

DISCIPLINE SPECIFIC (CORE) COURSES

Semester-III

HSC320C1: 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
3. Thread count and balance
4. Dimensional stability
5. Weaves- Identification and their design interpretation on graph
6. Fabric analysis of light, medium & heavy weight fabrics (five each)
 - Fibre type
 - Yarn type
 - Weave
 - GSM
 - End use
 - Trade name
7. 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 Distributor