

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	10 th /+2/Diploma/Graduates			
Pre-requisites (if any)				
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		Asse: M	ssment arks	Duration of
				Min	Max	Examination
		Theory	10	10	20	
TEX/2020/018	Production Calculation in Spinning	Practical	30	40	80	3 Hours
		Total	40	50	100	

TEX/2020/018- PRODUCTION CALCULATION IN SPINNING

DETAILED SYLLABUS

NoTheoryPracticalIITechnical calculation in spinning20 Hours2.1Yarn count – Definition, Yarn numbering system-direct and indirect system and its conversions20 Hours2.2Yarn diameter- calculation2.32.3Blending ratio and its properties2.42.4No. of fibres to be in the cross section and its formula2.52.5Blow room – machine sequence, cleaning efficiency & Production, Estimation of speed of various parts of mixing bale opener based on given gearing diagram Calculation pertaining to production of scutcher and cleaning efficiency of beater512.6Waste calculation, Neps removal efficiency, wire specification and its calculation20 Hours3.1Draft concept –various draft, waste percentage Vs draft20 Hours3.2Twist- S twist, Z twist& winding concepts5153.3Traveller speed, cop content & its calculation5153.4Production calculations – Carding, Draw frame, Comber, Speed frame, Ring frame, Open end spinning & winding Calculation pertaining to production and cleaning efficiency of carding machine Calculation for production of speed frame, draft and twist Calculation for production of Speed frame, draft and twist Calculation for production of Speed frame, draft and twist5153.5Doubling and fancy yarn calculations10303.5Doubling and fancy yarn calculationsTotal hours10	Unit	Modules	No. Of Hours	
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Total Theory and Practical Hours1030Total hours40	3.5	Doubling and fancy yarn calculations		
Total hours 40		Total Theory and Practical Hours	10	30
		Total hours	4	10

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.