GOVERNMENT OF TAMILNADU

DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI

STATE PROJECT COORDINATION UNIT

(Established under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	**Textile Testing**
Course Code	TEX/2020/003
Course Duration	50 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 the basics of Textile Testing • Understanding of Testing standards • Understanding of Testing equipment used for Textile testing • Understanding of the basic principle and working of each equipment used for testing • Learning of physical, chemical &pharma testing
Course Outcomes	At the end of training, the participants will be able to • Test the fibre, yarn and fabric in international testing standards • Diagnose faults in fibre, yarn and fabric • To give the test report
Expected Job Roles	Lab Assistant in R&D section

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
TEX/2020/003	Textile Testing	Theory	15	10	20	3 Hours
		Practical	35	40	80	
		Total	50	50	100	

TEX/2020/003- TEXTILE TESTING

DETAILED SYLLABUS

Unit No.	Modules	No. of Hours	
		Theory	Practical
I	**Introduction of Testing**	**12 Hours**	
1.1	Introduction of Fibre, Yarn and Fabric	3	9
1.2	General properties of fibres, yarn and fabric		
1.3	Moisture content & moisture regain		
1.4	Wet and Dry bulb hygrometer		
1.5	Standard regain value of cotton, viscose, silk, wool, nylon and polyester		
1.6	Fibre length, fibre fineness, fibre maturity, fibre strength and trash content		
II	**Physical Testing**	**12 hours**	
2.1	Yarn count, yarn twist, yarn strength-CRE,CRL and CRT	3	9
2.2	Yarn irregularities- thick, thin, slub, neps		
2.3	Assessing yarn evenness		
2.4	Crimp tester, stiffness tester, crease recovery tester		
2.5	Abrasion, pilling and drape		
2.6	Fabric tensile strength, tearing strength and bursting strength		
2.7	Seam strength, seam slippage, stretch & recovery		
2.8	Button pulling test, bow pulling test, snap pulling test, zipper test		
III	**Chemical testing**	**14 hours**	
3.1	Grey scale, assessing procedure for fastness, colour fastness to washing, colour fastness to dry & wet rubbing, colour fastness to light.	5	9
3.2	Colour fastness to acid and alkaline perspiration, colour fastness to hot pressing.		
3.3	Colour fastness to dry cleaning.		
3.4	Colour fastness to sublimation		
3.5	Colour fastness to saliva.		
3.6	Colour fastness to ozone gas fading.		
3.7	Colour fastness to chlorine.		
3.8	Colour fastness to chlorinated pool water.		

IV	Fibre, Shrinkage &Pharma Testing	12 hours	
4.1	Fibre composition microscope view observation	4	8
4.2	Solvent testing, burning test, wash care and its importance		
4.3	Idea about care labels.		
4.4	Dimensional stability to fabric		
4.5	Dimensional stability to garment		
4.6	Appearance after washing		
4.7	Print durability test, spirality test, dry cleaning.		
4.8	Introduction about AZO test, heavy metals, formaldehyde, PVC&PVA – APEO&NPEO.		
4.9	Spray test, nickel free, phthalate content.		
	Total Theory and Practical Hours	**15**	**35**
	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	Handbook 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/2020/003 - TEXTILE TESTING

(Maximum Marks : 20)

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

1. What is known as moisture content?
2. What is known as moisture regain?
3. Define the term humidity.
4. Write any two types of hygrometer to find the humidity.
5. Give the standard regain value of cotton & viscose.
6. Give the standard regain value of wool, nylon & polyester.
7. Give the abbreviation of CRE, CRT & CRL.
8. What are the irregularities present in yarn?
9. What is the use of stiffness tester?
10. What is known as seam strength?
11. Write any two fastness test.
12. What is called as grey scale?
13. For fibre what are the views observed in microscope.
14. What is solvent testing?
15. What is known as dry cleaning?
16. What is spray test?
17. What is the use of care label?
18. What is the use of AZO test?
19. Give the abbreviation of PVC & PVA.
20. Give the abbreviation of APEO & NPEO.
21. What is the aim of burning test?
22. What is the importance of wash care label?
23. What is sublimation?
24. Define fibre length.
25. Define fibre fineness.