

	SEMESTER – I	SEMESTER – II	SEMESTER – III
A DESIGNING	FASHION CONCEPTS AND DESIGNING	SOCIAL AND PSYCHOLOGICAL ASPECTS OF CLOTHING	CLOTHING CARE AND MAINTENANCE
B MARKETING	APPAREL MARKETING AND MERCHANDISING	VISUAL MERCHANDISING	ENTREPRENEURSHIP DEVELOPMENT
C INDUSTRY	FASHION COMMUNICATION	EXPORT DOCUMENTATION	TEXTILE ECONOMICS
D OTHERS	WORLD COSTUMES	FASHION RETAILING	HOME TEXTILES

Supportive papers offered for other Department students:

Subject Code	Title of the Paper	Instructional Hours/week	Internal	External	Total Marks	Total Credits
GS17	Fashion Concepts	2	12	38	50	2
GS88	Clothing Care	2	12	38	50	2
	Sustainable Fashion	2	12	38	50	2

Eligibility for Admission

A pass in B.Sc – Costume Design and Fashion, Textiles and Apparel Design, Textiles and Fashion Design, Fashion Technology, Textile and Clothing, and any B.Sc degree related to textiles or fashion.

Internship Training:

All the students have to undergo summer training for period of minimum 15 days. Final reports have to be submitted which will be evaluated.

Industrial Visit

Students have to undertake an Industrial / Institutional visit and have to submit report for evaluation.

Project work

The report is the bonafide work carried out by the candidate under the guidance of a faculty authenticated and countersigned by the HOD. This project work must be presented and defended by the candidate in the Department attended by all faculties and reviewed by external examiner. Candidate who has presented the work as “Not qualified as per CBCS” must resubmit the project again in the ensuing academic year.

Question Paper Pattern:

1. Practical Components:

The M.Sc Textiles and Apparel Design Core Practical Examination having the following Marks:

Internal Marks: 40

Test – 10 Marks

Model – 10 Marks

Record - 20 Marks

Total = 40 Marks

External Marks: 60 Marks

Experiment - 60 Marks

2. Theory Components:

The M.Sc. Textiles and Apparel Design Core and Elective theory Examination having the following Marks:

Core and Elective Papers: Maximum Marks – 100

Internal Marks: 25

Test -15 Marks; Assignment - 5 Marks; Seminar - 5 Marks

External Marks: 75

Section A - 10x1=10 Marks (Question No. 1 to 10)

Choose the correct Answer. Answer all questions. All questions carry equal marks.

Section B – 5x5 = 25 Marks (Either or type – Question No. 11 to 15)

Answer all questions. All question carry equal marks. Each answer should not exceed 2 pages.

Section C – 5x8 = 40 Marks (Either or type – Question No. 16 to 20)

Answer all questions. All Question carry equal marks. Each answer should not exceed 4 pages.

Supportive Papers: Maximum Marks – 50

Internal Marks: 12

Test - 6 Marks; Assignment - 3 Marks; Seminar - 3 Marks

External Marks: 38

Section A – 5x1=5 Marks (Question No. 1 to 5)

Choose the correct Answer. Answer all questions. All questions carry equal marks. **Section**

B – 3x3 = 9 Marks (Either or type – Question No. 6 to 8)

Answer all questions. All Question carry equal marks. Each answer should not exceed 1 page. **Section C – 4x6 = 24 Marks (Either or type – Question No. 9 to 12)**

Answer all questions. All Question carry equal marks. Each answer should not exceed 2 pages.

PAPER -I

RESEARCH METHODOLOGY AND STATISTICS

OBJECTIVES: To learn and understand some basic concepts and methodologies of research and statistical analysis.

To Organized scientific investigation to solve problem, test hypotheses, develop or invent new products.

UNIT -I

Meaning of Research - Types of Research - Significance of Research - Research Process. Defining the Research Problem - Sources, Identification, Selection and Statement, Review of related literature.

UNIT-II

Research Design - Meaning, Types of research designs, Basic Principles of experimental designs. Developing a Research Plan.

Sampling: Census and sample survey, Steps in sampling design, criteria for selecting a sampling procedure, Characteristics of a good sample design, different types of sample designs.

UNIT - III

Methods of Data collection - Observation, Questionnaire, Interview.

Data Processing- Collection, Classification, Tabulation, Graphical Representation and Data Analysis.

UNIT-IV

Research Report – Format of research report, Main body of the report, References and appendices, Style of writing, Typing the Report, Pagination, Tables and Figures, Evaluating the report.

UNIT- V

Meaning and scope of statistics, Role of Statistics in research, measures of central tendency and dispersion.

Correlation- Co-efficient of Correlation and its Interpretation, Rank Correlation, Regression equation, Application of Chi-Square test, ANOVA test. (No calculations; only theory)

TEXT BOOKS:

1. Research Methodology, C R Kothari, K K Gupta, Published by for New Age International (P)Ltd, New Delhi, (2004)
2. An Introduction to Statistical Methods, S P Gupta, Vikas Publishing House, New Delhi, (2009)

REFERENCES:

1. Introduction to Research in Education, Donald Ary, Lucy Cheser Jacobs , Wadsworth Pub Co, 8th edition (2009)
2. Research in Education, Best J N, Prentice Hall, Delhi (1979)
3. Statistical method- An introductory text, J. Medho, New age International publishers, New Delhi(2005)

PAPER II

ADVANCED TEXTILE SCIENCE

OBJECTIVES: To study about natural fiber, artificial fiber. Yarn, fabric, knitting and non-woven manufacturing.

UNIT I FIBRE SCIENCE

Textile fibres classification: Natural fibres: Classification of natural textile fibres - Essential and desirable properties of textile fibres - morphological structure, Chemical composition, properties and end uses.

Artificial fibres: History of development, Polymer, Introduction of polyester, nylon, polyolefin, viscose regenerated fibre - Concepts of regeneration of fibre - Raw material for synthetic fibres - Manufacturing sequence of Synthetic fibres.

UNIT II YARN MANUFACTURE

Pre - Cleaning of Cotton: Ginning - Mixing, types of mixing & blending, Blow room, Lap feed, Chute feed systems – Carding.

Preparatory Process: Drawing – Breaker, finisher – Comber preparatory – Sliver lap, ribbon lap, uni lap – simplex.

Yarn manufacturing: Spinning – count – twist – conversion – yarn – classification of yarn – fancy yarns – sewing threads

UNIT III FABRIC MANUFACTURE

Weaving: Looms - Sequence of material flow – Weave – Draft plan – Peg plan – Loom Types – Primary and Secondary motions – Shuttle looms – Shuttle less looms – Hand loom – Power loom – Projectile loom – Rapier loom – Airjet loom – Waterjet loom – Multiphase loom - Dobby, e-Dobby, Jacquard, e- Jacquard, application of fabrics.

UNIT IV KNITTING

Knitting - Elements of knitting machine - Technology of loop formation - Geometry of loop structure - Relation between yarn count, machine gauge and stitch density. Classification of knit-structures

Warp Knitting - Introduction - Classification of warp knitting – Netting – Types - Lacing – Classification of laces.

UNIT V NON-WOVENS

Concept of Non Woven - Application of non-woven fabrics – Fibre - Characteristics needed for the manufacture of non - woven - Manufacturing passage for the felt preparation - Web characteristics and their influence properties - Process variable and their effect on properties of non woven.

Bonding: Various system of bonding the web and their merits, chemical, thermal, adhesive, mechanical - Flocked fabric - Laminates - latest development in non-woven industry. **Others:** Braiding – Basic braid structures – Crocheting – Tatting- End uses.

