

# BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI – 620 024.

# M.Sc. Fashion Technology & Costume Designing - Course Structure under CBCS (applicable to the candidates admitted from the academic year 2008-2009 onwards)

Sem	Course	Course Title	Ins. Hrs/	Credit		Marks		Total
ester	Course	Course Title	Week		1113	Int.	Extn.	1 Otal
I	Core Course – I (CC)	Technical Textile	6	5	3	25	75	100
	Core Course – II (CC)	Apparel Production Technology	6	5	3	25	75	100
	Core Course – III (CC)	Apparel Standards and Quality control	6	5	3	25	75	100
	Core Course – IV (CC)	Advanced Fabric Preparation	6	5	3	25	75	100
	Core Course – V (CC)	Advanced Fabric Preparation - Practicals	6	4	3	40	60	100
		Total	30	24				500
II	Core Course – VI (CC)	Advanced Fashion Designing	6	5	3	25	75	100
	Core Course – VII (CC)	Advanced Fashion Designing - Practicals	6	4	3	40	60	100
	Core Course – VIII (CC)	Apparel Merchandising	6	4	3	25	75	100
	Core Course – IX (CC)	Entrepreneurship Development	6	5	3	25	75	100
	Elective – I	Pattern Making and Clothing Construction	6	4	3	25	75	100
		Total	30	22				500
III	Core Course – X (CC)	Computer Application in Apparel Industry	6	5	3	25	75	100
	Core Course – XI (CC)	Computer Application in Apparel Industry - Practicals	6	4	3	40	60	100
	Core Course – XII (CC)	Research Methodology & Statistics	6	5	3	25	75	100
	Elective - II	Clothing Production Management	6	4	3	25	75	100
	Elective – III	Apparel Export Management & Global Marketing	6	4	3	25	75	100
		Total	30	22				500
IV	Core Course – XIII (CC)	Knitting Clothing Technology	6	5	3	25	75	100
	Core Course – XIV	Textile Economics	6	4	3	40	60	100
	Project Work	Dissertation=80 Marks [2 reviews -20+20=40 marks Report Valuation = 40 marks] Viva = 20 Marks	6	5	1	-	1	100
	Elective - IV	Fashion Communication & Visual merchandising	6	4	3	25	75	100
	Elective - V	Home Textiles	6	4	3	25	75	100
		Total	30	22				500
		Grand Total	120	90				2000

#### Note:

Core Courses include Theory, Practicals & Project

No. of Courses 14 - 17 Credit per Course 4 - 5

Total Credits 70

#### **Elective Courses**

(Major based / Non Major / Internship)

No. of Courses 4-5Credit per Course 4-6

Total Credits 20

	Internal	External
Theory	25	75
Practicals	40	60

## **Project**

Dissertation 80 Marks [2 reviews - 20+20] = 40 marks Report Valuation = 40 marks] Viva 20 Marks 20 marks

Passing Minimum in a Subject

CIA 40% Aggregate 50% UE 40%

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#### **CORE COURSE-I - TECHNICAL TEXTILES**

#### Unit I

## **Technical textile**

Introduction, definition and scope of technical textiles. Technical fabric structure-Woven and non-woven.

#### Unit II

## **Home textiles**

Definition, Bed linens, Floor covering, Wall coverings Door and window treatments, Table and kitchen linens.

#### **Unit III**

# **Medical and Survival textiles**

Introduction. Non implantable materials, Implantable materials, Health care and hygience, textiles. Tents, helmets, gloves, sleeping bag, Survival bags and Suits.

#### **Unit IV**

# **Textiles in transportation Geo Textiles**

Introduction, Textiles in Cars, Road vehicles, Rail ways, Aircraft and Marine applications. Essential properties of Geo Textiles, Applications of Geo Textiles, Natural fiber for soil strengthening.

#### Unit V

# **Textiles in defence**

Textiles for Protection, Thermal insulation materials, Camouflage concealment and deception, Flame and Heat protective textiles, Ballistic protective materials, Intelligent textiles-use of Wearable electronics

#### **References:**

1. Horrocks, A.R. and Anand, S.C., Handbook of Technical Textiles, The Textiles Institute, Wood Head Publishing Ltd., England, 2000.

