GOVERNMENT OF TAMILNADU

DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI

STATE PROJECT COORDINATION UNIT

(Established under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	**Production Calculation in Spinning**
Course Code	TEX/2020/018
Course Duration	40 Hours
Minimum Eligibility Criteria and Pre-requisites (if any)	10th/+2/Diploma/Graduates
Course Objectives	Training module has been designed to provide the participants • Understanding of quality assurance in spinning • Understanding of Production calculation in spinning
Course Outcomes	At the end of training, the participants will be able to • Gain knowledge of different machines in spinning unit • Know how to arrange a spinning line • Know how to control the quality in spinning unit
Expected Job Roles	Technical Assistant in Spinning & Quality Controller

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
TEX/2020/018	Production Calculation in Spinning	Theory	10	10	20	3 Hours
		Practical	30	40	80	
		Total	40	50	100	

TEX/2020/018- PRODUCTION CALCULATION IN SPINNING

DETAILED SYLLABUS

Unit No	Modules	No. Of Hours	
		Theory	Practical
II	Technical calculation in spinning	20 Hours	
2.1	Yarn count – Definition, Yarn numbering system-direct and indirect system and its conversions	5	15
2.2	Yarn diameter- calculation		
2.3	Blending ratio and its properties		
2.4	No. of fibres to be in the cross section and its formula		
2.5	Blow room – machine sequence, cleaning efficiency & Production, Estimation of speed of various parts of mixing bale opener based on given gearing diagram Estimation of speed of various parts of Flexi cleaner based on given gearing diagram Calculation pertaining to production of scutcher and cleaning efficiency of beater		
12.6	Waste calculation, Neps removal efficiency, wire specification and its calculation		
II	Draft and speed calculation	20 Hours	
3.1	Draft concept –various draft, waste percentage Vs draft	5	15
3.2	Twist- S twist, Z twist& winding concepts		
3.3	Traveller speed, cop content & its calculation		
3.4	Production calculations – Carding, Draw frame, Comber, Speed frame, Ring frame, Open end spinning & winding Calculation pertaining to production and cleaning efficiency of carding machine Calculation pertaining to draft and production of draw frame machine Calculation for production of comber machine and combing fractionating index Calculation for production of Speed frame, draft and twist Calculation for production of Ring frame, draft and twist		
3.5	Doubling and fancy yarn calculations		
	Total Theory and Practical Hours	**10**	**30**
	Total hours	**40**	

HARDWARE REQUIREMENT

S.NO	LIST OF MACHINES
1	Blow room
2	Card
3	Draw frame
4	Comber
5	Simplex
6	Ring frame
7	Winding machine

SOFTWARE REQUIREMENT

Nil

REFERENCE WEBSITE / BOOKS

1. textilelearner.blogspot.com

2. www.scribd.com

3. www2.cs.arizona.edu

4. nptel.ac.in

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1	Weaving Calculations	R Sen Gupta	Bombay:D B Taraporevala, 1959
2	Spinning Calculations	WS Taggart	Universal Publisher (January 1, 1985)
3	Handbook of Spinning Calculation	TK Pattabhiram	Woodhead Publisher

ASSESSMENT AND CERTIFICATION

S.No	Criteria for assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 word/objective type questions)
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The passing criteria for successful completion of training is every trainee should score 50% of marks in theory and practical examination.
6.	On successful completion of training, Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnics.

END EXAMINATION

ALLOCATION OF MARKS

S.NO	DESCRIPTION	Max.Marks
1.	Theory Examination	20
2.	Practical Examination	
	a)Write up/Diagram	15
	b)Experiment	35
	c)Result	10
	d)Record	20
	Total Marks	**100**

THEORY MODEL QUESTION PAPER

TEX/2020/018 - PRODUCTION CALCULATION IN SPINNING

(Maximum Marks : 20)

(N.B: Answer any **twenty** questions) **20 x 1 = 20 Marks**

1. Define Yarn Count.
2. What is Yarn numbering System?
3. Write the types of yarn numbering system.
4. Define direct system of yarn numbering.
5. Give examples for direct system
6. Define indirect system of yarn numbering.
7. Give examples for indirect system.
8. Write the formula to convert direct to indirect system.
9. Write the formula to convert indirect to direct system.
10. What is meant by yarn diameter?
11. How will you calculate the yarn diameter?
12. What is meant by blending ratio?
13. What are the properties considered for blending?
14. What is meant by blending?
15. Write the formula to calculate no. of fibre in the cross section of yarn.
16. Write the machine sequence of blowroom line.
17. Write the formula to calculate cleaning efficiency of blowroom.
18. Write the formula to calculate production of blowroom line.
19. Write the formula to calculate waste in blowroom.
20. What is meant by Neps?
21. Write the formula to calculate production of carding.
22. Write the formula to calculate production of Draw frame.
23. Write the formula to calculate production of Ring frame.
24. Write the formula to calculate traveler speed.
25. Write the formula to calculate production of open end spinning.