REFERENCES:

1. Textile Science, E.P.G. Gohl and L.D. vilensky, 2nd Ed., CB, Publishers, New Delhi.
2. Technology of spinning, W.D. Klein , Textile Institute, Manchester.
3. Principles of weaving, Mark and Robinson, Textile institute Manchester.
4. Textiles fiber to fabric, corbman B.P, International Edn, 1983.
5. Mechanism of Weaving, N.N. Banner.J.IV ol – I & II Textile Institute.

PAPER-III APPAREL PRODUCTION TECHNOLOGY

OBJECTIVES: To study of engineering function, computerized cutting, packing and warehousing, apparel productivity in India and western world.

To Practice better methods in apparel production and planning to take informed business decision in the apparel industry.

UNIT –I

Apparel Manufacturing Industry: Nature and Scope - Types of apparel manufacture problems fundamentals of apparel production - Basic types of apparel production process – Major function of apparel manufacturing - Engineering functions, Management functions-Apparel trade association. Organization /Departments of apparel industry.

UNIT -II

Apparel Production Analysis: Introduction to Garment Cutting, Marker Planning, Efficiency of Marker Planning, Methods of Marker Planning and Marker Use, Spreading of the Fabric to form a lay, Spreading Requirements, Methods of Spreading, Fabric Packages, Objective of Cuttings, and Methods of Cuttings.

Seam & Stitch: Introduction to Seam, Stitch, Stitch Classification, Stitch Structure, Seam Formation, Joining Material, Surface Characteristics, Seam Appearance, Damages (Thermal and Mechanical), Seam Performance, Seam Degradation, Seam Failure and Seam Testings, and Seaming Machine.

UNIT – III

Apparel Finishing: Importance of Garment pressing and Finishing, Types of Garments, pressing of Garments and Specialty Garment Finishes.

Packaging and ware housing: Type of packing and packing materials, quality specification, merchandise packing and shipping packing. Intra transport, ware housing, computerized storage systems.

UNIT – IV

Production Control: Definition, objectives of production control, co ordination of production control department to the manufacturing organizations other departments. Pre production functions – product acceptance, steps from prototype to production model, order requirements.

Work study: Definition. Purpose. Techniques of work study. Procedure of work study. Work study in textile and apparel industries.

UNIT -V

Plant loading and capacity planning: Determination of machinery requirements for a new factory, calculation of labour requirements, application of line balancing techniques – Balance control.

TEXT BOOKS:

1. Apparel Manufacturing and Engineering by T.Karthick et al, Springer publications, singapore.
2. Introduction to Garment Manufacturing Technology By T Ramchandran
3. Apparel manufacturing Hand book, Jacob-Solinger,j Bobbin Blonnelm, Media Corporation – Columbia, (1988)

PRACTICAL -I INNOVATIVE CAD DESIGNING

OBJECTIVES: To illustrate the various garment design using CAD.

To Work on individual projects as well as set practical and experimental exercise.

1. Fashion illustrations by hand for various seasons and occasions (men, women and children)
2. Fashion illustrations using CAD for various seasons and occasions (men, women and children)
3. Preparing the specification sheet using CAD for industrial production.

PRACTICAL -II ADVANCED DRAPING

OBJECTIVES: To Drape is ability of fabric to full under its own weight into wavy folds of different nature.

To Develop the ability to draping quality can be manufactured and used for creating garments of different styles.

Draping and Garment construction for men, women and children's wear with Design Variations (Kimono, Raglan Sleeve Designs, Princess Shapers, Collars, Cowls, Pleats, Flounces, Ruffles).

1. Preparation of fabric for Draping
2. Draping
3. Converting or Truing the Pattern
4. Pattern Development
5. Construction of Garment
6. Fitting of final garment on dress form

PAPER- IV **ADVANCED WET PROCESSING**

OBJECTIVES: To learn about the basic knowledge of advanced wet processing in modern development of dyeing, printing.

Ability to perform advanced wet processing areas.

UNIT-I

Preparatory Processing: Introduction, Fibre – Composition - Typical Sequence of Processes - General Wet Processing Sequence for Cotton Goods - Pre-Dyeing preparatory Processing - Desizing Starch - Scouring – Bleaching – Mercerisation.

Post Dyeing preparatory Processing: Dyeing – printing – finishing - Synthetic fibres and Pretreatments - Process Sequence for Polyester / Cotton Blend.

UNIT-II

Dyes – Classification of Dyes, Banned dyes - Dyeing Machines, Influence of Physical and Chemical Structure of Fibres on Dyeability - Types of Dyeing Machine, Jet, HT, Beam Dyeing Machine, Padding Mangle, and Jigger - Recent developments in dyeing.

Printing: Styles of Printing - Methods of Printing, Block, Flat, Rotary Screen, engraved Roller, Transfer, Duplex printing, Pigment Printing, Batik, Khadi - Fixation and After Treatment - Print Paste Formulation.

UNIT-III

Finishing: Necessity for Finishing – Commercial importance of finishing - Mechanical finishes, heat setting, anti shrink, calendaring - Finishing chemicals – Resin finishing, Flame proof & flame retardancy, Soil Release Finish, Foam Finish, Water proof & Repellent - Micro encapsulation techniques in finishing process.

UNIT-IV

Bio - Technology in Textiles: Enzymes & Proteins – Sources and Applications - Application of enzymes in Textile Chemical Processing - Mechanism of enzyme reactions – Bioscouring - Bio-bleaching, Combined bio - processing, bio washing, bio polishing, Denim fading, anti odour and anti microbial finishes, bio finishing and other applications - Evaluation of enzyme treated fabrics.

UNIT – V

Effluent Treatment Plants: Detail study about characteristic of textile effluent Developments in membrane techniques in the effluent treatment - Energy conservation steps in chemical processing - Low wet pick-up techniques - Causes and remedies for water and air pollution – Bio-Technology in textile effluent treatment plants.

TEXT BOOKS:

1. Trotman,E.R., —Dyeing and Chemical Technology of Textile Fibres‘, Charles Griffin & Co. Ltd., U.K., 1984.2.
2. R.S.Bhagwat, _Wet Processing Machineries‘.Mahajan Publications, 2000

REFERENCES:

1. Shenai.V.A, “Technology of Dyeing”, Sevak publications, Mumbai, 1995.
2. Miles.L.W.C, “Textile Printing”, SDC, England, 1994, ISBN: 0901956570.
3. Manivasakam, N., “Treatment of Textile Processing Effluents”, Sakthi Publication, Coimbatore, 1995
4. DatyeK.V and Vaidya.A.A, “Chemical Processing of Synthetic Fibres and Blends”, John Wiley and Sons, New York, 1984
5. NCUTE – Programme series, Finishing of Garments and Knits, held at Ichalkaranchi, IIT,Delhi.

PAPER – V

TECHNICAL TEXTILES

OBJECTIVES: To learn about technical textiles, and its applications in different field thorough knowledge.

UNIT – I

Technical Textiles: Definition, Applications, Globalisation and Future of Technical Textiles industry. **Technical Fibres:** High – Strength and high-modulus organic fibres, High chemical and combustion - resistant organic fibres, High performance inorganic fibres, Ultra-fine and novelty fibres.

UNIT –II

Medical Textiles: Classification – fibres used, Non – Implantable, Implantable, Extra corporal devices, Health care/Hygiene Products

UNIT III

Agro Textiles – - Introduction, fibers used Types, functions and properties, Characteristics and Applications in Agro products and in its field

Build Tech: - Introduction, fibers used Types, functions and properties, Characteristics and Applications in Architecture and in Building Construction.