- 2. Rigby, A.J. and Anand, S.C., Non-wovens in Medical and Healthcare Products, Technical Textiles, Int., 1996.
- 3. Pandy, S.N., Potential for the use of Natural Fibres in Civil Engineering, Jute Technological Research Laboratory, 2002
- 4. Grosick, Z.J.Walson's Advanced Textile Design-compound woven structures, Woohead Publishing, England, 2004.
- 5. Murphy W.S, Textile Finishing, Abhishek Publications, Chandgarh, 2000.

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# CORE COURSE II–(CC) APPAREL PRODUCTION TECHNOLOGY

#### **UNIT I**

Introduction to Indian Apparel Industry - Organization structures and sectors of the Garment Industry. Introduction to various departments of Apparel Industry - Merchandising, Designing and Marketing - Sampling, Cutting, Production and Finishing - Shipping and Documentation.

#### UNIT II

Pre-production planning – types of samples and sample approval. Cutting Techniques – Cutting process – Marker planning – methods of planning and their use – efficiency of marker planning – spreading methods and lay planning -Fabric packages – cutting machineries and equipment.

#### UNIT III

Sewing Production – Seam types, stitch types. Machines used in sewing and bed shapes - Machine attachments - Machine problems and solutions - Feeding mechanism. Basic Production system – manual marking through - progressive bundle system - section or process system – synchro system – unit production system –quick response sewing system – Principle of choosing a production system.

#### **UNIT IV**

Fusing and pressing technology – Fusing definition- types of fusing material – Types of resin coating- methods of fusing- machinery and equipment for fusing. Pressing definition- purpose of pressing- categories of pressing-machinery and equipment.

#### UNIT V

Types of apparel products – Basic Garment, Component. Seam Identification for vest coat, shirt, trouser, skirt. Sequence of operation for vest coat, shirt, trouser, skirt, Jacket - Basic types of apparel production process.

#### References:

- 1. Harold carr & Barbara Latham, The Technology of Clothing Manufacture, oxford BSP Professional books 1994.
- 2. Kilgus, R. Clothing technology; From Fibre to Fashion, Verlag Europa Lehrmittel, 1996.
- 3. Tarlos, E. Clothing matters; Questions of dress and identity in India, Hurst 1996.
- 4. George.E.Belch, Michael.B.Belch, Introduction to advertising and promotion An Integrated Marketing Communication Perspective, 1995 Richard, Irwin, Inc.
- 5. Varma and Aggarwal, Advertising Management, Kingsbood Educational Publishers, Delhi 1997.
- 6. Chuter.A.J, introduction to Clothing and Production Management,
  Om Books Services, New Delhi 1995.
- 7. Darlie O'Koshy 'Garment Exports' Winning strategies'', Prentice Hall of India, 1997.
- 8. Darlie O'Koshy Effective Export marketing of Apparels, Global Business Press 1995.

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# CORE COURSE - III (CC) APPAREL STANDARDS AND QUALITY CONTROL

#### **UNIT I**

Introduction to Quality standards – importance – benefits - levels & sources of quality standards - British standards & ISO standards for the apparel industry – ISO 9000 & 14000 standards & SA 8000 - Total Quality Management systems. Quality – Introduction – definition & importance – quality inspection – raw material – product – online – final inspection

#### UNIT II

Garment defects: Cutting defects - Sewing defects - assembly defects - Pressing -Finishing & Packaging defects. Concepts of TQM - tools used for quality assurance - Care labels - International care labelling system - Japan -Canada -British care labelling systems.

#### **UNIT III**

Starting a quality control program, implementation of quality system in production line – Product specification & analysis using analytical tools - Quality management through inspection & Seven quality tools.

#### **UNIT IV**

Testing Standards and Specifications fibre length, maturity, yarn strengthyarn count, Bursting strength, Abrasion, Pilling, Drapemeter, Crease recovery and stiffness.

#### UNIT V

Accessories testing -Inspecting garments using spec sheets - Inspecting garments using measuring tapes - without using measuring tapes - Button quality testing - Interlining quality testing - Packing a shirt and identifying faults.

Quality costs & customer returns - Inspection procedures - AQL & apparel quality controls.

#### **References:**

- 1. Pradeep V Mehta, Managing Quality in Apparel Industry, NIFT publishers.2000
- 2. Mehta P V, An Introduction to quality control for the apparel industry, Marcel Dekker.2001
- 3. Slater K, Physical Testing & Quality Control, Vol 23, No.1/2/3, Textile Inst. 1993.
- 4. John H Skinkle, Textile Testing, Brooklyn pub. NY.2003
- 5. Sara J Kadolph, Quality Assurance for textiles & apparels, Fairchild pub, 1998.
- 6. Ruth Clock 7 Grace Kunz, Apparel Manufacture Sewn Product Analysis, Upper Sadale River pub., NY, 2000.

