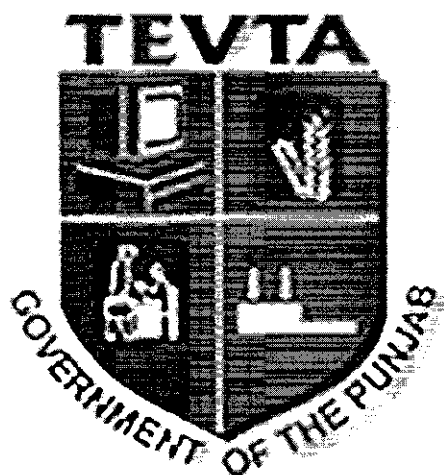


GOVERNMENT OF THE PUNJAB
**TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY**



CURRICULUM FOR
CARPET YARN DYEING
(3 – Months Course)

Evaluated November, 2015

CURRICULUM SECTION
ACADEMICS DEPARTMENT

96-H, GULBERG-II, LAHORE

Ph # 042-99263055-9, 99263064

gm.acad@tevta.gop.pk, manager.cur@tevta.gop.pk

Date: 4-12-15

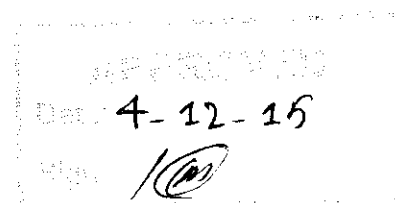


TRAINING OBJECTIVES:

The training program is meant to meet the need of the job market. It is labor intensive and export oriented, doesn't involve any complicated machinery as the industry is mainly based in rural areas. Therefore, such trainings / short courses will reduce unemployment and poverty in the society.

CURRICULUM SALIENTS:


Entry Level:	Matric
Total duration of course:	3-Months
Total Training Hours:	400 hours
Weekly Hours:	40 hours per week
Training Methodology:	Practical 80%
	Theory 20%
Medium of instruction:	Urdu / English



SKILL COMPETENCY DETAILS:

On successful completion of this course, the trainee would be able to:

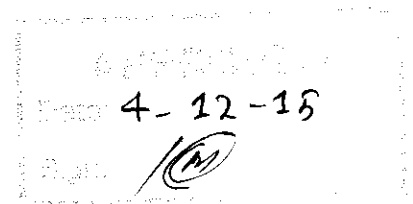
- Carry out the process of dyeing on different fibers proficiently.
- Demonstrate the usage of different chemicals during dyeing.
- Apply the heat treatment process.
- Maintain uniformity of shades.

APPROVED
Date: 4-12-15
Sign: 

KNOWLEDGE PROFICIENCY DETAILS:


On successful completion of this course, the trainee would be able to:

- Know different fibers such as vegetables, animals and synthetic for dyeing.
- Identify different kinds of dyes for different materials.
- Understand the use of different chemicals during dyeing.
- Familiarize with heat treatment process.
- Describe the working of machines for this process.




CURRICULUM DELIVERY STRUCTURE

Area	Curriculum Delivery	Revision	Final Test	Total
W E E K	1 – 10	11	12	12
	10	1	1	12

4-12-15


SCHEME OF STUDIES**Carpet Yarn Dyeing
(3 - Months Course)**

Sr. No.	Main Topics	Theory Hrs.	Practical Hrs.	Total Hrs.
1.	Introduction to Fibers (Natural & Synthetic)	10	24	34
2.	Introduction to Dyes and Dyeing Mechanism	15	80	95
3.	Types of Dyes	10	60	70
4.	Types of Industrial Process (Exhaust, Continuous etc.)	10	20	30
5.	Application Method of Dyes	15	80	95
6.	Introduction to Different Machines Used for Dyeing	10	20	30
7.	Concept of Shade Variation	10	24	34
8.	Work Ethics	-	12	12
Total		80	320	400

Date: 4-12-15
 Sign: 

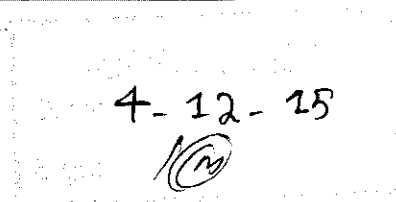
DETAIL OF COURSE CONTENTS**Carpet Yarn Dyeing
(3 – Months Course)**

Sr. No.	Detail of Topic	Theory Hrs.	Practical Hrs.
1.	Introduction to Fibers (Natural & Synthetic) 1.1 Introduction to different types of fibers such as vegetables, animals and synthetic along with their sources 1.2 Tests used for identification of fibers	10	24
2.	Introduction to dyes and dyeing mechanism 2.1 Use of different kinds of dyes for different Materials 2.2 Dyeing mechanism 2.3 Dyeing profile 2.4 Dye fixation mechanism	15	80
3.	Types of Dyes 3.1 Reactive dye 3.2 Disperse dye 3.3 Vat dyes 3.4 Acid dyes	10	60
4.	Types of Industrial Process 4.1 Exhaust Process 4.2 Continuous process 4.3 Semi continuous process	10	20
5.	Application Method of Dyes 5.1 Reactive dyeing process along with auxiliaries 5.2 Disperse dyeing process along with auxiliaries 5.3 Vat dyeing process along with auxiliaries 5.4 Acid dyeing process along with auxiliaries 5.5 Use of different chemicals during dyeing	15	80
6.	Introduction to Different Machines Used for Dyeing 6.1 Package dyeing 6.2 Pot dyeing 6.3 Hank dyeing 6.4 Heat treatment to maintain uniformity of shades	10	20
7.	Concept of Shade Variation 7.1 Understanding the working mechanism of light box 7.2 Metameric effects and usage of different light sources in light box like D60, TL84, UV light, etc 7.3 Steps to evaluate shade variations 7.4 Shade matching parameters	10	24
8.	Work Ethics	-	12
Total		80	320

