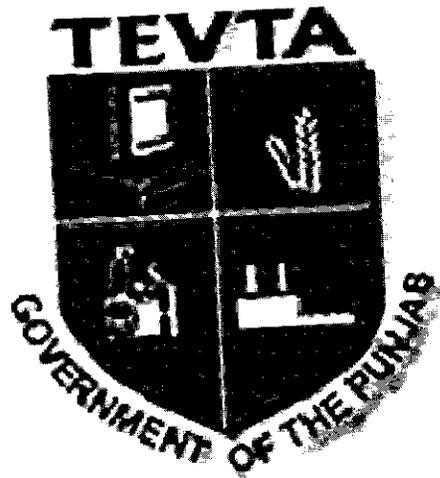


GOVERNMENT OF THE PUNJAB  
TECHNICAL EDUCATION & VOCATIONAL  
TRAINING AUTHORITY



CURRICULUM FOR  
**Fabric Dyeing Expert**

(6 – Months Course)

Evaluated November, 2015

CURRICULUM SECTION  
**ACADEMICS DEPARTMENT**

96-H, GULBERG-II, LAHORE

Ph # 042-99263055-9, 99263064

[gm.acad@tevta.gop.pk](mailto:gm.acad@tevta.gop.pk), [manager.cur@tevta.gop.pk](mailto:manager.cur@tevta.gop.pk)

19-11-2015

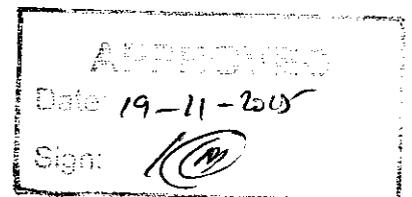
## **TRAINING OBJECTIVES**

This course is very important for value addition in textile sector. Trained workforce is rarely available in textile sector for this particular trade. The major reason for targeting this area is that it will create a pool in the textile sector and will be helpful to bring trickledown effect for new entrants. In order to reduce unemployment, the curriculum is designed to impart the technical knowledge and skills to those who are literate. Ultimately this would helpful in

- Alleviating poverty
- Generate skilled resource
- Source of income
- Addition in more revenue.

## **CURRICULUM SALIENTS**

Name of course	:	Fabric Dyeing Expert
Entry Level	:	Matric
Duration of Course	:	6 – Months
Total Training Hrs	:	800 Hours
		40 Hours per week
		6 days per week
		7 Hours daily except Friday 5 Hours
Training Methodology:	Practical	80%
	Theory	20%
Medium of Instruction:	Urdu/English	



**SKILL COMPETENCY DETAILS**

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

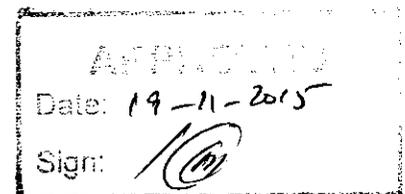
1. All Dyeing Machine Operations
2. Standard Process Profiles Execution
3. Process Parameters at all dyeing stages
4. Application of Safety Rules

AS/As G-20  
Date 19-11-2015  
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**KNOWLEDGE PROFICIENCY DETAILS**

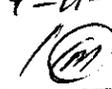
On successful completion of this course, the trainee should be able to:-

1. Use of chemicals with respect to fabric
2. Dyestuff Chemistry
3. Safety precautions
4. pH,
5. Specific gravity
6. Water hardness
7. All critical process parameters
8. Alkali dosing curves



**CURRICULUM DELIVERY STRUCTURE**

	<b>Curriculum Delivery</b>	<b>Make Up Session</b>	<b>Revision</b>	<b>Final Test</b>	<b>Total</b>
<b>WEEK</b>	1-10	11	12	13	13
	10	1	1	1	

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**SCHEME OF STUDIES**  
**Fabric Dyeing Expert Course**  
**(6-Months)**

S.No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Introduction to Textiles	20	0	20
2.	Cotton Bleaching & Scouring	5	40	45
3.	Dyeing Machinery	20	150	170
4.	Dyeing Of Natural & Man Made Fibers	20	180	200
5.	Reactive & Disperse Dyes	30	70	100
6.	Recipe making	5	90	95
7.	Process Profiles	20	90	110
8.	Functional English	20	20	40
9.	Work Ethics	20	0	20
<b>Total</b>		<b>160</b>	<b>670</b>	<b>830</b>

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**Detail of Course Contents**  
**Fabric Dyeing Expert Course**  
**(6-Months)**

1.	<p><b>1.1 Introduction to Textiles</b>  1.1.1 Spinning  1.1.2 Weaving/Knitting  1.1.3 Textile Chemistry</p> <p><b>1.2 Theory of Dyeing</b>  1.2.1 History of Dyeing  1.2.2 Principles of Dyeing  1.2.2.1 Simple Dyeing  1.2.2.2 Other Dyeing Methods  1.2.2.3 Difficulties of Dyeing of Acetate and Synthetic Fibers</p> <p><b>1.3 The Preparation and Dyeing of the Neutral Cellulosic Fibers</b>  1.3.1 Cotton Fibre  1.3.2 Preparation for Dyeing  1.3.2.1 Bleaching  1.3.3 Dyeing  1.3.3.1 Application of Basic Cotton Dyes  1.3.3.2 Application of Direct Dyes  1.3.3.3 Application of Reactive dyes  1.3.3.3.1 Batchwise Dyeing  1.3.3.3.2 Continuous Dyeing  1.3.3.3.3 The Procion Resin Process  1.3.3.4 Application of Sulphur Dyes  1.3.3.4.1 After treatments of Sulphur Dyeings</p>	20	0
2.	<p><b>Cotton Bleaching &amp; Scouring</b>  2.1 Scouring &amp; Bleaching methods  2.1.1 Recipe and critical steps in Bleaching</p> <p>2.2 The Preparation and Dyeing of Polyester Fibres  2.2.1 Polyester Fibre  2.2.2 Preparation  2.2.2.1 Heat Setting  2.2.2.2 Bleaching</p>	5	40
3.	<p><b>Dyeing Machinery</b>  3.1 Jet  3.2 Jigger  3.3 Winches</p>	20	150
4.	<p><b>Dyeing Of Natural &amp; Man Made Fibers</b>  4.1 Reactive Dyeing  4.2 Disperse Dyeing</p>	20	180
5.	<p><b>Reactive &amp; Disperse Dyes</b>  5.1 Chemistry and Classification of Reactive Dyes</p>	30	70