Geotextiles: - Introduction, fibers used Types, functions and properties, Characteristics and Applications in its field.

InduTech - Introduction, fibers used Types, functions and properties, Characteristics and Applications - Theory of dust collection

UNIT –IV

Protective Textiles: Introduction, fibres used Types, functions and properties, Characteristics and Applications Fire Protective clothing, Heat – resistant garments, Water proof materials, Ballistic resistant Vests, Biological and chemical Vests, Military Protective clothing.

Mobile Tech Textiles - Introduction, fibres used Types, functions and properties, Characteristics and Applications of Mobile Tech, applications in all kinds of road transport vehicles, rail, and aircrafts.

UNIT – V

Sports Textiles: Introduction, fibres used, Types, functions and properties, Characteristics and Applications of Sports Tech.

Smart and Intelligent Textiles – Classification - Active smart, passive smart and very smart textiles and - Phase change materials, shape memory polymers, chromic and conductive Materials and its applications in various fields.

TEXT BOOKS:

1. [Sabit Adanur](#), “Wellington Sears Handbook of Industrial Textiles” CRC Press (1995)

REFERENCES:

1. R Senthil Kumar, “Textiles for Industrial Applications” CRC Press (2013)
2. A. R. Horrocks and S. C. Anand, Hand book of Technical textiles, Wood head publishing Ltd, England (2000)

PAPER VI

TEXTILE TESTING

OBJECTIVES: To learn about the importance of textile testing and its role in quality control.
To learn the testing methods and instruments for testing of textiles.
To learn about the national and international standards for textile testing.

UNIT I

Introduction to testing - Terminology of testing - Selection of samples for testing: fibre, yarn and fabric sampling. Standard RH and temperature for testing - Measurement of Moisture regain - Conditioning oven & Shirley Moisture meter.

UNIT II

Fiber Testing: Cotton fiber length - Baer Sorter, Fineness Sheffield micronaire, Maturity, Caustic Soda swelling, Strength - Pressley bundle strength tester, Stelometer. Determination of trash and lint in cotton - Shirley trash analyzer.

Unit III

Yarn Testing: Yarn numbering system - Conversion of count from one system to another - Instruments for count determination - quadrant balance, Beesley balance. Yarn strength testing - Principles of CRT, CRL, CRE – Single yarn strength tester, Lea strength tester - Yarn twist - Direction of twist, twist multipliers, twist testers - tension type. Yarn Evenness - Classification of variation, methods of measuring evenness – Black board appearance, ASTM Standards, Uster evenness tester, Yarn faults classification, Uster Classimat - Yarn hairiness and crimp testing

UNIT IV

Fabric Testing: Fabric Particulars – Length, width, crimp, weight, cover factor. Fabric Strength - Fabric tensile strength tester, tearing strength tester, hydraulic bursting strength tester. Fabric Abrasion - Martindale abrasion tester. Fabric Pilling - I C I Pill box tester. Fabric drape – Measurement by Drape meter. Fabric Stiffness - Shirley stiffness tester. Fabric crease resistance and crease recovery - Measurement of crease recovery. Fabric permeability - Shirley air permeability tester, fabric permeability to water, Bundersmann tester.

UNIT V

Garment Testing: Seam strength, Dimensional Stability, Spirality; Accessories Testing: Zipper, Buttons, Sewing thread, Peel bond strength.

Colour Fastness of Textiles - Crocking test, perspiration test, sunlight, laundering, drycleaning, Computer Colour Matching – Colour measurement and Whiteness Index.

TEXT BOOKS:

1. “Textile Testing”, Angappan P and Gopalakrishnan R, SSM Institute of textile technology, Komara Palayam
2. “A Practical Guide to Textile Testing”, Amutha.K, Woodhead Publishing India Pvt.Ltd., New Delhi (2016)

REFERENCES:

1. Principles of Textile Testing, Booth J E, Hoybooks, London (1970)
 2. Technology of Textile Properties, Marjorie A Taylor, Forbes publications Ltd, London (1972).
 3. Fiber Science, Mishra S. P. and Kesavan B. K., SSM Institute of textile technology, KomaraPalayam.
- “Objective Evaluation of Fabrics”, Stylos G, John, Wiley & Sons USA

PRACTICAL III

TEXTILE TESTING

OBJECTIVES: To test the quality parameters of the textiles using suitable instruments.
To evaluate the quality based on the test results.
To gain practical experience about the quality of textiles.

1. Determination of Fiber length using Baer Sorter Method
2. Determination of Yarn Count and CSP
3. Determination of Single Yarn Strength
4. Determination of Twist of the given yarn
5. Determination of Stiffness of the given fabric
6. Determination of Abrasion Resistance of the given fabric
7. Determination of Crease Recovery of the given fabric
8. Determination of Drape of the given fabric
9. Determination of Pilling of the given fabric
10. Determination of Tensile Strength of the given fabric
11. Determination of Bursting Strength of the given fabric
12. Determination of Colour Fastness to Washing and Crocking of the given fabric
13. Determination of Colour Fastness to Perspiration of the given fabric
14. Determination of Dimensional Stability & Spirality of the given fabric
15. Determination of Tear Strength of the given fabric

PRACTICAL IV

ADVANCED GARMENT CONSTRUCTION

OBJECTIVES: To Study on quality standards garment defects, eco specifications, quality cost and cost customers returns.

To Develop quality standards garment defects, eco specifications, quality cost and cost customers returns.

I. MACHINE ADJUSTMENTS: Single Needle Lock Stitch Machine (SNLS) – Select fabrics of different construction and modify the stitches per inch and study the effects.

II. SPECIALIZED WORK WEAR: Design and construct uniform clothing for people like Policemen / Army / Navy / Doctors / Industry Workers.

III. INNER WEAR: Design and construct innerwear for men / women / children.

IV. NEED BASED GARMENT: Design and construct garment for Special people / Bed ridden patients.

V. GARMENT ACCESSORY MAKING: Design and Construct Gloves / Cap / Socks / Veils / Belt / Bow / Tie / Bags.

PAPER- VII

APPAREL QUALITY STANDARDS AND IMPLEMENTATION

OBJECTIVES: To Study on quality standards garment defects, eco specifications, quality cost and cost customers returns.

To Develop quality standards of garment defects, eco specifications, quality cost and cost customers returns.

UNIT I

Introduction to quality standards, importance, benefits, levels and sources of quality standards, British standards & ISO Standards for the Apparel Industry, ISO 9000 & 14000 standards, Total quality Management systems, Eco Labeling & OKO Tex 100 standards.

UNIT II

Sensitizing dye stuffs, allergic dyes, carcinogenic amines, red-listed as per Eco specifications, Eco management of textile and apparel industry, Global Scenario, Eco mark & Environment friendly textiles.

UNIT III

Eco specification & restrictions in apparels and textiles - dry cleaning using ozone. Depleting chemicals, RH values, formaldehyde contents, heavy metal contents, Pesticides and herbicides, azo dye stuffs, Nickel, Pentachlorol phenols, color fastness, brighteners, softening agents.

UNIT IV

Garment defects - cutting defects, sewing defects, assembly defects, pressing, finishing and packaging defects.

Quality costs/ Cost of Quality (CoQ) and customer returns; inspection procedures, Raw materials, in process, and final inspection quality control in final Inspection - AQL

UNIT V

Starting a quality control program, implementation of quality systems in production line, product specifications and analysis using analytical tools. Quality management through Inspection, testing and quality tools.