LIST OF PRACTICALS

Carpet Yarn Dyeing (3 – Months Course)

1. To dye cellulosic material using reactive dye.
2. To dye synthetic material using disperse dyes.
3. To dye cellulosic material using Vat dyes.
4. To dye proteinic material using Acid dyes.
5. Color physics and concept of color matching by using dyeing parameters.
6. Evaluation tests for evaluating dyeing material.
 - i. Color fastness to light.
 - ii. Color fastness to crocking (Rubbing).
 - iii. Color fastness to perspiration.
 - iv. Color fastness to washing.
7. Application of vegetable dyes.



LIST OF LABS.

- Chemical Laboratory with under mentioned requirements.
- Processing Laboratory with under mentioned requirements.

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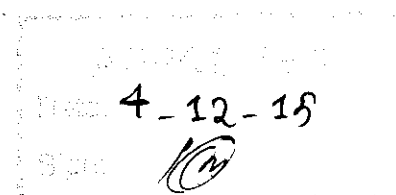
**LIST OF MACHINERY/EQUIPMENT, TOOLS, FURNITURE,
ACCESSORIES ETC.**

**Carpet Yarn Dyeing
(3 - Months Course)**

For a class of 25 Students

Name of Trade	Carpet Yarn Dyeing
Duration of Course	03-Months

Sr. No.	Nomenclature of Machinery / Equipment, Tools, Furniture, Accessories etc.	Quantity (Nos.)
1.	Grey scale boxes (Light box)	02
2.	Mini Boilers	02
3.	Pot dyeing machines or Package dyeing machines	01
4.	Gas Burners	05
5.	Steel Tubs	03
6.	Beakers	20
7.	Flasks	10
8.	Pipettes	10
9.	PH Scales	5
10.	Burette	10
11.	Stands	10
12.	Gloves & masks	25
13.	Stirrer	20
14.	CO ₂ cylinders	02
15.	Lab coats	25



LIST OF CONSUMABLE ITEMS

Carpet Yarn Dyeing
(3 - Months Course)

For a class of 25 Students

Name of Trade	Carpet Yarn Dyeing
Duration of Course	03-Months

Sr. No.	Nomenclature of Consumable Items	Quantity (Nos.)
1.	Reactive dye	1kg
2.	Acid dye	1kg
3.	Disperse dye	1kg
4.	Vat dye	1kg
5.	PH scale probe	2
6.	Alkali, Acid, Glouber salt, Carriers, Buffering agents, Leveling agents, Reducing agents, Anti foaming agents, Sequestering agents, Wetting agents, Detergents, Oxidizing agents	3 kg each
7.	Yarn (Cellulosic, Wool, Silk, Polyester, Nylon)	1 bundle each

MINIMUM QUALIFICATION OF TEACHER

B.Sc. Textile Engineering with 3 Years' Experience in Wool / Woolen Yarn

Dyeing and other materials

OR

Diploma in Wet Processing from Recognized Institute with 5 Years' Experience in

Carpet Manufacturing and Designing

Note: One assistant with practical experience of 3-5 years is required to conduct practicals.

REFERENCE BOOKS

1. The Chemistry of Color Application by R.M. Mather
2. Practical Dyeing Vol-1,2,3 by Jones Park
3. Color for Textile by Society of Dyes and Colorist

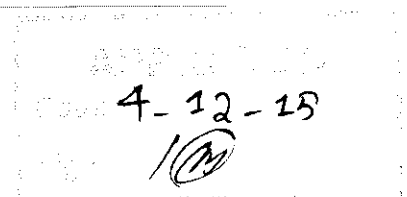
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(Signature)

EMPLOYABILITY OF PASS-OUTS

The pass outs of this course may find job / employment opportunities in the following areas / sectors:

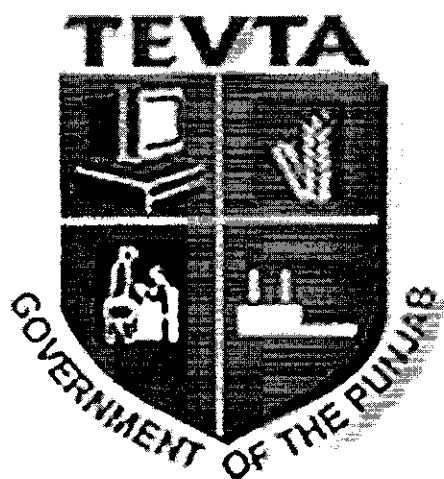
- Private sector as skilled yarn dyer
- Carpet Manufacturing Institutes like Punjab Small Industries Corporation
- Self-employment



CURRICULUM EVALUATION COMMITTEE

Mr. Razaqat Ali Sr. Manager (R & D), Haizum Hi Tech Textiles, 15-13 Eden Palace Villas, Raiwind Road, Lahore.	Convener
Mr. Umair Mukhtar Assistant Professor, Department of Textile & Design, University of Management & Technology, Lahore.	Member
Mr. Saif Ullah Sales and Marketing Manager, Printex Pvt. Ltd., 549-N, Sabza Zar, Lahore.	Member

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