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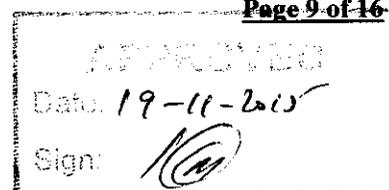
**Fabric Dyeing Expert Course (6- Months)**

	<b>5.2 Chemistry of Disperse Dyes</b>		
<b>6.</b>	<b>Recipe Making</b> 6.1 Chemical Handling 6.2 Compatibility of Dyes 6.3 Working on Spectrophotometer 6.4 Recipe Prediction	5	90
<b>7.</b>	<b>Process Profiles</b> 7.1 Selection of Profiles with respect to Dyes 7.2 Implementation of profiles on Machine	20	90
<b>8.</b>	<b>Functional English</b>	20	20
<b>9.</b>	<b>Work Ethics</b>	20	0
<b>Total</b>			

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**LIST OF PRACTICALS**

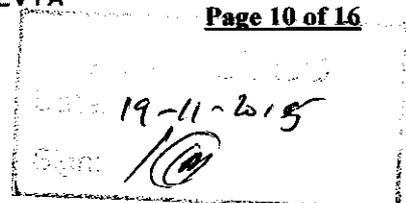
1. Scouring & Bleaching methods
2. Recipe and critical steps in Bleaching
3. The preparation and Dyeing of Polyester Fibres
4. Polyester Fibre
5. Preparation
6. Heat Setting
7. Beaching
8. Reactive Dyeing
9. Disperse Dyeing
10. Dye synthesis and analysis
11. Recipe formulation and evaluation
12. Shade matching
13. Process profiling on dyeing machines



**LIST OF LABS**

**Fabric Dyeing Expert Course  
(6-Months)**

1. Pretreatment lab
2. Process development lab
3. Dye synthesis and analysis lab
4. Dyeing and finishing lab



**LIST OF TOOLS AND EQUIPMENT**  
**FOR CLASS OF 25**

Name of Trade	Fabric Dyeing-Expert
Duration of Course	(6-Months)

S.No	Nomenclature of equipments /Tools	Quantity
1	Sclavos	1
2	Fongs	1
3	Thies	1
4	TSI Turbo jet	1
5	Bleach star	1
6	Gaston County	1
7	Sample Winch	1
8	Fabric Turning Machine	1
9	Safety Glasses	25
10	Gloves & Shoes	25 Each

**FURNITURE**

S.No	Name of Article	Quantity
1.	Wooden stool (for students)	25
2.	Chair for teacher	01
3.	White board (3 ½ x 5ft) with stand	01
4.	Wooden Almirah (4 x 7 ft)	04
5.	Instructor table with 2 drawers	01

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**LIST OF CONSUMABLE MATERIALS**

**FOR CLASS OF 25**

**Fabric Dyeing Expert Course  
(6-Months)**

List of Consumable Materials

S.No	Material	Quantity
1	Dyes	As per requirement
2	Fabric	As per requirement

**MINIMUM QUALIFICATION OF INSTRUCTOR**

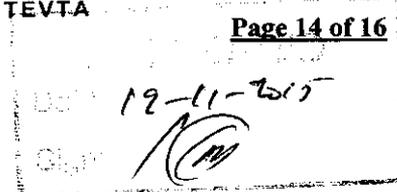
- BSc Textile / BS Textile Engineering with 5 years in same field.

OR

- Three Years Diploma Holder in Fabric Dyeing with 8 years of practical experience

**REFERENCE BOOKS**

1. Practical Dyeing by James Park and John Shore *Published by the Society of Dyers and Colourists*
2. Cellulosic Dyeing by John Shore, Society for Dyers and Colourists
3. Basic principles of Textile Coloration (Arthur D Broadbent)
4. Finishing (Pietro Bellini, Ferruccio Bonetti, Ester Franzetti, giuseppe Rosace, Sergio Vago)
5. Textile processing with enzymes (A. Cavaco-Paulo and G. M. Gübitz)
6. Knitting Technology: A comprehensive handbook and practical guide by David J. Spencer
7. Textile Design and Colour by Willian Watson



**EMPLOYABILITY OF PASS OUTS**

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

1. Dyeing Production Department
2. Any Textile Manufacturing firm as Dyeing Master

**Curriculum Evaluation Committee**

1. **Dr. Nabeel Amin,** **Convener**  
Associate Professor,  
School of Textile and Design, University of  
Management and Technology,  
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2. **Mr. Malik Razaqat Ali,** **Member**  
Sr. Manager (R & D)  
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Raiwind Road Lahore
  
3. **Mr. Ali Ashraf,** **Member**  
Sr. Assist Manager (Product Development),  
US Apparel (Pvt.) Ltd. Unit # 3,  
C/O Al-Hafiz Karyana & Genral Store Main Street,  
New Islam pura,  
Toba Tek Singh.

