SARVAJANIK UNIVERSITY
Sarvajanik College of Engineering and Technology
Bachelor of Engineering

B E II Textile Technology: Semester – III

Subject Name: YARN MANUFACTURING I **Subject Code: BTTT13302**

Type of course: PCC

Prerequisite (if any): Zeal to learn the subject

List of Courses where this course will be prerequisite: Yarn Manufacturing-II, Yarn Manufacturing-III, Process & Quality control in Spinning & Weaving.

Rationale:
This subject provides the fundamentals of spinning process. Yarn Manufacturing I covers the basics of yarn formation, which includes Lap and Sliver formation processes.

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	
3	-	2	4	60	25	15	30	20	150

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests CA2: Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems TEE: Term End Examination TEP: Term End Practical Exam (Performance and viva on practical skills learned in course) CA3: Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

BSC: basic science course /ESC: Engineering Science Course /HSM: Humanities and management /PCC: Professional Core course /PEC: professional Elective course /OEC: Open Elective course/ MD: mandatory non-credit course

Content:

Sr. No.	Content	Total Hrs
1	**General idea of Ginning & Baling Processes** Objective of Ginning, study of different types of Ginning Machineries, latest developments in Ginning and Baling Machines.	6
2	**Blow Room** Objectives & Principles of Opening, Cleaning & Mixing/ Blending Machineries; Conventional blow-room machines and blow-room lines for different cottons & manmade fibres; Modern feeders, Openers & Cleaners; mass transportation, Collection of waste; Calculations pertaining to Blow room.	17
3	**Carding** Objectives; Construction and Working of Revolving Flat Card; Card Clothings; Grinding & Stripping ; Card settings; waste at card; Intensity of card; Web defects; Calculations related to Card.	15
4	Concept of requirement of modern card; Licker-in modification, Doffer modification; ; Chute Feeding System; Auto leveller in Card; Tandem card; Roller cards	7

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
15	**20**	**10**	**5**	**5**	**5**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Sr no	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	A practical guide to opening and carding-	W. Klein.	The Textile Institute Manchester : 0-900739-92-4	1987	Ist
2	Cotton Carding	Merrill Gilbert R.	Gilbert R. Merrill : Mass	1955	Ist
3	Institute Series on Textile Processing Vol.1 & Vol.2:	Szaloki Zoltan S	Institute of textile technology: Virginia	1976 &1977	Ist
4	Manual of cotton spinning, Volume II, opening & cleaning- Butterworth	Buckley J.T.	The Textile Institute, Butterworth-Manchester :	1965	Ist
5	Manual of cotton spinning, Volume III, Carding,	Buckley J.T.	The Textile Institute, Manchester :	1965	Ist

6	Elements of raw cotton and blow-room	Khare.A.R.	Sai book centre	1999	Ist
7	Spun yarn technology, volume I & II,	A.Ventasubramani.	Saravana Publications:Madurai	1998	Ist

Course Outcomes: After learning the course the students should be able to

Sr. No.	CO statement	Marks % weightage
CO-1	Select the type of ginning process for different varieties of fibres.	15
CO-2	Select the number of cleaning points of Blow room for processing of different varieties of materials.	20
CO-3	Implement the remedial measures for different quality related problems in lap formation and sliver formation processes.	20
CO-4	Calculate the production and efficiency of blow-room machines & carding machine.	15
CO-5	Calculate the Intensity of carding machine	5
CO-6	Acquire knowledge of modern Machineries of blow room & card	25

Mapping with POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO-1	2	3	0	1	0	0	0	0	0	0	1	1	3	3	0
CO-2	2	3	0	1	0	0	0	0	0	0	1	1	3	3	1
CO-3	2	3	0	1	1	1	0	0	0	0	1	1	3	3	3
CO-4	3	3	0	2	1	0	0	0	0	0	1	1	3	3	0
CO-5	1	3	0	2	1	1	0	0	0	0	0	1	3	3	0
CO-6	2	3	1	2	1	1	1	0	1	1	1	1	3	3	3
Rationale*	2	3	1	2	1	1	1	0	1	1	1	1	3	3	3

Rationale* : This subject provides the fundamentals of spinning process & spinning is must learn process in Texile Technology. Hence this subject correlates with POs.

List of Open learning website: https://nptel.ac.in, world wide web, Google search Engine etc.

List of Open Source Software: -

FOR LAB SESSIONS:

List of Experiments:

1. Lay out of spinning Lab

2. Study of various methods of transferring motion from one shaft to another shaft.
3. Lay out of Blowroom line and different Bypass arrangement..
4. Passage of material through Blow room.
5 Study of different parts of Blow-room
6. Study of driving arrangement of Blow-room.
7. Study of Piano Feed Mechanism.
8. Study of Full Lap Stop Motion and Doffing Arrangement.
9. Calculations:-
10. (a.) Surface speeds (b.) Blows/inch (c.) Production.
11. Study of passage of material through Carding Machine.
12. Study of different parts of Carding Machine.
13. To study settings of different parts of Carding Machine.
14. Study of drive to different parts of the Carding Machine.
15. Calculations regarding to surface speeds of different parts of Carding Machine.
16. Calculations:-
(a.) Draft calculation (b.) TPI calculation.
17. Production of sliver on Carding Machine

Major Equipment Needed:

Blow Room Machineries, Carding Machine