



GOVERNMENT OF TAMILNADU
DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI

STATE PROJECT COORDINATION UNIT
(Established under Canada India Institutional Cooperation Project)
CURRICULUM

Course Name	Knitting Technology
Course Code	TEX/2020/005
Course Duration	50 Hours
Minimum Eligibility Criteria and Pre-requisites(if any)	ITT/10 th /+2/Diploma/Graduates
Course Objectives	Training module has been designed to provide the participants - To know about the basic principles of construction of knitting - To know about different types of knitting machines. - To know about various types of weft knitted and warp knitted structure and formation - Calculation of fabric production.
Course Outcomes	At the end of training, the participants will be able to - Operate the different types of knitting machines - Understand the different knit structures - Calculate the fabric production per shift
Expected Job Roles	Knitting Supervisor and assistant

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
TEX/2020/005	Knitting Technology	Theory	19	10	20	3 Hours
		Practical	31	40	80	
		Total	50	50	100	

TEX/2020/005–KNITTING TECHNOLOGY

DETAILED SYLLABUS

Unit No.	Modules	No. of Hours	
		Theory	Practical
I	WEFT KNITTING	10 Hours	
1.1	Introduction -Yarn numbering system -direct and Indirect system	5	5
1.2	Comparison between knitting and weaving - comparison between knitted and woven fabric		
1.3	Important terms-course, wales, face loop, back loop, Loop length, gauge, texture, sinker ,cam and types of needles		
II	CLASSIFICATION OF KNITTING MACHINE	10 Hours	
2.1	Plain knitting -Single jersey m/c, Rib & interlock m/c, Purl knitting m/c, Flat knitting m/c -mechanism ,merits & demerits	3	7
III	WEFT KNITTING MECHANISM	10 Hours	
3.1	Single jersey circular weft knitting machine - Knitting action of latch needle -Double jersey circular weft knitting m/c.	3	7
3.2	Flat knitting machine -passage of material -knitting action of beard needle -sinker action.		
IV	WARP KNITTING	10 Hours	
4.1	Classification of warp knitting machine -Types of warp knitting machine	3	7
4.2	Tricot machine, Raschel machine, two needles bar, Warp knitting laps -open lap &closed lap.		
4.3	Knitting action of Raschel warp knitting machine - knitting action of tricot warp knitting machine- comparison between raschel and tricot machine -comparison between weft and warp knitting.		
V	STRUCTURES & CALCULATION	10 Hours	
5.1	Definitions -Sinker loop and Needle loop	5	5
5.2	Single jersey , Rib &Interlock structures–knit, tuck & miss loops, warp & weft knitted fabric calculation		
Total Theory and Practical Hours		19	31
Total hours		50	

HARDWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS
1.	Hygrometer
2.	Microscope
3.	Bear sorter, Stelometer
4.	Beesley Balance
5.	Tensile Strength Tester
6.	Single Yarn Twist Tester
7.	Shirley Stiffness Tester
8.	Drape meter and Crease Recovery Tester
9.	Tearing and Bursting Strength Tester
10.	Rubbing Fastness Tester
11.	Abrasion and Pilling Tester
12.	Yarn evenness tester

SOFTWARE REQUIREMENT

Nil

REFERENCE WEBSITE / BOOKS

1. www.goodreads.com
2. www.nptel.com
3. www.textileleaner.com

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1	Principle of Textile Testing	J.E. Booth	Butterworth scientific landon
2	Handbook of Textile Testing and Quality Control	E.B. Groover and D.S. Hamby	Mohindersinghsejwal
3	Hand book of method of test for Cotton fibre, yarn and fabric	V. Sundaram and R.L.N. Iyengar	CTRL Mumbai

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/2020/005 - KNITTING TECHNOLOGY

(Maximum Marks : 20)

(N.B: Answer any twenty questions)

20 x 1 = 20 Marks

1. Write the system of yarn numbering.
2. What is known as weaving?
3. What is known as knitting?
4. Define the term course.
5. Define the term wales.
6. Define the term face loop.
7. Define the term back loop.
8. Define the term loop length.
9. Define the term texture.
10. Write the types of knitting.
11. Give the classification of weft knitted fabrics.
12. Give the classification of warp knitted fabrics.
13. Write the types of needles in knitting machine.
14. Write the parts of beard needle.
15. Compare and write about weft and warp knitting.
16. Compare and write about Rachel and tricot machine.
17. What is open lap?
18. What is close lap?
19. Define sinker loop.
20. Define needle loop.
21. Write the types of loops in interlock structure.
22. What is the use of sinker?
23. What is known as miss loop?
24. What is known as tuck loop?
25. Give the merits and demerits of flat knitting machine.