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# CORE COURSE – IV (CC) ADVANCE FABRIC PREPRATION

# UNIT I

# **Preparatory process**

Grey fabric – properties of grey fabric. Basic fabric prepratery processes - Singeing, Scouring, bleaching, mercerizing, desizing.

#### **UNIT II**

# **Dyeing Printing and Printing procedure**

Classification of dyes and Stages of dyeing, Characteristics of dyes Suitable for different fibres. Direct, Vat, Sulphur, reactive, naphthol, acid and Basic and Disperse Dyes, Method of dyeing Natural Dyeing, Cotton, Silk, Wool and Synthetics with respective dyes, Dyeing of fibre blends, Natural dyeiong-Sources, extraction, Mordants-definition, need, types, Mordanting techniques, Dyeing procedure, Definition types, Direct style-block stencil, screen, roller printing, Duplex printing, Rotary, Transfer printing. Discharge

style Resist style-Batik, tie and dye, Minor printing methods- Flocking, Marbling, Blotch, Jetspray, Electrostatic, Photoprinting, Warp printing and Air brush printing, Preparation of printing paste – role of thickeners, types method of application

After treatment of printed fabrics

#### **UNIT III**

# **Computer colour analysis**

Anatomy of a colour measuring instrument - spectrometer, Special employed in colour

Systems, Softwares and hardwares for systems, Objective specification of colour: tristumulus values, The CIELAB system of specification of colour, Colour difference, The pass/ fail system, Shade Sorting, Strength analysis of dyes from solution. Assessment of whiteness of degree of yellowness, Computer Colour Matching.

#### **UNIT IV**

#### **Textile Finishes**

Finishes, types, Recent trends in finishes - Calendaring, tentering, stiffening, gabbing, Decanting, Beetling, Glazing, Schreinerizing, Embossing, Moiering, Ciering, Raising, Napping, Gigging, Shearing. Water Proofing, Water repellency, Sanforizing, antimicrobial finish, anticrease, Wash and Wear, fire proofing silk Weighing, Crepe and Crinkle effect. Softening, durable press.

#### UNIT V

# Recent trends in wet processing

Study of enzymes, Role of enzymes for various textile processes-desizing, scouring, bleaching, softening, biopolishing, degumming.

#### Reference:

- 1. Shenai, V.A. Technology of Textile Processing, Chemistry for Dyes and Principles of Dyeing, A Sevak Publication, Bombay, 1993
- 2. Manivsakam.N. Treatment of Textile processing Effluents, Sakthi Publications, Coimbatore, 1995.

- 3. Gulrajani, M.L. Deepti Gupta, Natural dyes and their application to Textiles, Indian Institute of Technology, New Delhi, 1992
- 4. Prayag, R.S. 'Technology of Textiles printing, L.R. Prayag, Dharwad, 1995.
- Shenai, V.A. History of Textiles Design, Sevak Publications, Mumbai, 1995.
- 6. Sule, A.D. ATIRA, Computer colour analysis- Textile applications, New Age International Private Limited, New Delhi, 2002.
- 7. Nalankilli.G., Textile Finishing, SSM Publication, Komarapalayam.2000.

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# CORE COURSE –V (CC) ADVANCE FABRIC PREPRATION –PRACTICALS

- 1. Desizing, Scouring, Sizing, Calendaring and Mercerizing of cotton.
- 2. Bleaching of cotton, silk, wool and synthetic textiles with hydrogen peroxide.
- 3. Degumming and weighting of silk. Felting and chlorination of wool.
- 4. Dyeing of cotton silk, wool and synthetic textiles with different synthetic dyes.
- 5. Extraction and application of natural dyes on cotton silk, wool and synthetic textile.
- 6. Printing of cotton and silk, using different techniques

#### **References:**

1. Shenai, V.A., Technology of Textiles Processing, Chemistry of Dyes and Principles of Dyeing, A Sevak Publication, Bombay, 2002

- 2. Manivasakam.N. Treatment of Textiles Processing, Effluents, Sakthi Publications, Coimbatore, 1995.
- 3. Gulrajani, M.L., Deepti Gupta, Natural Dyes and their Application to Textiles, Indian Institute of Technology, New Delhi, 1992.
- 4. Prayag, R.S., Technology of Textiles Printing, L.R.Prayag, Dharwad, 1985.
- 5. Shenai, V.A., History of Textiles Design, Sevak Publications, Mumbai, 1995.

