POST GRADUATE DEGREE
STANDARD

Textile Technology

UNIT I
Fibre Identification and blend analysis

a) Identification of all natural and man-made Fibres
b) Blend analysis of the following
i. Polyester / Cotton
ii. Polyester / Viscose
iii. Polyester / Wool
iv. Other Commercial blends

UNIT II
Fibre Structure:- Structure of fibres study of the structure of fibres by i. X-ray
ii. Electron Microscope
iii. MR
iv. Infred technique

UNIT III
Mechanical Properties of fibres:-
Study of Mechanical properties such as i. Tensile
ii. Creep
iii. Torsional
iv. Elastic
v. Compression

UNIT IV
Optical Properties of fibres such as i. Refractive index
ii. Bi-refringence
iii. Dichrosim

UNIT V
Electrical and Thermal Properties of fibres such as i. Dielectric Properties
ii. Static Electricity
iii. Heat setting
iv. Flammability

UNIT VI
Polymer Production:-
Production of Polymer such as i. Polyester
ii. Nylon
iii. Viscose
iv. Acrylecs
v. Poly propylene
vi. Kevlar
vii. Nomex

UNIT VII
Spinning of Polymers
i. Melt spinning
ii. Wet Spinning
iii. Dry Spinning
iv. High Speed Spinning

UNIT VIII
Staple fibre production:-
Drawing and Crimping Heat Setting Tow to top convertions

UNIT IX
Texturing
i. Need for texturing
ii. Various methods
iii. Texturability of different fibres
iv. Structure of various textured yarns
v. Influence of Process Parametres.

UNIT X
Textiles Composites i. Classification and Characterisation of Composites
ii. Glass fibre reinforced composites
iii. Carbon fibre reinforced composites
iv. Composites with fabrics
v. Flexible Composites.

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UNIT I
SPINNING
a. Opening and cleaning
b. Preparation to Spinning
c. Ring spinning
d. Open - End Spinning
e. Air-Jet Spinning
f. Friction Spinning
g. Double Rove Spinning
h. Two for one twisting
i. Sliver to yarn Spinning

UNIT II
WEAVING
AWarp winding, Weft winding, warping, sizing, Automation in drawing-in, Automation in weaving, New methods of weft insertion special features of shuttleless weaving, C A D, various Fabric structures.

UNIT III
CHEMICAL PROCESSING
Developments in preparation, Mechanism of dyeing, modern methods of dyeing, developments in printing, Special Finishes, Energy conservation, Effluent treatment, colour order systems and colour difference measurement, colour matching.

UNIT IV
KNITTING

Yarn quality required for knitting, yarn preparation, weft knitting, warp knitting, properties and structure of knitted fabrics, finishing of knitted Fabrics.

UNIT V
NON-WOVENS
Wep formation, Bonding, spun bonding, melt blown, properties of non-wovens, Finishing of bonded fabrics.

UNIT VI
QUALITY/ PROCESS ASSESSMENT AND CONTROL
Statistical theories behind yarn quality studies, Fibre testing, yarn Testing, Fabric Testing, Production standards for spinning, weaving and processing, Quality Control in fibres yarns and Fabrics.

UNIT VII
TEXTILE MANAGEMENT
Organisation culture, Energy Management, Marketing Management, work study, costing, Industrial Relations and labour laws.

UNIT VIII
INDUSTRIAL APPLICATION OF TEXTILES
Introduction to Elastomerce materials, production and properties of textile reinforced elastomers, production and properties of industrial yarns, manufacture and application of geo-textiles study of industrial fabrics such as Tarpaulins, canvos, filter fabrics, spindle tapes, fasteners, coated fabrics, laminated fabrics, protective textiles.

UNIT IX
LONG STAPLE SPINNING
Preparation to long staple spinning, spinning of wool, jute, spun silk and long staple man-made fibres.

UNIT X
GARMENTS
Apparel industry in India with special reference to Tamilnadu, Fabric Selection, formability and Tailorability, Components of Garment finishing.