

**V Semester Major Based Elective I**

**Process Control in Spinning and Weaving**

**Major Divisions:**

1. Process Control in mixing
2. Process control in spinning preparatory
3. Process control in spinning
4. Processing control in weaving preparatory
5. Process control in weaving

**Unit - I**

**Process control in mixing**

Role and scope of process control in spinning. – Key variables for process control - Establishing norms or standards – collection and interpretation of data for process control –corrective action.

Control of mixing quality and cost instrument evaluation of cotton - Control of mixing quality through fibre characteristic simultaneous control of mixing cost and quality.

**Unit - II**

**Process control in spinning preparatory**

Control of waste and cleaning in blowroom and carding – determination of trash content and cleaning efficiency – Norms for cleaning efficiency of individual machines in blowroom.

Control of comber of comber waste - Optimim level of comber waste.

Control of sliver evenness – Control of stretch at fly frames.

**Unit - III**

**Process control in spinning**

Measurement and analysis of productivity – definitions of indices of productivity – measurement productivity – productivity and profitability – means to improve productivity –Renovation at Ring frame to reduce end breaks – Recording and analyzing end breakage rate, Process control measures to be adopted for rotor spinning.

Types of yarn irregularity – Random irregularity – Periodic irregularity. - measurement and assessment of imperfections – causes of thick and thin places–check list of control of yarn unevenness and thick and thin places, Yarn faults and package defects.

## **Unit - IV**

### **Processing control in weaving preparatory**

Process control in winding –optimizing quality of preparation in winding – control of quality of knot –producing good package –defects in cone –control of faults –process parameters.

Minimizing end breaks in warping – productivity in warping – process control in sizing – choice of size pickup – preparation of size recipe – control of size pickup – control on sizing conditions – control of yarn stretch — control on sizing conditions –control of yarns stretch – process control in pirn winding – minimizing end breaks.

## **Unit - V**

### **Process control in weaving**

Control of productivity in loom shed – control of loom speed – control of loom efficiency – stop due to end breaks and warp faults. Control of loss of efficiency by snap reading – loom performance – quality of yarns – loom allocation – control of quality of fabrics in weaving – control of fabric defects – Grey fabric inspections hard waste control.

### **Reference Books**

1. Process control in spinning by A.R. Grade & T.A.Subramaniam,  
ATIRA SILVER JUBILEE MONOGRAPHS,  
Published at ATIRA – Ahamedabad.  
Pin: 380 015. India, Ist edition – 1974,  
II edition 1978.
2. Process control in weaving by M.C. Paliwal  
P.D.Kimothi,  
STIRA SILVER JUBILEE MONOGRAPHS,  
Published at ATIRA – Ahamedabad – 380 015,  
India.
3. End breaks in Ring Spining by Edition-1974-  
Authors – T.A. Subramaniam,  
A.R.Grade published at ATIRA  
Ahamedabad – India.