TEXT BOOK

1. Managing quality in apparel industry, Pradeep V Mehta, NIFT Publications (1985)
2. An Introduction to quality control for the apparel industry, Mehta P V, Marcel Dekker(1982)

REFERENCES

1. Physical testing and quality control, Vo123, No. 1/2/3 textile Institute (1993)
2. Textile Testing, John Skinkle, Brooklyn Publication, New York (1947)
3. Textile Testing, P. Angappan & Gopala Krishnan, J.K. Publications

PAPER-VIII CLOTHING APPEARANCE AND FIT

OBJECTIVES: To learn about perceptions of body appearance and its relations to clothing, Assessment of clothing appearance and fit, 3D Body scanning, Sizing systems.

To Decide decision about casual dress based on our culture and business goals.

UNIT I

Perception of body appearance and its relation to clothing – Introduction – Beauty - Facial attractiveness, body physical attractiveness, body image, modification of body appearance by dressing, fabric properties related to clothing appearance & fit.

UNIT II

Assessment of Clothing Appearance – Introduction - Assessment of fabric surface smoothness, seam appearance, crease retention, appearance retention of finished garments, and reliability of subjective assessment. Objective evaluation of fabric wrinkling, fabric pilling, seam pucker, overall garment appearance.

UNIT III

Assessment of Clothing Fit - Definition of fit - Influences on clothing fit, testing methods for dimensional fit, subject rating scales, subjective fitting guide, Objective evaluation of clothing fit - Moire's optics, algebraic evaluation of clothing fit, clothing waveform, pressure valuation of clothing fit, 3D modelling of pressure fit. Pattern alteration for fit, prediction of garment patterns from body measurements.

UNIT IV

3-d Body Scanning – Introduction - global development of body scanners, principles and operations of body scanning technologies, bench marking. Challenges of 3D body scanning. Garment drape - measurement of fabric drape, empirical prediction of fabric drape, dynamic and seamed fabric drape, modelling fabric and garment drape, drape models in commercial CAD and internet systems.

UNIT V

Human Anthropometrics and Sizing Systems - Terms and definitions - Traditional anthropometry, Historical development of sizing system, Latest national size survey using 3-D body scanner, international sizing, principles of sizing systems. Three-dimensional (3-D) apparel design systems for pattern generation and garment fit, virtual fitting on the internet.

TEXT BOOK

1. Clothing appearance and fit: science and technology, J. Fan, W. Yu and L. Hunter.
2. Form and Fit, Jay Calderin.

REFERENCES

1. The complete photo guide to perfect fitting, Sarah Veblen.
2. Digital Human Modelling, Vincent G Duffy.
3. Anthropometry, Apparel Sizing and Design, Deepti Gupta, Norsaadah Zakaria.

PAPER-IX ECO TEXTILES AND SUSTAINABILITY

OBJECTIVES: To provide students an insightful and holistic understanding of the sustainability in the fashion and textile industry.

To Develop sustainable solutions in every steps: from raw material, product manufacturing, retailing, usage till disposal.

UNIT I

Eco-Textiles - Introduction & needs for eco-textiles & its importance. Ecology - Production ecology, Human ecology & Disposal ecology. Structure and stability of the ecosystem. German ban on toxic dyes, chemicals and auxiliaries. Eco-Auditing and Eco-labelling, Eco mark on textiles.

UNIT II

Natural fibres – Importance of natural fibres in textiles - Major fibres used in textiles - cotton, jute, linen and silk. Minor fibres used in textiles - sisal, pineapple, coir, nettle. Protein - soya, spider silk etc., Extraction or preparation methods of natural fibre-retting, & its methods, decortications by hand and machine. Recent findings of natural fibres in textile industry.

UNIT III

Natural Dyes - History, importance. Types of natural dyes-plant, animals and mineral -Madder, indigo, catechu, myrobalan, pomegranate, lac, alum. Extraction methods & application methods-

pre, meta and post mordanting. Characteristics of Natural dyed fabrics. Commercially available natural dyes. Recent developments in natural dyes.

UNIT IV

Natural Finishes - Need for natural finishes. Traditional plants & herbs used in natural finishing. Various plant Components, extraction methods and application. Recent natural finishes on textiles for various applications.

UNIT V

Eco - Textiles Testing, Standards and Sustainability - Processes adopted for eco-friendliness: Enzyme technology, Foam technology, Super critical carbon-di-oxide dyeing & Plasma technology- Glow-discharge method, Corona discharge method & Dielectric barrier discharge method. Toxicology of textile dyes. Eco testing instruments-working of Gas Chromatography, Mass Spectrometry, High Performance Liquid Chromatography, Atomic Absorption Spectrometry/Atomic Emission Spectrometry and Plasma Emission Spectrometry. Eco Standards for Textile.

TEXT BOOK

- 1.Keith Slater, "Environmental Impact of Textiles", Wood head Pub. Ltd, Cambridge, 2003. ISBN:1-85573-541-5
- 2.Christie R.M., "Environmental Aspects of Textile Dyeing", Wood head Pub. Ltd, Cambridge, 2007. ISBN:978-1-84569-115-8
- 3.Miraftab M. and Horrocks R., "Eco Textiles", Wood head Pub. Ltd, Cambridge, 2007. ISBN-13: 9781-84569-214-8

REFERENCES:

1. Eco-Textiles'98, Bolton Institute, Bolton, 1998.
2. Eco-Textiles, Special Report, The Bombay Textile Research Association, Mumbai, February, 1996.
3. Eco Friendly Textiles: Challenges to the Textile Industry, Textiles Committee, Mumbai, 1996.
4. Oeko-tex Standard 100, International Association for Research and Testing in the field of Textile Ecology(Oeko-tex), Zurich, Switzerland, January, 1997.
4. Eco-Friendly Textiles, SITRA Focus, Vol.14, No.2, July 1996.
- 5.BIO-textiles as medical implants, M W King, B S Gupta, R Guidoin
- 6.The Applications of Biotextiles in Tissue Engineering Ruwan Sumanasinghe1 and Martin W. King1
- 7.Blackburn R.S., —Biodegradable and Sustainable Fibres, Wood head Pub. Ltd, Cambridge, 2005. ISBN:0-84933-484-5

PRACTICAL -V
SURFACE ENRICHMENT ON TEXTILES

OBJECTIVES: To design products for printing, painting, dyeing, texture, smocking, ribbon work etc.

1. Printing – a) Screen, Block, b) Spray, Stencil
2. Fabric Painting
3. Dyeing - resist & discharge - a) Tie & dye b) batik.
4. Texture printing by combining any three different types of textures.
5. Smocking with different techniques
6. Designing and making of any three traditional embroideries
7. Ribbon work on textiles
7. Collection of samples for traditional Textiles – Bandhani, Patola, Ikat, Pocchampalli.
8. Adaptation of traditional designs from craft items and modifying as per modern trends.
9. Collage work for textile designs

PRACTICAL VI
PORTFOLIO PRESENTATION

OBJECTIVES: To develop portfolio with sketches, Concept, Mood Boards.

Portfolio Presentation for any 5 Theme with the following components

1. Designer profile
2. Customer profile
3. Theme board
4. Inspiration board
5. Mood board
6. Colour board
7. Fabric board
8. Flat presentation
9. Design development board
10. Accessory board
11. Photographic board

Practical -VII **CAD IN TEXTILE DESIGNING**

OBJECTIVES: To learn about doobby, Jac draw, Jac weave, print tex, 3D studios softwares. To Work on individual projects as well as set practical and experimental exercise.