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# CORE COURSE – VI (CC) - ADVANCED FASHION DESIGNING

#### UNIT 1

Introduction to Fashion design - Elements of Design- Principles of design - Classification of design - structural and decorative design - Sources of Fashion - Terms related to Fashion Industry - Boutique Collection.

#### UNIT 2

Fashion terminology – factors influencing fashion – origin and procedures of fashion – profile of fashion industry. Fashion cycle – trends based on climate – age groups. Classic seasons in fashion industry and calendar of events

## UNIT 3

Design needs, extract from verbal and visual understanding – describing statistical information and solving problems through designs – description of situation by various means of communication –text – drawing- graphics-photographs.

#### UNIT 4

Product profile design generation – intentions of design – psychological – sociological – economical influence of dress – texture- live colours – shape – form & design for clothing. Evaluation of ideas against specifications. Generating a range of design solutions using sketches – diagrams & existing

materials. Product design presentation using combination of text – graphics & computer generated images. Conducting tests and trails for the decision making with respect to material production. Analysis and reasons for selection / rejection of chosen design proposal for the product development.

#### UNIT 5

Color, dimension of color, hue, value, intensity, color schemes its importance and application. Fashion Illustration - 4 ½ heads -8 -head figure and 10 head figure -How to draw *lay* figures -front back and side view of mens, women's and kids-proportions of measuring 8 -head figure and 10 head figure.

#### **References:**

- 1. 1. Castelino, M. Fashion Kaledioscope, Rup & Co., 1994.
- 2. John Wiley, "Theory of Fashion Design" John *Wiley* and sons. Inc, New York, 1990
- 3. Stecker P, "The Fashion Design manual" Macmillan, Australia, 1997
- 4. Sharon Lee Tate, Inside Fashion Design, Harper & Row Pub, NY.1998
- 5. Leslie Devis Burns & Nancy O Bryants, Business of Fashion, Oregon State Univ. publishers

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# CORE COURSE – VII (CC) – ADVANCED FASHION DESIGNING PRACTICAL

- I. Designing and constructing a garment for
  - a) Visually disabled / Polio
  - b) Pregnant Women
  - c) Party wear
  - d) Stage wear
  - e) Bridal wear
  - f) Fashion wear using recent fabrics
  - g) Fancy Saree blouse
- II. Develop designs based on themes and construct atleast three garments.

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# CORE COURSE – VIII (CC) - APPAREL MERCHANDISING

#### UNIT 1

Merchandising concepts: Definition of merchandising – merchandising as a business function – Behavioral Theory of the Apparel Industry – Relationship within the apparel Industry and between the environment and the industry – Evolution of merchandising in Apparel Industry – Merchandising Technology: Role – quick response business system – sources and capabilities – making quick response in to accurate response.

#### UNIT 2

Market environments – political – legal – technical – social and cultural environments, basic aspects of culture, analytical approach to culture factors- cross-cultural challenges.

Apparel market and environment of marketing – micro and macro marketing environment trends- development – size and structure of Apparel and Fashion Market- apparel market – study of markets and segments. Contribution of Fashion markets to the Apparel Industry. Major fashion markets of the world – Italy- Paris- U.S.A.- Japan.

#### UNIT 3

Consumer behaviour in Apparel and Fashion Market – Fashion Buyer – Decision Making – Psychological and sociological aspects – Product Planning and development – Development of new product. Apparel and Fashion Market practices and Procedures.

#### **UNIT 4**

Merchandising System: Planning – developmental presentation – merchandise planning- fundamental- overview of line process – traditional line planning – forecast based merchandise planning. Merchandising perspective on pricing and profits – planning and controlling merchandising budget – components of merchandising budget and its mechanics.

