

**Major Based Elective II**

**Modern Textile Manufacturing**

**Major Divisions :**

1. Texturisation and Spinning of Staple fibres & Blends.
2. Modern trends in yarn formation
3. Shuttle less weaving
4. Non wovens and knitting
5. Project Planning and Process control in Textile Industry

**Unit – I**

**Texturisation and Spinning of Staple fibres & Blends:**

Texturing basic definition and classification of false – twist Texturing – texturability of various fibres – basics of Air jet texturing – types of yarn produced - feed material, structure and properties of Air jet textured yarns. Stuffer box and Edge crimping methods – principles, limitations and applications, Knit- de –knit and Gear crimping methods.

Methods of processing of manmade staple fibres (Viscose and polyester) in cotton system. Settings, speeds and other important changes to be made from blow room to ring frame control or static charges while processing man made fibres and Blend.

**Unit – II**

**Modern Trends in yarn formation :**

Rotor Spinning: Introduction – Classification – O.E Spinning – Basic principles constructional details and working of the Rotor spinning Machine – Study of all the parts of Rotor Spinning. Structure of rotor yarn – yarn faults and Remedial measures – end uses.

Friction Spinning : False twist Spinning– Operating principle- Dref – 2 spinning process – features. Study of Murata – Jet Spinner and Dref – 3 spinning process. Brief study of other spinning system like twist spinning, self twist and warp spinning etc., Comparison of yarn quality of Rotor, Dref and Air jet yarns – adoption of New spinning system in India.

**Unit – III**

**Shuttleless Weaving :**

Preparation of warp for shuttleless weaving – Advantages and disadvantages of Shuttleless weaving machine – classification. Study of Projectile weaving machine. Rapier looms – principles – Types. Jet looms – types –principles. – Study of Water jet looms – Study of Air jet looms.

## **Unit –IV**

### **Non – Woven fabrics :**

Non – Woven – definitions – comparison with woven fabrics –classification – methods of manufacture – types of fibre web – Production of fibre web in pneumatic web former.

Production of Non – woven fabric – mechanical, chemical and spun bonding methods.

## **Unit – V**

### **Project planning**

Balancing of machineries of processing fine, medium and coarse count from blow room to spinning machinery. Balancing of machinery for 12,000 – 25,000 and 36,000 spindles capacity. Norms interpretation of test results. Measurement and analysis of productivity.

Norms interpretation of test result. Measurement and analysis of productivity.

### **Reference Book :**

1. Man made Fibres by P.W.Moncrieff, Newens Buttesworth London
2. Textile Fibres Vol – I by v.a.Shenoi
3. Open –end Spinning by W.A.Hunter
4. Modern Preparation and Weaving machinery by a.Ormerod, Buttterworth, London
5. Process control in Spinning by Grade and Subramanian
6. Open –end Spinning by Nield
7. Norms for Spinning SITRA publications
8. Norms for Spinning and Textile Wet Processing – ATIRA Publication