1. Pattern layout and marker efficiency using specification sheet
2. Designing fabrics for
Plain Weave, Rib,
Twill Weave, Satin,
Sateen, Dobby and
Jacquard Weave.

ELECTIVE I: SEMESTER – I **FASHION CONCEPTS AND DESIGNING**

UNIT - I

Elements Of Design : - Basic Elements - Designing of costumes using elements of design - line, dot, curves, texture, shine, rough, silhouettes, color - Define Application of Principles: Balance, rhythm, harmony, repetition, grading, unity, symmetry.

UNIT - II

Colour Theory:- Color Theory: Color wheel - primary, secondary, transparency - Techniques of color mixing - Color Contrast and Attributes: interaction, harmony, psychology, mood, culture and expression - Composition: Color, space, movement, balance, asymmetry, rhythm, shapes, proportion - Aspects / temperature of color-warm cool, hot, cold, dark, pale and bright - Application of Principles in garment Designing for latest trends - Dimensions of color- hue, Intensity, value, chroma - Basic color schemes- achromatic, analogues, monochromatic, complimentary, and neutral - Rendering techniques.

UNIT - III

Textures And Design: - Personal appearance and fit - Textures-types of textures - Textural effects, using textures in designs – Color and texture of the fabric. Design feature, Personal appearance and fit for different figure types.

UNIT – IV

An overview on Indian and global Fashion designers

Understanding Fashion designer – types – classicist, idealist, influenced, realist and thinking poet.

Indian Fashion designers – Haute couture – Manish Malhotra, Wendell Rodricks, Abu Jani and Sandeep Khosla, Tarun Tahiliani, JJ Valaya, Rina Dhaka, Manish Arora, Rohit Bal, Ritu Beri, Ritu Kumar, Omi Gurung, Shilpa Reddy, Vikram Phadnis, Neeta Lulla, Erum Ali, Payal Jain.

Global Fashion designers - France, Italy, America, Britain, Fareast- Contributions of well known designers from France-Agnes, Sophie Albou Italy- Pierre Cardin, Roberto Cavalli America-Adams Adrian, Joseph Abboud. Britain -Basso & Brooke and Fareast Countries - Sandy Powell, Valentino Garavani.

UNIT – V

To develop wardrobe collection for different seasons and design costumes for different themes.

REFERENCES:

1. “Fashion Design” By Janice G.Ellinwood.
2. “Fashion Rendering with Color” By Bina Abling.
3. ‘Fashion Color Harmony’ By Hibeaki, Publisher Rockford.
4. “The Art of Costume and Personal Appearance” By Grace Margaret Morton.
5. Individuality in Clothing Selection and Personal Appearance Hardcover – Import, 11 Jun 1999 by Suzanne Marshall, Hazel Jackson, M. Sue Stanley Ph.D., Mary Kefgen, Phyllis Touchie-Specht.
6. Fashion –From concept to consumer – Gini Stephens Frings, 6th edition, prentice Hall (1999).

APPAREL MARKETING AND MERCHANDISING

OBJECTIVES: To learn about types of merchandiser, export association, sampling, Inspections.

To Develop textiles /apparel products for specific target markets to meet expectations for cost and quality.

UNIT I

Marketing - Marketing Concepts, Marketing Management, Marketing System, Marketing environment, Marketing Organisation, Strategic Marketing Process, Competitive marketing strategy - Marketing of Apparel and Fashion Products.

UNIT II

Buying Behaviour - Factors influencing buying behaviour - Buying process segmentation: Market segmentation - Segmentation Variables - Target Marketing market measurement- Market Potential - Estimation - Demand Forecasting - Methods of forecasting.

UNIT III

Marketing Mix - Product, Price - Promotion and Distribution - Advertising and Sales Promotion – Public Relations - Case study.

Product Life Cycle - Life cycle of product - Marketing strategy for various stages of life cycle - New product development - Case study.

Marketing Research: Purpose, Procedure and Applications - Theories in Market Research – Trickle - up, Trickle – down and other theories - Case Study.

UNIT IV

Merchandising - Merchandise – definition - Apparel and Fashion Merchandising - Role of Merchandiser – Types of Merchandises - Export House, Manufacturer, Buying House, Buying Agency and Comparison between them - Selection of Buyers and Buying Agencies - Merchandising Correspondence - Orders, handling of orders and dealing with manufacturers - Advertising - Trade fair participation and other methods of sales promotion in merchandising.

UNIT V

Garment Costing – Introduction - Terms and purposes, Cost terminology, direct and indirect costs, Cost behavior patterns: variable costs & fixed costs, total costs and unit costs - pricing decisions and cost management, target costs. Process optimization, quality improvement and cost reduction techniques — Methodology for spinning, weaving, knitting, chemical processing, garment making - Case Studies. Export Cost - Basic T-shirt, Ladies night wear, Pyjama, striped T-shirts, etc.

TEXT BOOK:

1. Philip Kotler, ‘Marketing Management’, Printice Hall Inc 1996

REFERENCES

1. Taarno, Guerreiro & Judelle “Inside the fashion business” 1995
2. “Clothing Retailing in Europe”, Corporate intelligence on retailing, 1997
3. “The Textile Industry”, Winning strategies for the new millennium volume 2, Textile Institute., 1999.
4. Evelyn C. Moose, Wey II. “Path For Merchandising” 1999. 6. Jarnow.J & Dickerson.K.G, “Inside the Fashion Business”, Prentice Hall, 1997.

FASHION COMMUNICATION

UNIT – I

Fashion and the communication process: What is Fashion? The Theories of fashion adoption need for promotion of fashion, need for the communication process, communication through different media.

UNIT –II

Written Communication: Fashion writing, creative writing reporting features, editing and printing techniques, image management and advertising, public relations, press laws and media ethics.

UNIT – III

Visual Communication: Fashion photography, window display and multimedia – audio, still images, animation, video footage and interactivity.

UNIT – IV

Communication: Communication in practice ,Scripting shows, conducting interviews, reporting events, fashion critics, planning PR campaigns, formulating case studies, designing catalogues and brochures. Visualisation of décor and ambience, preparing short films/audiovisuals, choreography of fashion event.

UNIT – V

Designing of own fashion magazines/ Designing of own fashion brochures by the students/designing a look book/designing a line planning.

REFERENCES:

1. Farbey, A.D.: How to Produce Successful Advertising, Kogan Page India Pvt. Ltd.
2. Jethwaney, J.N. (1999): Advertising, Phoenix Publishing House Pvt. Ltd.
3. Roundy, N. and Mair, D. (1985): Strategies for Technical Communication, Little Brown and Company, Boston, Toronto.

WORLD COSTUMES

UNIT I

America -Inuits and Aleuts, American Indians of the southwest, American Indians of Plains and northwest, Amish costumes, Guatemala, Mexico, Colombia, Peru and Bolivia, Chile and Brazil.

UNIT II

European countries - Egypt, Greece, Roman, Norway, Sweden, Denmark, Scotland, Austria, Switzerland, Hungary, Poland, Ukraine

UNIT III

Far Eastern Countries - Mongolia, China, Japan, North and South Korea, Sri Lanka, Pakistan, Burma, Thailand, Philippines, Africa- Costumes of North, East, West and South, Middle East Countries Turkey and Iran, Costumes of Arab Peninsula.

UNIT IV

Study of dyed and printed textiles of india – Bhandhini, Patola, Ikkat, Kalamkari. Study of women textiles – Banarasi muslin, Banarasi, Silk sarees of Kanchipuram, Kashmir shawls.