#### UNIT 5

Introduction to Sourcing – Apparel Costing & Quality Assurance for merchandising Introduction to retail merchandising & visual merchandising

#### **References:**

- 1. Castelino, M. Fashion Kaleidoscope, Rup & Co., 1994
- 2. Mike Casey, Fashion Marketing, Blackwell Science UK 1995
- 3. Merchandise buying and management: Fairchild Publications1998.
- 4. Grace I. Kunz, Merchandising: Theory, principles and Practices. IOWA state university, fair child books2003
- 5. Oleon Peter, Consumer behaviors and marketing strategy, McGraw Hill Publications.2000
- 6. Leslie Devis Burns & Nancy O Bryants, Business of Fashion, Oregon State Univ. pub 2000
- 7. Fashion: From concept to consumer, Frings G.S., Prentice Hall 6th edition, 1998

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# CORE COURSE – IX (CC) ENTREPRENEURSHIP DEVELOPMENT

#### UNIT 1

Principles of Management: Process of Management: Planning -types & strategies, Organizing business - organization & types, office management, Actuating- leadership, motivation & Communication and Control- authority, power, centralization / Decentralization, delegation.

#### UNIT 2

Entrepreneurship: Introduction - Management strategies - Starting a new venture, essentials of a successful centre. Activities of a modern business entrepreneurship. Project planning - formulation & appraisal.

#### **UNIT 3**

Location of enterprises - Guidelines on location - factors influencing plant location- availability of labor - raw material - transportation - market & Govt. policies.

#### UNIT 4

Plant layout-building structure – lighting - ventilation & heating - material handling

SISI- DIC- handloom – Textile Committee.

#### UNIT 5

Financial planning - Role of Government & financial institution in entrepreneur ship development. Industrial sickness & remedies - Tax planning -knowledge of exemptions & deductions.

A new project proposal to start an Apparel Industry

## **References:**

- 1. Harell, For entrepreneurs only, Career pub., New Jersey, 1995
- 2. Vikram Sarabhai, Management for Development, Vikas pub., 1974
- 3. Rajagopal, Entrepreneurship and Rural markets.1998
- 4. Ormerod A, Textile Project Management, The Textile Institute, 1992 Terry & Franklin, Principles of Management, AITBS, 2002

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# ELECTIVE COURSE – I (CC) PATTERN MAKING AND CLOTHING CONSTRUCTION

#### UNIT 1

Introduction to Pattern Making – WorkRoom Terms and Definitions – Fabric Terms, Land Marks – Balance Line Terms – Seams – Notches- Grain lines. Industrial Form Measurement Chart – Personal / Model Measurement Chart. Measuring Techniques for Industrial Form and Human Figures. Organisation and Fitting

#### UNIT 2

Methods of pattern making – Drafting – Draping and flat pattern making. Principles of Pattern Making

Drafting the Basic Patterns – The Basic Bodice Block – The Skirt – The Sleeve Draft

#### UNIT 3

Draping the Basic Patterns – The Basic Drape – The Skirt Drape – Transferring the Muslin Drape to Pattern Paper. Design through draping – draping principles and methods – Basic procedures for draping in blouse and skirt area. Preparation of dress form.

#### UNIT 4

Major Three types of Flat Pattern Making – Dart Manipulation by Pivotal method – Slash and Spread Method – Elimination of darts in to Princess Line.

Flat Pattern – Add fullness – Cowls & Built up Mechanisms. Pattern Alteration – Length and Width – shoulder – bust – waist and adjustment.

#### UNIT 5

Introduction to grading – Pattern grading and its significance – grading to 1 size up or down – Grading to 4 size up or down – Grading techniques and methods.

Pattern for Knitted Garments – T-shirts – Track suits – Swim Suits.

#### References:

- 1. Winifred Aldrich "Metric Pattern Cutting" Third Edition Blackwell Science.2003
- 2. Mary Matthews "Designing, drafting and tailoring" Practical Clothing Construction Part I and Part II.1981.
- 3. Shoben Martin "Graidng" Batsford pub, UK2002
- 4. Goulbern Margaitha "Introducing pattern cutting, grading and modeling.Batsford pub, UK2000
- 5. Bane Allyne, Flat pattern design, McGraw Hill USA.2002

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# CORE COURSE – X (CC) PRACTICAL – IV- COMPUTER APPLICATIONS IN APPAREL INDUSTRY.

#### UNIT 1

Computer Aided Designing: Fundamentals of CAD Design Process - application of computer for design creating - the manufacturing database benefits of computer-aided design.

#### UNIT 2

Computer Applications Fabric - pattern making – grading - marker making - laying-cutting – sorting and labeling - duplicating-marker efficiency. Computer applications in sewing technology - garment designing and stitching - Computer & Quality Control.

