19TT202 YARN MANUFACTURING

SOURCE:
http://
mahalakhmiyarns.
com/gallery.html.

Hours Per Week :

L	T	P	C
3	1	-	4

Total Hours :

L	T	P
45	15	-

WA/RA	SSH/HSH	CS	SA	S	BS
10	45	-	-	-	-

COURSE DESCRIPTION AND OBJECTIVES:

This course deals with the concepts, production calculations, different types of available machines and various developments in yarn manufacturing process. This course is aimed to impart fundamental knowledge required to understand yarn manufacturing process.

COURSE OUTCOMES:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes	POs
1	Apply the fundamental concepts to analyze the production capacities of various yarn manufacturing machines.	1,2
2	Analyze and compare the process parameters of various yarn manufacturing machinery.	2,4
3	Evaluate the process parameters through industry norms to meet the quality requirements.	2,3
4	Design the set of machinery required to produce a specific type of yarn.	3
5	Demonstrate various developments in the field of yarn manufacturing	3

SKILLS:

- ✓ *Optimize the factors affecting yarn properties*
- ✓ *Identify the various key factors i n yarn manufacturing process*
- ✓ *Set the parameters for the production of cotton, synthetic and blended yarns*
- ✓ *Differentiate the carded, combed and core cover yarns*

UNIT - I **L-9**

GINNING AND BLOW ROOM: Effect of fiber parameters on selection of fibers; Ginning: objectives, pre and post ginning equipments, working principles of gins, factors affecting ginning performance, brief note on Pressing and baling of cotton.

Need for Mixing and Blending; Objectives, fibres commonly blended (Different types of blends).

INTRODUCTION TO OPENING AND CLEANING: Working principle of a typical blow room, accessories in blow room.

UNIT - II **L-9**

CARDING AND DRAW FRAME: Introduction to carding, objectives, zones, role of each element, card settings.

Draw Frame: Objects, basic concepts of drawing, principle of roller drafting, different drafting systems, methods of roller weighing, coiler mechanism, types of drafts, auto levelling in carding & draw frame (open loop and closed loop) production calculations.

UNIT - III **L- 9**

COMBER: Introduction to combing, hooks theory, combing preparatory requirements, passage of material through comber, functions and setting of each part, combing principle, cycle of combing, back ward and forward combing, production calculations, combing efficiency.

UNIT - IV **L-9**

SPEED FRAME: Objects, need of speed frame, flyer lead Vs bobbin lead, detailed study of mechanisms (Drafting, twisting and bobbin building) of speed frame, types of drafts, calculation of draft, twist & production.

UNIT - V **L-9**

RING FRAME: Objects, passage of material, principles, functions of parts, specifications of R/F, types of drafts and drafting systems, brief study of spindles, ring & travellers, calculation of draft, twist & production.

TEXT BOOKS:

1. W. Klein, “Series of Short Staple Spinning”, Wood head publishers, 2005.
2. T. K. Pattabhiraman, “Essential Facts of Practical Cotton Spinning”, Mahajan Publisher, Ahmedabad, 2005.

REFERENCE BOOKS :

1. Venkatsubramani, “Spun Yam Technology, Vol-III”, SSM Institute Publications Komarapalyam, 2003.
2. T.V.Ananthan, “Tablets on Combing, Speed Frame, Ring Frame”, TAI Publications, 2003
3. A. R. Khare. “Elements of Combing”, Mahajan Book Publishers, Ahmedabad, 2003.