UNIT V

Traditional Costumes of India

South India - Tamil Nadu, Kerala, Andhra Pradesh, Karnataka, West India - Maharashtra, Gujarat, Madhyapradesh, East India - Orrisa, Bihar, Mizoram, Tirupura, Nagaland, West Beengal, , Assam, Sikkim.

North India - Rajasthan, Haryana, Punjab, Himachal Pradesh, Uttarpradesh, Jammu and Kashmir.

REFERENCES:

1. Costumes of Indian and Pakistan, Das S N, D B TaraporevaIa Sons & Co, Bombay (1958)
2. Historic Costume, Chas A, 'Bernard and Co, illinois (1961)
3. Costume through the Ages, Laver, JamesSimon and Schuster, New York (1968).
4. Costumes throughout the Ages, Eoan C C, J B Limancott
5. The History of Costume; Kemper, Rachel H
6. Indian Costume –G.H Ghosrye, Popular books Pvt Ltd
7. The costumes and textiles and India – Jamila Brij Bhushan, D B Taraporevala Sons & Co, Bombay (1958)
8. Costumes of India –Dorris Flyn, Oxford &IBH Publishing Co ,Delhi (1971).

ELECTIVE II: SEMESTER – II

SOCIAL AND PSYCHOLOGICAL ASPECTS OF CLOTHING

UNIT – I

Origin of Clothing - Theories of clothing – theory of modesty, immodesty, protections, adornment, combined need theory, other theories in fashion - Relation between clothing and other disciplines - (a) Physical Health- (b) Mental Health - Clothing and first impressions

UNIT – II

Psycho- physiological factors of clothing comfort - Psychophysics and clothing comfort - Wear trial techniques - Psychological aspects of aesthetic comfort.

UNIT – III

Thermal transmission – Introduction - Thermo- regulations in human body - Thermal distress - Thermoregulation through clothing system - Thermal comfort of clothing - Transient heat flow and warm- cool touch of fabrics - Measurement of thermal transmission characteristics - Parameters for expressing thermal characteristics - Thermal transmission characteristics of fabrics

UNIT - IV

Relation between clothing and the wearer - Personality and self concept - Motivation in clothing choices - Individual values, interests and attitudes related to clothing - Behavior and clothing choices, practices and effect and clothing on the individual - Clothing and Society - Clothing and social behavior - Clothing influenced by religion and culture - Clothes and conformity - Clothes and occupation - Uniforms in schools and college - Clothes and colour and impact of colour.

UNIT – V

Garment fit and comfort - Introduction - Body dimensions and pattern - Garment fit and comfort relationship - Factors related to garment fit - Measurement of garment fit

REFERENCES :

1. Avis, M. Dry (1961) : The Psychology of Jung, Methuen & Co., London.
2. Horn, Marilyu J. (1968) : The Second Skin, Houghton Mifflin Co., USA.
3. Flugel, J.C. (1950) : The psycho – analytical study of the family, The Hograth Press & The Institute of Psycho Analysis, London.
4. Richard Wollhein (1985) : Frennd, Fontana Press, London.

TEXT BOOK:

1. Apurba Das and R. Alagirusamy (2010): Science in Clothing Comfort.

VISUAL MERCHANDISING

OBJECTIVES: To learn about merchandising history and methods, including visual presentation, lighting techniques and color theory.

UNIT I

Introduction – Why do we display?, Color and Texture, Line and Composition light and Lighting.

UNIT II

Visual merchandising and planning – Visual Merchandising and Planning, Setting up a display shop, Store planning and design, Visual merchandising and the changing face of Retail.

UNIT – III

Display and Display Settings - Types of display, one – item, line of goods, related merchandise, assortment, promotional vs. institutional; Type of display settings - Realistic, environmental, semi-realistic, fantasy, abstract. Store and window settings - Exterior of the store, signs, marquees, outdoor lightning, banners, planters, awning; Window in store front - The angled front, the arcade front, the corner, display, closed back, open-back, island, shadow boxes, elevated, deep, tail. Music & Lighting - Selection of music. Advantages & disadvantages of using music, understanding lighting patterns. Role of lighting in visual merchandising, Colours and types of lightings.

UNIT IV

Mannequin - Types of mannequins - realistic, semi realistic, abstract, semi abstract, headless; dressing up of mannequin. Alternatives to the mannequin, Dressing the three dimensional form.
Fixtures: Fixtures, Visual merchandising dressing fixtures, Modular fixtures and system in store planning. Furniture as Props

UNIT V

Visual Merchandising and Display Technique – Attention – Getting devices, Familiar symbols, Mashing and Proscenia sale ideas, Fashion accessories, Graphics and signage, Fashion shows, Career opportunities in Visual merchandising.

TEXT BOOKS:

1. Gini Stephen Frings, “Fashion Concept to Consumer” – Prentice Hall, New Jersey, 2004.
2. Diamond, “Contemporary visual merchandising and environmental design”, fourth edition, Prentice Hall, 2006.

REFERENCES

1. Martin M. Pegler, “Visual Merchandising and Display”, fifth edition, Berg Publishers, UK, 2006.
2. Laine stone, Jean Samples, “Fashion Merchandising – An Introduction”, Mc Graw Hill Book Co, 2001.
3. Diamond, J, “Fashion Retailing - A Multi – Channel Approach”, Second Edition, Prentice Hall, New Jersey, 2000.
4. Fashion Merchandising & Information, Johnwiley & Sons, PRISCO, Auctralia.Ltd (1986)

5. Fashion Merchandising, Mery.D. Troxell , Elaini StoreGregg division, Mc Grow-Hill (1981)
6. Fashion Merchandising Introduction Evelyn Grace,–Prentice-Hall (1978)
7. Visual Merchandising, Hearst books, ST publications incorporated (1997)
8. The business of fashion inside outside Kitty Dickerson

EXPORT DOCUMENTATION

OBJECTIVES: To the study of process approaches to the entrepreneurship.

Entrepreneurship help / support and affiliate institutions / organizations in carrying out training and other entrepreneurship development related activities.

UNIT- I Introduction to international trade, Global scene, Prospects for Indian Apparel in overseas market, Globalisation, GATT and WTO. Meaning and Definition of Export – Classification – Strategy and Preparation for Export Marketing – Export Marketing

Organizations – Registration Formalities – IEC – RCMC – Export Licensing – Selection of Export Product – Identification of Markets – Methods of Exporting – Pricing Quotations.

UNIT- II Foreign trade document -need - types of documents related to goods, invoice to goods, invoice packing note and list - certificate relating to shipments - shipping bill- cart ticket - certificate of measurement - Bill of lading - airway bill - documents related to payment -letter of credit - bill of exchange - bank certificate for payment - document related to inspection.

UNIT- III Steps in Export Procedure – Export Contract – Forward Cover – Export Finance – Institutional framework for Export Finance – Excise Clearance – Pre-shipment Inspection – Methods of Pre-shipment Inspection – Marine Insurance – Role of Clearing and Forwarding Agents – Shipping and Customs Formalities – Customs EDI System – Negotiation of Documents – Realisation of Exports Proceeds. Recent export policies of the government

UNIT –IV

Foreign Trade Policy – Highlights – Special Focus Initiatives – Duty Drawback – Deemed Exports – ASIDE – MAI & MDA – Star Export Houses – Town of Export Excellence – EPCG Scheme – Incentives for Exporters. Preferential trade agreements-GSP, IJCEPA, IKCEPA. Export Promotion Councils-Commodity Boards – FIEO – IIFT – EOUs – SEZs – ITPO – ECGC – EXIM Bank.