#### UNIT 3

Introduction to Computer Aided Process Planning: Planning function type - process planning – system generative -process planning systems benefits

#### **UNIT 4**

CAD-CAM Integration for textile Industry- Computer aided knitting - weaving and embroidery.

#### UNIT 5

Computer Integrated Production Management System (CIM) - Advanced Computer assorted Design.

#### **References:**

- 1. Winfred Aldrich, CAD in Clothing & Textiles, Blackwell science, 1994
- 2. Annual World, Computers in the world of textiles, Textile Institute, UK, 1984. Taylor P, Computers in
- 3. Fashion Industry, Heinemann pub., 1990
- 4. The Textile Institute. Winning through Information Technology, UK.2003
- 5. Berkstresser. Buhanan & Graddy, Automation in the Textile Industry: from Fibres to Apparels, The Textile institute, UK.1995

**6.** Veinsinet D O. Computer Aided Drafting & Design-Concept & Application, 1987

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# CORE COURSE – XI (CC) COMPUTER APPLICATION IN APPAREL INDUSTRY PRACTICALS

- 1. Introduction to Software and Hardware of apparel CAD
- 2. Development of croquies based on the head theories for men, women and children in various poses.
- 3. Texture mapping and virtual Fashion mapping of original color, transparent effect, designs, stripped, checks and prints.
- 4. Draping of Fabric on the croquies
- 5. Designing different types of accessories and its application on the drapes croquies.
- 6. Development of mood board using computer.
- 7. Designing garments for various occasions based on themes male, female and children
- 8. Draft the pattern and grade using Spec sheets for knitted and woven garments.
- 9. Lay planning for knitted and woven garments
- 10. Digitizing the flat pattern to computer system.

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# CORE COURSE – XII (CC) RESEARCH METHODOLOGY AND STATISTICS

#### UNIT 1

Types of Research – Different types of research and its applications. Methods of collecting data – conducting enquiries to collect primary data – sources of secondary data – preparation of schedules – questionnaires – pre testing and pilot study – interview method of enquiry – editing and coding the data.

#### UNIT 2

Classification by categories and measurements – discrete and continuous variables – tabulation scheme – preparation of tabular forms – methods of securing accuracy in tabulation. Representation of Data – Graphical representation – diagrammatic representation.

#### UNIT 3

Sample surveys – choice of the sample – simple random samples – systematic samples – cluster samples –multistage sample and quota sample – sources of bias and methods of reducing bias. Experimentation and thesis writing – Principles and planning of experiments – presentation of data – writing reports – footnotes and bibliography citations

#### UNIT 4

Measures of central tendency and variation – Mean – median – mode their relative advantages and disadvantages – measures of dispersion – mean deviation – standard deviation – quartile deviation – coefficient of variation – percentiles and percentile ranks.

Correlation and regression – Correlation – coefficient of correlation and its interpretation – rank correlation – regression equations and predictions – association of attributes – contingency table.

#### UNIT 5

Probability – rules of probability and its applications – normal – binomial-their properties – Importance of these distributions in research studies. Test of Significance – large and small sample, 't' and f tests for independence using chi-square analysis of variance and applications.

#### References:

- 1. Sidhu K.S. Methodology of Research in Education Sterling Publishers Pvt. Ltd., New Delhi 1987.
- 2. Best, J.M. and Kahn, J.V., Research in Education, Prentice Hall of India Ltd., NewDelhi, 1989.

- 3. Kothari, C.R., Research Methodology, methods and techniques, Wiley Eastern Limited, New Delhi, 1990.
- 4. Agarwal, Y.P., Statistical methods, Sterling Publishers Pvt. Ltd., 1990.
- 5. Richard, I. Wevin. et. Al., Statistics for Management, Prentice Hall of India Ltd., 1991.
- 6. Palanisamy.S. and Monaharan, M., Statistical Methods for Biologists, Paramount Publications, Palani, 1991.
- 7. Sancheti, D.C. and Kapoor, V.K., Statistics, Theory, Method and Application, Sultan Chand & Sons. New Delhi, 1993.
- 8. Gupta, S.P. Statistical Methods, Sultan Chand & sons, New Delhi, 1996.
- 9. Alice Mani, Fundamentals of Business Statistics, Supreme Publishing House, 1997

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# ELECTIVE COURSE –II ( EC) - CLOTHING PRODUCTION MANAGEMENT

#### UNIT 1

Production Planning & Balancing - Process analysis - breakdown of garment production - Production flow charts - improving process. Theoretical balancing - skills & inventory - balance & control - balancing calculations.

