

3rd SEMESTER

DISCIPLINE SPECIFIC COURSE (CORE)

HSC320C1: HOME SCIENCE (ELECTIVE): INTRODUCTION TO TEXTILES

(CREDITS: THEORY-4, PRACTICAL-2)

THEORY (4 CREDITS)

Unit I Textile fibres and their properties

Morphology of textile fibres

Primary & Secondary properties Classification of fibres

Origin, production and properties of various fibres: Natural-cotton, linen, wool, silk.

Man-made-rayon, polyester, polyamide (nylon 6, 6) acrylics, elastomeric fibres

Unit II Yarns

Basic principle of yarn making: Mechanical spinning (cotton system, wool system, worsted system), Chemical spinning (wet, dry and melt)

Types of yarns: Staple, Filament, Simple, complex

Properties of yarns: Yarn numbering systems and twist

Textured yarns: Classification, manufacture and properties

Blends: Types of blends and purpose of blending

Unit III Fabric construction

Weaving: Parts and functions of the loom

Weaves: Classification, construction, characteristics and usage

Knitting: Classification, construction, characteristics and usage

Non woven and felts-construction, properties and usage

Unit IV Dyeing, Printing and Finishing

Classification of dyes Stages of dyeing

Printing methods and style Classification of finishes

Preparatory finishes

Finishes affecting appearance and texture

Finishes for enhancing special characteristics

PRACTICAL (2 CREDITS)

1. Fibre Identification tests –Visual, burning, microscopic and chemical
2. Yarn Identification – Single, ply, cord, textured, elastic, monofilament, multifilament and spun yarn
 1. Thread count and balance
 2. Dimensional stability
 3. Weaves- Identification and their design interpretation on graph
 4. Fabric analysis of light, medium & heavy weight fabrics (five each)
 - Fibre type
 - Yarn type
 - Weave
 - GSM
 - End use
 - Trade name
5. Tie and Dye : Different methods

RECOMMENDED READINGS:

- Corbman, P.B., (1985) Textiles- Fibre to Fabric (6th Edition), Gregg Division/McGraw Hill Book Co., US.
- Joseph, M.L., (1988) Essentials of Textiles (6th Edition), Holt, Rinehart and Winston Inc., Florida.
- Sekhri S., (2013) Textbook of Fabric Science: Fundamentals to Finishing, PHI Learning, Delhi.
- Tortora, G. Phyllis, Understanding Textiles, McMillan Co. USA.
- Vilensky G., (1983) Textile Science, CBS Publishers and Distributors