

634. Textile Technology

1. General Textile Technology

Textile Fibres: Classification of textile fibres, fibre properties , New fibres(Natural & Synthetic) ,Substrate & Geometry effect on the yarn properties, Spinning of Man Made fibres , and terms related , spinnerets, properties of cotton, wool, silk and bast fibres, Spin finish, types of silk yarns, types of silk fabrics, Types of yarn (single, multi fold & Fancy) ,

Silk Technology: types of silks ,production of Silk from Mulberry , rearing , reeling , throwing process, elements of quality in Silk

Yarn Count systems: Yarn Numbering systems, differences , conversion from one system to other

2. Conventional Textile Manufacture

a. Yarn Formation : Selection of fibres for Opening & Cleaning , Machine parameters , Quality parameters in relation to conventional and modern system . Spin Plan for Cotton , Blends and 100 % Synthetics. Doubling needs, Machines, Count calculation ,

b. Fabric Formation: Package requirements, Winding principles, Selection of parameters and machines , Hard waste control, Tailing % , Quality control procedures and Production planning , Warping creel design aspects, Sizing calculations, recipes , zones , problems , New set planning , post sizing process , new developments and quality of warp drawn. Selection weaves and of loom parameters, loom motions , settings , production planning and problems . Safety aspects .

3. Un-Conventional Textile Manufacture

a. Yarn Formation: Ring frame limitations, New Spinning Systems (Rotor, DREF, Air Jet,) process parameters and quality, Economics to scale, suitability & selection of fibres , recent developments .

b. Fabric Formation: Yarn preparatory for modern weaving , Projectile, Rapier, Airjet principles , selection & Techno-economics, safety aspects, recent developments. Nonwovens : fibre selection , reverse engineering in relation to product-process parameter selection. Applications in Technical sector , requirements of textile supplement

4. Textile Testing : Quality systems and their interpretation, new developments in fibre, yarn and fabric testing , role of statistics in results interpretation , Linking the manufacturing conditions and yarn properties and in relation to fabric response . AFIS, KESF, FAST, interpretation, SHF, Snake chart, Ellipse chart, Control chart, Nonwovens testing , Technical textiles testing ,Knit fabric testing , parameters of washing and their effect on Testing ,Moisture management of fabrics.

5. Textile Wet Processing

Grey fabric inspection, choice of wet preparatory process, parameters , role of enzymes in Textile Wet processing , effect on treated fabric quality . Water requirements for complete house. Faults in process, changes for cotton, Silk, jute, blends and 100 % synthetics, safety aspects in wet processing , housekeeping , use of solar energy in Wet processing , new designs of dyeing machines, Environmental issues related to Textile wet processing . Selection of type of printing method and finishing recipes and machines. Quality control aspects .

6. Apparel Production : Stages in Apparel production , Conflict between RMG & Tailor made, Woven Vs Knit Garments, Knit Vs Nonwoven Garments, Capacity of Garment unit, Sourcing dynamics, strategies, Fabric inspection , difference in conventional and eco-friendly garment production , share of support & raw materials, types of accessories selection and criterion, concept of garment formability & fit, Mass customization, Automation in shop floor and production sections, Role of Garment CAD, lay preparation and parameters, marker efficiency , optimization in cutting , sewing . Role of Ergonomics , concept of Logistics and Supply Chain, role of Human Resource & Material Management , types of Care labels.