UNIT- V

Aligned Documentation System – Commercial Invoice – Shipping Bill – Certificate of Origin – Consular Invoice – Mate’s Receipt – Bill of Lading – GR Form – Types of Marine Insurance Policies. Customs - meaning, definition, types, exercise and customs, clearance of export cargo shipment of goods and port procedures - claiming duty draw backs and other benefits

REFERENCES:

1. Handbook of Import-Export Procedures – Ministry of Commerce, -, Government of India, New Delhi
2. Export: What, Where and How, Paras Ram, Anupam Publishers, Delhi
3. Exports : Do it Yourself, Mahajan M.I., Snow White Publications, New Delhi

4. Export Marketing, TAS Balagopal , Himalaya Publishing House
5. Export Documentation and Procedures, , Nabhi Publications, New Delhi
6. International Marketing Management, R.L. Varshney, Sultan Chand
7. International Marketing, Terpstra, Holt Saunders
8. International Business, Concept, Environment and Strategy, Sharan V
9. Export Management, D.C. Kapoor, Vikas Publishing House
10. Govt. of India: Hand book of import and export procedures Bose. A, Streamline your export paper work, International trade form Oct - Dec 1965

FASHION RETAILING

OBJECTIVES: To learn about merchandising history and methods, including visual presentation, lighting techniques and color theory.

Unit –I

Retail Merchandising - The Marketing Channel, Retail organization structures, retail merchandising , Retailing Formats - Department stores specialty stores , hard – to – classify stores, Depth and breadth, discounting , Other Retailing Formats – non store retailers.

Unit –II

Retail Locations – Unplanned shopping districts, planned shopping centers, the mix of stores in a shopping center. Retail growth and expansion – Retail ownership. International Retailing, Retailing Advertising.

Unit –III

Brands and private labels - Branded Merchandising, Licensing, Private Labels, and Private Labels as Brands. Merchandise Resources – Manufacturers, Merchant Wholesale – Distributors. Trade Shows.

Unit –IV

The financial aspects of Merchandising – Measures of Productivity – Productivity , turnover, Stock - to – sales Ratio , sales per Square foot, Space Management. Retail pricing - Mark-up. Markdowns, Residue merchandise, maintain Mark-up. Tactical price changes, Managing Markdowns, Promotional Pricing, Deceptive pricing, Resale price Maintenance.

Unit –V

Store Layout and Merchandise Presentation – Store Planning and Design, Visual Merchandising, Store Layout, Fixtures, Merchandise Presentation, signs.

REFERENCES

1. Merchandise Buying and Management, John Donnellan Fairchild Publications , New York 1996
2. Fashion Retailing: A Multi-Channel Approach ,Ellen Diamond, Prentice Hall 2nd Edition, 2005

ELECTIVE III: SEMESTER III CLOTHING CARE AND MAINTENANCE

UNIT – I

Water- types- soft water-hard water- purification of water. Soaps, detergents – types – manufacturing – properties.

UNIT-II

Laundering – objects – methods - laundering of white - coloured, cotton, silk, wool, synthetic fabrics, lace materials, carpets. Clothing storing- mending - darning- seasonal care.

UNIT-III

Dry cleaning - chemicals used - sequence - method - commercial dry cleaning. Washing machines – types - working principles.

UNIT-IV

Ironing and pressing - hot air, steam, permanent pressing, thumble drier –hydro extractor - working principle.

UNIT-V

Stain - classification – removal of known and unknown stains - rules in removing fresh and old stains. Stain removers - grease solvents – absorbents - washing soda - borax.

Care labels – importance- symbols – uses. Packing – importance – care of import & export packing.

REFERENCES

1. Fabric care- Noemia. D'Souza.
2. Fundamentals of textiles and their care- Susheela.D
3. House hold textiles and laundry work- Durga.D
4. Textiles fiber to fabric- Bernard.P.Carbman, MC Graw gill international Edition.

ENTREPRENEURSHIP DEVELOPMENT

OBJECTIVES: To study about the process and approaches to the entrepreneurship. Entrepreneurship help / support and affiliate institutions / organizations in carrying out training and other entrepreneurship development related activities.

UNIT-I

Definition of Entrepreneur – Functions of entrepreneurship - Types and problems. Recent trends and development in entrepreneurship. Characteristics of an entrepreneur, Entrepreneurship development, Process of Entrepreneurship development.

UNIT-II

Project identification - Classification. Project formulation - Feasibility analysis and report. Selection. Project appraisal – Concepts and Methods - Cash flows, Payback period, ROI Methods of minimizing risk.

UNIT-III

Steps for starting a small scale enterprise. Preparation of Project report and Business plan. Procedure and formalities for registration, Types of organization – Sole proprietorship. Partnership. Joint stock company, Selection of types of Organization, Factors influencing the choice of organization.

UNIT-IV

Factors influencing entrepreneurship, Institutional finance to entrepreneurs - Commercial Banks. Other financial Institutions - IDBI, IFCI, ICICI, IRBI, LIC, UTI, SIDC, SIDBI, EXIM Bank, Role of Government in entrepreneurship development.

UNIT-V

Institutional support to entrepreneurs - Need for support - NSIC, SIDO, SSIDC, SISI, SFC, DIC, TCO, TIIC, Kadi and Village Industries Commission, Industrial Estates. Issues of prospects of entrepreneurship in India, Global entrepreneurship, Trends in entrepreneurial enterprises-TQM, WTO, Green products, Research and Innovating etc., Entrepreneurship in Textile Industry, Textile and MSME.

TEXT BOOKS:

1. Entrepreneurship development, C.B. Gupta & N.P. Srinivasan, Sultan Chand & Sons (1992)
2. Entrepreneurship development, S. Khanka, S.Chand limited (2006)

REFERENCES:

1. Projects -Planning, Analysis, Selection, Implementation & Review – Prasanna Chandra
Published by Tata McGraw-Hill education private limited, 7th edition (2009)

TEXTILE ECONOMICS

UNIT I

Origin, Growth and Development of Indian Textile Industry - Cotton, Wool, Silk – Rayon, nylon, polyester, acrylic, Man-Made Textiles, Readymade garments

UNIT II

Five year plans for the textile Industry - Recent plan and previous 5 Five year plans- Organisations related to the Textile and clothing Industry - Concept of GATT, MFA, WTO, AIC, Globalization

UNIT III

Technological developments in Fibre Industry, Significance and uses – Technological developments in Yam Industry, significance and uses.

UNIT – IV

Technological developments in Fabric Industry -woven, significance and uses - Technological developments in Fabric Industry - knitting, significance and uses - Technological developments in Garment Industry, significance and uses

UNIT V

Technological developments in Printing and Dyeing Industry, significance and use – Technological developments in Processing Industry, significance and uses.