#### UNIT 2

Productivity measurement in International, National, Enterprise Level – Benefits of higher productivity – productivity in the individual enterprise. Technique for productivity improvement – improving productivity by reducing work content – ineffective time – management of productivity

#### UNIT 3

Work Study – Basic procedures – pre-requisites of conducting a work study – Factors effecting working conditions – Management & supervision – role in work study – Lighting – Climate – Noise – Vibration – Conditioning

#### UNIT 4

Method Study – Definition & Objectives – Work Measurement – work sampling – time study – equipment – selecting & timing the job. Time study – rating & standard time.

#### UNIT 5

Methods and movements in the work place – introduction – Principles of motion economy – classification of movements – work place layout – design of figures – tools and fixtures – machine controls and display of dials. Process charts – two handled – micro motion study. Use of films in method analysis & other recording techniques. Development of improved methods and methods laboratory.

#### References:

- 1. A.J.Chuter, Introduction to Clothing Production Management, Blackwell science
- 2. Harold Carr, The Clothing Factory, Clothing and footwear Institute, 1972.
- 3. Kilgus, R. Clothing technology; From Fibre to Fashion, Verlag Europa Lehrmittel, 1996.
- 4. Tarlos, E. Clothing matters; Questions of dress and identity in India, Hurst 1996.
- 5. Gaetan, M. Sewn product engineering and reference manual, Bobbin publications. 1977
- 6. Ruth E Clock, Apparel Manufacturing & sewn product analysis
- 7. Tyles D J, Material Management in Clothing Production, Blackwell Science Pub.

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# ELECTIVE – III (EC) APPAREL EXPORT MANAGEMENT & GLOBAL MARKETING

#### UNIT 1

Organization – principles of formation – forms of business – organization – proprietorship – partnership – public – private limited company. Export Organisation – Establishment and registration – ICE & CLE – Council – government promotional activities – role of AEPC – export order processing.

#### UNIT 2

Export marketing of apparel - global scene - prospects for Indian apparels in overseas market - globalization. Export credit- short term - anticipatory letter of credit (L/C), packing credit - negotiation of bills - short -medium & long term export credits -methods, role of terms of payment in international trading. Factors responsible for counter trade growth

#### UNIT 3

Export documentation – Introduction and various types of export documents – Pre- shipment and Post-shipment documents – Pre-Shipment and Post-Shipment finance. Export duty draw back – pass book – capital goods-import license and assistance.

#### UNIT 4

Domestic trade Vs international trade - regional trades - blocks - nature of foreign exchange market - main functions - business & environment - social & logical. Business ethics. Standard policies- Indian trade policies - India's foreign trade policy - Export & import policy

#### UNIT 5

Export barriers – Impact of WTO – GATT – MFA phase out – Globalization and quota implications – tariff and non-tariff system of operations.

#### **References:**

Jeannette Jarnow, Dickerson, Inside the Fashion Business, Prentice hall, USA,

Richard Hill, Ralph & James, Industrial Marketing, AITBS pub., 1998 Dickerson, Textiles & Apparel ,in the Global economy, Prentice Hall, 3rd ed. 1998"

Darlie Koshy, Effective export marketing of Apparel, Global business press, 1996.

Merchandise buying and management: Fairchild pub.

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# CORE COURSE – XIII (CC) KNITTED CLOTHING TECHNOLOGY.

#### UNIT 1

Introduction to knitted fabrics. Difference between knits and wovens, Indian knitting industry – past, present and future.

#### UNIT 2

Hand knitting, terms used in knitting, weft knitting & warp knitting – introduction and comparison. Parts and functions of weft knitting and warp knitting – calculations used in knitting

## UNIT 3

Wefts knit structures – single jersey or plain – rib – purl – interlock – Knitfloat- tuck and stitch structures – designing of weft structures. Warp Knit Fabrics –warp knit structures – underlap – overlap – closed lap and open lap stitches.

#### **UNIT 4**

Latest Knitting machines, weft –knitting machines warp knitting machines – Knitted fabric defects.

#### **UNIT 5**

Knitted garment manufacture: Cutting – stitching – quality control of knitted garments- knit wear garment designs and developments.

#### **References:**

David J Spencer, Knitting Technology, Pergeman press UK

Terry Brackenbury, Knitted Clothing Technology, Blackwell Science Publications.

