

# PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

## Department of Textile Engineering

Faculty Name: - Ms. Sushma

Subject Name: - Yarn Manufacturing-III

Year/Semester: -3<sup>rd</sup>/5<sup>th</sup>

Subject Code: - PCC-TEX-303A

### LESSON PLAN

S. No.	Topics to be covered	Hours	Total Hours
<b>Unit I</b>	Modern developments in ring frame	1	8
	Spinning tension in ring frame, forces acting on yarn and traveler during spinning	2	
	Theory of yarn balloon, Limitations of ring spinning systems	2	
	Introduction to open-end spinning, Comparison of ring-frame with other modern spinning technologies	3	
<b>Unit II</b>	Rotor Spinning: Principle and raw material preparation. Design and working of rotor spinning machine and effect of each on the process and product quality. Production calculation, Effect of fibre properties on the rotor yarn property, Structure of rotor spun yarns, End uses of rotor yarns, new developments	7	14
	Air-jet Spinning: false-twist process: generation of false twist, forming a yarn with the aid of false twist spinning elements. Murata Jet spinner: operating principle, Raw material requirements, Yarn Characteristics and end uses.	7	
<b>Unit III</b>	Friction spinning: Introduction and Operating principle of DREF-II, Operating principle of DREF-III, Comparison of DREF-II and DREF-III	3	12
	Use of Friction spun yarns	1	
	Working principle and Specifications: Electrostatic spinning, Self-twist spinning (Repeco spinning), Wrap spinning (Parafil process), Adhesive spinning, Twilo process (TNO), Bobtex process	8	
<b>Unit IV</b>	Comparative analysis of yarn structure for different spinning systems	1	9
	Properties and their end use application produced from rotor, air-jet, friction techniques and compact spun yarn viz a viz ring spun yarn	3	
	Importance of Compact Spinning, Different methods of fibre compacting	3	
	Properties of compact yarn, Production of fancy yarn & uses, Production of Industrial yarn- Sewing thread	2	