

**BHARATHIAR UNIVERSITY – COIMBATORE – 641046**  
**M.PHIL./PH.D. – Textiles and Apparel Design**  
**PART – I SYLLABUS (Effective from the academic year 2013-2014 onwards)**

**PAPER I – RESEARCH METHODOLOGY**

**Unit I**

Research Meaning – Types of Research, Research Process, Research Design, Research Problem- Identification, selection and statement, Review of Literature

**Unit II**

Survey Research - Marketing Research, Fashion forecasting, preference study, Standardisation of garments - steps involved in all the above given research Experimental Researches - Creation of new product, Need for a patent Comparative study between fabrics /yarns /fibers - steps involved in all the above given research

**Unit III**

Evaluation of the Research – Visual Inspection, Testing of Fibers, fabrics and yarns and its Interpretations. Develop a research plan for a topic in the area of the specialisation.

**Unit IV**

Methods of Data Collection, Data Processing and Analysis, Diagrammatic representations. Tests of significance – parametric tests and non-parametric tests (Only theory, no problems)

**Unit V**

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

**BOOKS FOR REFERENCE:**

1. Research Methodolgy – Methods and Techniques – C R Kothari, New Age International Publishers, New Delhi, 2004
2. Principles of Marketing – Philip Kotler and Gary Armstrong, Pearson Education, 2009
3. Research methods, McBurney, D. H. 1994, 3rd edition, Brooks/Cole publishing company, California.
4. Van Dalon hald B.1979.Understanding Educational Research- an introduction, Mc.Graw Hill, New Delhi.
5. Devas R.P.and Kulandeivelu K.A – Hand book on methodology of Research, Sri Ramakrishna Mission Vidhyalaya, 1983.
6. An Introduction to Statistical Methods by – S.P. Gupta, - Vikas Publishing House, New Delhi.

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**PAPER-II ADVANCED PAPER IN TEXTILES AND CLOTHING**

**Unit-I**

Textile industry: Prospects and problems in the last five years. Textiles policies of Government of India in the last five years. Advances in: Textile technology, textile design development, Textile marketing and world textiles

**Unit-II**

Trends in textile production and consumption aspects. Fibre yarn and fabric varieties, newer blends and mixtures. Yarn preparation as ring, rotor, air jet, self twist and siro yarns. Looms as air jet, water jet shuttleless and rapier types.

**Unit-III**

Non Wovens: Adhesive bonded, stitch bonded, needle, punched, thermo bonded, spun bonded fabrics Geo textiles and the applications. Knitted apparel: Warp and weft knitted fabrics single and double jersey, Rachel, tricot and mesh fabrics

**Unit-IV**

Consumer problems and protection, consumer organization consumer rights .Standardization and quality control in the textile industry.

**Unit-V**

Organisations related to the textiles industry textiles research association. Cotton mills federations, mill owners associations, export promotion councils, clothing manufacturers association national institute of fashion designing. Rural and Urban needs and problems readymade clothing in rural development programmes, khadi, handloom and powerloom sectors.

**References**

1. Economic Reforms & Textile Industry, Jatinder S Bedi, Commonwealth Publishers,2002
2. Textiles, Kadolph, Sara J. Prentice Hall, 2006
3. Textiles Research Journal: Textiles Research Institute, P.O. Box, 625, Princoton, New Jersey .

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**PAPER-III-Special paper**  
**APPAREL PERFORMANCE CHARACTERISTICS**

**Unit I**

Transmission Characteristics -Air permeability, heat transmission - thermal resistance, warmth, Moisture transmission - water permeability, wicking. Radio activity transmission.

**Unit II**

Transformation Characteristics- Crease resistance / recovery, crock resistance, dimensional stability - hygral expansion, relaxation shrinkage swelling shrinkage and felting shrinkage. Pilling, scorching, soiling, flame retardance, fusing, mildew resistance.

**Unit III**

Aesthetics: Colour, colour fastness, shade variation and measurement. Standards for testing. Advances of Nanotechnology in Textiles.

**Unit IV**

Fabric Handle and Comfort: Bending, Drape, Compression, Tensile, Shear, Friction, Bias extension, Formability, Tailorability, objective evaluation of fabric Hand by KES and FAST.

**Unit V**

Development of Apparels For Specific End uses: sports wear, casual wear, swim wear, winter wear, summer wear and inner wear, Protective wear – bullet and ballistic proof, fire and heat resistant, water resistance, biological resistance, UV protection and camouflage concealment and deception.

**References**

1. Saville B.P, Physical Testing of Textiles, The Textile Institute, Wood head publishing limited, Cambridge, 1999.

**REFERENCES:**

1. Ed. Postle R., Kawabata.S and Niwa M., "Objective Evaluation of Fabrics", Textile Machinery Society, Japan, Osaka, 1983.

2. Miller.E "Textiles: Properties and Behaviour in Clothing use", Textile Institute, 1998

3. Ukponmwan.J.O, "The Thermal-Insulation Properties of Fabrics", Textile Institute, 1998.

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**PAPER-III-Special paper**  
**TEXTILE PROCESSING AND TESTING.**

**Unit - I**

Dyes- classification – properties-Fibre suitability-Variou stages of dyeing. Preparation of fabric before dyeing- equipment and new methods . Printing procedure- new methods in printing.

**Unit – II**

Recent developments in processing. Role of enzymes in processing. Effluent treatment and analysis.

**Unit - III**

Innovative finishes in fabrics- softening, crease resistant, antistatic, antibacterial, water proof, flame proof, soil release, mildew and mothproof. Micro encapsulation technique in finishing. Garment. washing – stone washing , acid washing, enzyme wash, , laser, fading , ozone fading.

**Unit -IV**

Yarn testing – breaking strength, Fabric testing – fabric weight, breaking strength, crease recovery, abrasion resistance, bursting strength, colourfastness.

**Unit -V**

Textile testing analysis – Spectrophotometer - CCM, fabric permeability testing, testing for comfort, evaluation of fabric hand, whiteness index, residual starch.

Reference:

1. Shenai – Technology of textile finishing – Sevak publication ( 1995).
2. Hall A.J. – Textile Finishing – Elsevier Publications Ltd. (1986)
3. JHu – Fabric testing – Wood head textile series No.76.
4. Hassan Behery – Effect of mechanical and physical properties on fabric hand – Wood head textiles series No.4.
5. W.D.Schindler – Chemical finishing of textiles- Wood head publishers Ltd.
6. Jxin- Total colour management in textiles- wood head publishers.
7. Textile testing-Saville