GOVERNMENT OF TAMILNADU

DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI

STATE PROJECT COORDINATION UNIT

(Established under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	**Shade Matching and Colouration**
Course Code	TEX/2020/009
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 water hardness and pH • Understanding of dyeing in textile field • Learning of dyeing in self and compound shade • Learning about fastness test
Course Outcomes	At the end of training, the participants will be able to • Gain knowledge in dyeing • Know how to dye a cotton fabric • Know about shade matching
Expected Job Roles	Colour matching assistant

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
TEX/2020/009	Shade Matching and Colouration	Theory	12	10	20	3 Hours
		Practical	38	40	80	
		Total	50	50	100	

TEX/2020/009–SHADE MATCHING AND COLOURATION

DETAILED SYLLABUS

Unit No.	Modules	No. of Hours	
		Theory	Practical
I	**Estimation on hardness, pH and Efficiency**	**10 Hours**	
1.1	Estimation of total hardness and pH of given water	3	7
1.2	Desizing of given cotton fabric using Enzyme desizing method and determine the starch content		
1.3	Scouring of given cotton fabric and determine the scouring loss from desized fabric		
1.4	Bleaching of given scoured cotton fabric with hydrogen Peroxide		
II	**Dyeing of cotton**	**12 Hours**	
2.1	Dyeing of cotton with Direct dyes	2	10
2.2	Dyeing of cotton with Reactive dyes (Hot and cold brand)		
2.3	Dyeing of cotton with Vinyl Sulphone reactive dyes		
2.4	Dyeing of cotton with bi-functional reactive dyes		
2.5	Dyeing of cotton with vat dyes		
2.6	Dyeing of cotton with sulphur dyes		
III	**Preparation of self and compound shades**	**20 Hours**	
3.1	Cold and vinyl sulphone reactive dyes - light, medium & dark shade	4	16
3.2	Bi-functional reactive dyes- light, medium & dark shade		
3.3	Compound shade using two different vinyl sulphone reactive colours in different proportion		
3.4	Compound shade using two different bi-functional reactive dye colour in different combination		
3.5	Compound shade using 3 different vinyl sulphone reactive colours in 60/20/20 , 40/40/20 & 30/30/40 proportions		
3.6	Compound shade using 3 different bi-functional colours in 60/20/20 , 40/40/20 & 30/30/40		
3.7	Matching of compound shade using vinyl sulphone reactive dyes for the given sample		
3.8	Matching of compound shade bi-functional reactive dyes for the given sample		
IV	**Fastness testing**	**08 Hours**	
4.1	Wet and dry rubbing fastness test of dyed material	3	5
4.2	Washing fastness test for dyed material (any one test from ISO 1 to 5)		
	Total Theory and Practical Hours	**12**	**38**
	Total hours	**50**	

HARDWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS
1.	Dye Bath
2.	Glass Rod
3.	Electronic Balance
4.	Crock Meter
5.	Laundrometer

SOFTWARE REQUIREMENT

Nil

REFERENCE WEBSITE / BOOKS

1. www.textileebook.com
2. www.nptel.com
3. www.archive.org

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1	Dyeing and Chemical Technology of Fibre	Trotman E.R	Charless Griffin Co LTD.,
2	Hand Book Of Textile Processing	R.S. Bhagwat	Colour Publications
3	Technology of Textile Processing Vol.3 Technology of Bleaching	Shenai V.A.	Shevak Publications 306 Shri Hanuman Industrial Estate Gousmbekar Road,Wadala Mumbai – 37

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/2020/009 - SHADE MATCHING AND COLOURATION

(Maximum Marks : 20)

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

1. What is mean by hardness of water?
2. Define the term PH.
3. What is known as desizing?
4. What is meant by enzyme desizing?
5. How will you determine the scouring loss from desized fabric?
6. What is bleaching?
7. What are the different types of bleaching?
8. What is the universal bleaching agent?
9. What are the different types of dyes used for cotton fabric?
10. Which dyes are used for polyester fabric dyeing?
11. What are the different types of reactive dyes?
12. What is meant by self shade?
13. What do you mean by compound shade?
14. What is meant by matching of compound shades?
15. What is meant by fastness?
16. What are the fastness tests available for textile material?
17. What is meant by rubbing fastness?
18. What is the range for rubbing fastness scale?
19. What is the use of vat dyes?
20. What is the range for washing fastness scale?
21. What is meant by light shade?
22. What is meant by medium shade?
23. What is meant by dark shade?
24. What are the disadvantages of direct dyes?
25. What are the advantages of vat dyes?