REFERENCES:

1. Textiles - Fiber to fabric, Bernard P Corbman, 6th edition, Mc Graw Hill Book Co, Singapore
2. Fabric forming systems, Peter Schwartz, Trevor Rhodes, Mansour Mohammed, Noyes' Publications, New Jersey, USA(1996) .
3. Fabric Care, Normia D'Souza, New Age International Pvt Ltd, New Delhi Journals:
4. Indian Textile Journal- Business Press P. Ltd, Maker Tower B-18 floor, Cuffparade, Mumbai - 400009 .
5. Indian Cotton Mills Federation - ICM - Textile Centre 34 P-d, Mello Road, Mumbai 4009
6. Indian Silk, Central Silk Board, Ministry of Textiles, M G Road, Bangalore - 560 001.
7. Man-made Textiles in India - SASMIRA, Sasmira marg, Worli, Mumbai
8. Textile Magazine, Magazine House, 710 Mount Road, Chennai
9. Textile trends, East land Publications Pvt Ltd, 44 Chittranjan Avenue, Calcutta-12.
10. Handloom Export Promotion Council 622 Mount Road Chennai
11. Garments India, Garment India Press, 53 South West Road, Chennai-17
12. Indian Jute Bulletin-Indian Regional office, 4K S Pay road, Calcutta -1 .
13. Hosiery and Textile Journal-International Magazine Home-164 Modi Street, Fort, Mumbai
14. Textile Highlights, 396, Veerasavarkar marg, Poabhadevi, Mumbai-25
15. Clothing News Bulletin, Clothing Manufacturers Association of India House, Mumbai-26
16. The Textile Institute and Industry, 10 Back Brance. Street, Manchester

HOME TEXTILES

OBJECTIVES: To learn about Home Textiles in India
To learn about types of Home Textiles

UNIT – I

Home Textile in India: Introduction, history, exports - Trends in home textile industry – Domestic and Global market for home textiles, Major production centers in India.

Home Textile Products - Role of fabric in interior furnishing – Properties required – Factors affecting that selection of fabrics - Different fibres used, Standard sizes, Fabric requirement and cost calculations.

UNIT – II

Seating: Structures, lay out, Range & size – Material used – Manufacturing – Double cloth – loop pile – cut pile – cushion foam – multi layer sheets – seat covers – types & materials.

Bed Linens - Definitions – design & size - Bed spread designs – chenille and organic bed spreads – dimensions – Bed sheets – types – fitted sheets – manufacturing process – bed skirts – types – mattress – domestic and international market for bed linens – pillows - Quilt: types –

Machine, Hand quilting – Knotted and tied – Trapunto – Shadow trapunto – export and import contributions – process sequence for bed linen – scope in global market.

UNIT – III

Windows: Basic sizes, Lay outs, Materials – Voiles, Nets - Sun filters - Semi sheers - Reflective textiles - Draperies – Types – Valances – Types – Shades – Types – Swags — Headings – Types – Distribution Channels - Curtains - Introduction - Types of curtains – Characteristics of curtain fabrics.

Wall Coverings: Requirements, benefits, types - carpet as wall covering - Materials and manufacturing of fabrics – Application, end use – colour concepts.

UNIT - IV

Table Linens - Place mats and table cloths - Definition – Placemats – Varieties of placemats – Making process flow – Instruction – tips & warnings – Reversible placemats – Stone placemats – table cloths – Types, material & manufacturing.

Kitchen Linens - Introduction - Material used – Kitchen products – Oven mitten – Pot holder – Apron – Napkins – Doilies – Kitchen mats – Dining table cloth – tea cozy – kitchen curtain –

Table runner – Kitchen rugs – Types of stitches and seams used.

UNIT – V

Floor Coverings: Definitions – Fibre used – Types of carpets – Comparison of carpets – broad loom carpets — Benefits of carpets and rugs - Carpet cushions – Manufacturing Process – Rugs – Types of rugs – Knots and oriental rugs – Embroidered rugs – Natural leather rugs – Advances - Earth carpets – Thinking carpets – Magic carpets – Lawn carpets.

Bath Linen: Categories – bath robe – Sizes & design elements - Terry towels – Classification – Ranges – Fibre used – Standard sizes – Manufacturing flow chart – Construction of terry towels – Market share - Production centers.

TEXT BOOKS:

T. Karthick et.al “Home Textiles” Astral International Pvt Ltd, New Delhi.

REFERENCES

1. Ghosh, Dr. Ashis Kumar “Traditional Knowledge of Household” Daya Publishing House
2. Kapoor, Hemant and Aashima Arora “Home Textiles” Astral International Pvt Ltd, New Delhi

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SUPPORTIVE 1
FASHION CONCEPTS

UNIT -1

Definition –Fashion, style, fad and classic. Color chart-Prang colour chart, Value chart and Intensity chart

UNIT-2

Illustrate garment designs for the Elements of Design –Line, Colour, Texture, Shape or Form and Size

UNIT-3

Illustrate garment designs for the Principles of Design - Balance in dress, Harmony in dress, Emphasis in dress, Proportion in dress and Rhythm in dress

UNIT-4

Illustrate the Colour Harmony in Dress Design -Monochromatic colour harmony, Analogous colour harmony, Complimentary colour harmony, Double Complimentary colour harmony, Split Complimentary colour harmony and Triad colour harmony

UNIT-5

Application of colour and Principles of design in dress - Harmony through colour, Emphasis through colour, Proportion through colour, Rhythm through colour and Balance through colour.

REFERENCE

1. Elements of Fashion and Apparel Design By, G. J. Sumathi, New Age International, 2007
2. Art in everyday life by-harriet Goldstein,2007, Macmillan,
3. Fashion design, the art of style by Jen Jones, Capstone, 2007

SUPPORTIVE II CLOTHING CARE

UNIT I

Textile Fibres: Introduction, Classification, General care of different fibres – Cotton, linen, wool, silk, nylon, polyester, acrylics, rayon, acetate.

UNIT II

Wardrobe - Definition and wardrobe planning. **Clothing Selection.** Factors to be considered for clothing selection.

UNIT III

Laundering: Water, detergents, laundry equipments – Household and commercial, laundry procedure for various fibre fabrics – Cotton and linen, woollens, silk and synthetics.

Dry Cleaning: Definition, dry-cleaning operations and materials.

UNIT IV

Stain Removal: Identification and classification of stains, general procedures of stain removal, principles of stain removal, classification of stain removers.

UNIT V

Care Labels: Various systems of care labelling, washing, bleaching, drying, ironing, and dry-cleaning instructions. Placement of labels on garments.

REFERENCES:

1. **Clothing Care Manual**, Isabel Makwara Mupfumira, Nyaradzo Jinga, Strategic Book Publishing Rights Agency, 2014
2. **Fabric Care**, D. Noemia Souza, New Age International, 1998

SUPPORTIVE III

SUSTAINABLE FASHION

UNIT I

Introduction: Fashion, Sustainability, Pillars of sustainability, Sustainable fashion – meaning and importance.

UNIT II

Clothing lifecycle, clothing care, fast and slow fashion, clothes repair and re-use.

UNIT III

Ethical fashion: concepts of recycling and upcycling. Carbon footprint, water footprint and energy consumption of fashion industry.

UNIT IV

Eco-textiles, green consumerism and waste reduction, consumer responsibility towards sustainable fashion.

UNIT V

Sustainable fashion designers, sustainable fashion brands, Eco-friendly fashion labels.

References

1. Black, S. (2013). *Sustainable Fashion Handbook*, London, Thames and Hudson.
2. Brown, S. (2013). *Re-Fashioned- Cutting Edge Clothing from Upcycled Materials*, London, Lawrence King Publishing.
3. Fletcher, K. (2012). *Fashion and Sustainability- Design for Change*, London, Lawrence King Publishing.
4. Yamase, K. (2012). *Cut up Couture- Edgy Upcycled Garments to Sew*, U.S.A. Interweave.
5. Fletcher, K. (2008). *Sustainable Fashion and Textiles- A Design Journey*, London, Lawrence King Publishing.
6. Phillips, J. (2013). *Sustainable Luxe- A Guide to Feel Good Fashion*, London, Create Space Publishing.