**Yarn Manufacturing**
Mixing and blending, blow room. **Blow room line for cotton and synthetic fibres**, performance assessment and their remedies, cleaning efficiency of different machines, Calculations of blow room. Objective, working and principle of carding, card clothing, Process parameters, defects and their remedies, Modern development in carding, Auto leveler used in carding, Objective and working principles of draw frame, Concept of ideal draft and formation of drafting waves, drafting irregularities, and their causes, Modern developments in draw frame, Auto leveling, Calculation pertaining to draft and production. Objectives of combing, system of lap preparation, sliver lap, ribbon lap machines, configuration of fibre feed and its effect on the quality of product and efficiency of comb, combing cycle, concept of comb, calculation pertaining to production and noil percentage, recent developments in combers. Objectives and working principles of speed frame. Recent developments in speed frame. Common defects in roving package, their causes and remedies, calculations pertaining to gearing, draft, t.p.i. and production, twist multiplier and roving twist

**Ringframe**: Principle, constructional detail, calculation, spinning geometry, defects and their remedies, modern developments. Doubling, Rotor spinning, Friction spinning, Air jet Spinning

**Fabric Manufacturing**
Winding and high speed winding winding machine, principle, production calculation faults and remedies, Objective and Classification of warping machines, Common faults in warper’s beam, their causes and remedies. Sectional warping machines, Common faults in beam, their causes and remedies, Objectives and sizing terminology, classification sizing ingredients size paste, Factors affecting size pick-up, Common faults and their causes and remedies, importance of moisture content and stretch % in sized yarn. Weaving, primary, secondary and auxiliary motion, Auto and drop box loom, Dobby, jacquard, Terry weaving shuttle-less loom: classification, Projectile loom, Repier, air jet loom anf water jet loom.
**Textile Fibre**

Classification of textile fibres Cellulosic fiber Protein fiber and man-made fibres: Synthetic fibres Regenerated fibre- manufacturing process properties and application

**TESTING OF TEXTILE MATERIAL**

Introduction to textile testing, Moisture in textiles, measurement of fiber length, fine ness, maturity, strength, elongation, nep,Trash Content Study of HVI and AFIS yarn testing, count, strength, elongation, imperfection, hairiness etc Evenness testing, measurement of irregularity, irregularity index, causes of irregularity, Calculations to yarn irregularity. Uster Classimat faults. Mechanical properties of Textiles :- CRE,CRT and CRL Ballistic Tester; Tearing, Brusting strength Measurements of different dimensions properties of fabric like thickness, weight, shrinkage, air permeability, water permeability, crimp, stiffness, crease recovery, drape, fabric cover and fabric handle.

Tensile strength, Tearing strength, Bursting strength of cloth. abrasion resistance and pilling.

**FABRIC STRUCTURE AND DESIGN ANALYSIS**

Plain Weaves, Twill Weaves and sateen weave and it’s Derivatives Colour and weave combination, colour and weave effects, Figured colour and weave effects. Pile fabric, Cross weaving, Gauge and Leno; Cellular gauge, Net Leno; Principle of weaving of leno fabric, Doup heald. Backed and Double Cloth, Jacquard Design.

**Knitting Technology**

**Weft knitting:-**

Classification of weft knitting machine, elements of knitting machine like type of needles, sinkers, etc Needle numbering system, technology of loop formation, geometry of loop structure, Elements of loop structure: needle loop, sinker loop, relation between yarn count, machine gauge and stitch density.

**Classification of knit-structures:-**

Loop formation on: single jersey, Rib machines and inters lock machines, socks knitting technology, Loop formation on flat bed machine. Four primary base knitting structures: Plain knitted fabric, Rib fabric, Interlock and Purl fabric
**Warp knitting:-**

Basic warp knitting machines, classification of warp knitting, Modern developments in weft knitting technique, calculations regarding production, gm/square meter, stitch density etc, Causes and remedies of faults of knitted fabrics.

**Nonwoven**

Classification of non-woven fabrics, fibres for non-woven fabrics, Felt Manufacturing process

**Various method of web formation:-**


**latest development in non-woven industry:**

ultrasonic bonding, Infra-red bonding, bonding by bi-component fibres,. Application of various non woven fabrics