Samuel Raz, Flat Knitting Technology, Germany.

Smirfitt, An Introduction to Weft Knitting, Merrow Publications.

Cegielka L, The knitting Industry: Present needs, future requirements, Vol 19, No. 1, The Textile Institute 1988.

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## **CORE COURSE XIV – TEXTILE ECONOMICS**

#### Unit I

Origin and growth of major textile industries – Cotton, wool, silk – Recent developments in these industries.

#### **Unit II**

Origin and growth of minor textile industries and allied industries – Coir, leather, Paper, Chemicals, dyes, Textile machinery

#### Unit III

Origin, growth and development of Hoisery and readymade garment industries,

#### Unit IV

Origin, growth and development of Handloom, Powerloom and Kadhi industries - Role of five year plans in the development of textile industries.

#### Unit V

Associations and research organisations related to textile growth SITRA, NITRA, SASMIRA, AITRA, TEA, SIMA, NIFT, CIRCOT, Textile promotion council and other related associations and organisations.

**Reference:** Year Books, Textile Journal, Kothari textile directory.

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# ELECTIVE IV FASHION COMMUNICATION AND VISUAL MERCHANDISING

#### UNIT 1

Fashion promotion and need for communication process – Media planning and production. Communication through different media – electronic media – photography – print media. Clothing culture and communication - men and women clothing – groups - role & status of clothing. Clothing culture & communication based on conservative –labor – liberal – social – democrat - customs and marital status

#### UNIT 2

Communication Practice: Scripting source – conducting interviews – event reporting fashion critics – case studies – designing catalogues and brochure – visualization of décor and ambience – fashion choreography. Individual & dress - personal communication - personal expression - image building. Psychological & sociological influence on clothing

#### UNIT 3

The Store window – Mannequins and Display settings – exterior of the store – window display – masking – mannequins and alternatives – 3D dressing - Elements of visual Merchandising.

#### UNIT 4

Props, Promotion and Signage – Attention getting devices and familiar symbols – Visual Merchandising planning and colour plates – furniture as props and signage display – sale ideas and setting display shop

#### UNIT 5

Store interior planning – store planning and design – store interiors and display locations – fixtures and dressings – store planning systems –

pointing purchase display – exhibit –trade show design industrial display – fashion shows – trade organization and sources.

#### **References:**

- 1. Castelino, M. Fashion Kaleidoscope, Rup & Co., 1994
- 2. Kathryn Mikelvey, Fashion Source, Blackwell Science Publication, Oxford, England.2000.
- 3. Laura L Bliss, Study Guide Visual Mechandising and Display third edition, 1955 Fairchild's Publication Newyork1997
- 4. Martin M Pegler (S V M) Visual Mechandising and Display third edition, 1955 Fairchild's Publication Newyork.1997
- 5. Jetwany J N Advertising, (1999)
- 6. Roundy N & Maid D, Strategies for technical communication 1985, little Brown & Company., Boston

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## **ELECTIVE V – HOME TEXTILES**

#### Unit I:

Introduction to Home Textile, need for Home Textiles, woven & Non woven fabrics used in Home Textiles

# **Unit II: Wall & Floor Covering:**

Types of wall covering, need, maintenance, curtains, grocers and recent trends

# Unit III: Living room furnishing:

Introduction, choosing color, pattern & Texture for interiors, Sofa types, Sofa covers, wall hangings, cushion & cushion covers, upholstery materials, Bolster & Bolster covers, care & maintenance

#### **Unit IV: Bed Linens:**

Introduction Types of mattresses and mattress covers, Types of bed linens – Blankets, Pillow, quilts and comforters, care & cleaning of bed & bed spreads.

#### **Unit V: Kitchen and Table Linens:**

Kitchen linens: Introduction, types of kitchen linens – Hand towel dish cloth, kitchen apron coves for kitchen equipments.

Table Linens: Introduction, Types of table linen, Table cloth, Table maps, Table napkin, Doilies, runners, Protective pads, Silence cloth, Selection of Towel & Table line

#### **Reference:**

- 1. Hotel, Hostel and House Keeping \_ Fifth edition by Joan. C. Branson, Margaaret lennox. Published by ELS & imprint, hodder & Stoughton
- 2. Interior decoration in India by Densorkary K.S. D.B. Taraparevals Sons & Co. Pvt Ltd. 1973.

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