

# **Curriculum**

**For**

**Certificate in Textile Wet Processing**

**(1 year)**

**Code: VI87S015**

**(2013)**

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## Scheme of Studies

### Textile Wet Processing

Sr #	Modules	Theory Hours	Practical Hours	Total Hours
1	Selection of Grey Fabric	14	46	52
2	Grey Fabric Inspection	14	46	60
3	Singeing	22	92	114
4	Desizing	22	92	114
5	Scouring	22	92	114
6	Bleaching	22	92	114
7	Mercerizing	22	92	114
8	Dyeing	46	172	210
9	Printing	32	140	180
10	Finishing	32	140	180
11	Final Inspection	22	92	114
12	Adopt Safety Measures	14	46	60
13	Communication Skills	14	46	60
14	Develop Professionalism	22	92	114
		<b>320</b>	<b>1280</b>	<b>1600</b>

## **Introduction**

The process in which the grey textile material is treated with dyes and chemicals in such a way to enhance its aesthetic, comfort and value.

## **Name of course**

Textile Wet Processing

## **Overall objective of course**

- a. Getting basic knowledge of Textile Wet Processing
- b. Acquiring proficiencies in basic textile wet processing techniques and methods
- c. Becoming able to get a skilled job in textile processing units.

## **Competencies gained after completion of course**

1. Become aware of the basic communication and presentation skills along with becoming conscious about personal, co-workers and workplace safety
2. Get acquaintance with the workplace safety measures
3. Development of professionalism in the trainee
4. Trainee will enable to select the desired grey fabric
5. Ability to desize, Scour, Bleach, Mercerize, Dye, Print or Finish the fabric
6. Ability to perform tasks according to SOPs (Standard Operating Procedures)

## **Job opportunities available immediately and in the future**

1. Textile processing Mills
2. Warehouses
3. Textile Chemicals marketing
4. Textile Labs
5. Merchandising and buying houses

- **Trainee entry level**

Matric

Clearance certificate of Colour Blindness Test

- **Minimum qualification of trainer**

B.Sc. Textile Engineer (Textile Chemistry) or Equivalent

- **Medium of Instruction i.e. language of instruction**

Urdu

## **Sequence of the modules**

Module # 1

Module # 2

Module # 3

Module # 4

Module # 5

Module # 6

## **Timeframe of assessment (recommendation)**

Duration: 1 Year

Total Hour: 1600

Theory Hours: 320

Practical Hours: 1280

## Summary

Module Title	Learning Units	Theory Days/hours	Workplace days/hours	Timeframe of Modules
<b>Module 1: Selection of Grey Fabric</b>	LU1:Collection of sample LU2:Selection of Sample LU3:Deliver Sample to Lab LU4:Placing of Order to Supplier LU5:Receiving of material	<b>14 hours</b>	<b>46 hours</b>	<b>Completing Module #1</b>
<b>Module 2: Grey Fabric Inspection</b>	LU1: Carry out surface inspection LU2: Carry out grading LU3: Dispatch fabric to lab LU4: Carry out quantitative analysis	<b>14 hours</b>	<b>46 hours</b>	<b>Completing Module #1 first</b>
<b>Module 3: Singeing</b>	LU1: Introduction to Singeing LU2: Introduction to Singeing Machine LU3:Load fabric to Machine LU4: Adjust flame intensity LU5: Adjust speed of fabric LU6: Adjust distance between flame & fabric LU7: Adjust angle of flame LU8: Singed Fabric Inspection	<b>22 hours</b>	<b>92 hours</b>	<b>Completing Module #1, Module #2</b>
<b>Module 4: Desizing</b>	LU1: Introduction to Desizing LU2: Introduction to Desizing Machine Prepare desizing recipe LU3: Adjust parameters of Machine LU4: Set desizing rotation time of batch LU5: Carry out washing off/ Neutralization LU6: Desized Fabric Inspection	<b>22 hours</b>	<b>92 hours</b>	<b>Completing module #1, Module #2 Module #3</b>
<b>Module 5: Scouring</b>	LU1: Introduction to Scouring LU2: Introduction to Scouring Machine LU3:Prepare Scouring recipe LU4: Adjust parameters of Machine LU5: Carry out washing off LU6: Scoured Fabric Inspection	<b>22 hours</b>	<b>92 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4</b>
	LU1: Introduction to Bleaching LU2: Introduction to Bleaching LU3:Prepare bleaching recipe			<b>Completing</b>

<b>Module 6: Bleaching</b>	LU4: Adjust parameters of Machine LU5: Setting steam parameters LU6: Carry out washing off LU7: Bleached fabric inspection	<b>22 hours</b>	<b>92 hours</b>	<b>module #1, Module #2 Module #3 Module #4 Module #5</b>
<b>Module 7: Mercerizing</b>	LU1: Introduction to Mercerizing LU2: Introduction to mercerizing Machine LU3: Prepare mercerizing recipe LU4: Adjust parameters of Machine LU5: Carry out washing off and neutralization of fabric LU6: Carry out drying of fabric LU7: Mercerized fabric inspection	<b>22 hours</b>	<b>92 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>
<b>Module 8: Dyeing</b>	LU1: Introduction to Dyes and Dyeing LU2: Introduction to dyeing Machine's LU3: Prepare dyeing recipe LU4: Adjust parameters of Machine LU4: Carry out padding off LU4: Dyeing LU5: Carry out washing off LU7: Carry out drying of fabric LU8: Dyed Fabric inspection	<b>46 hours</b>	<b>172 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>
<b>Module 9: Printing</b>	LU1: Introduction to Engraving and Printing LU2: Introduction to Printing Machine LU3: Prepare printing recipe LU2: Adjust Machine parameters LU3: Printed Fabric inspection	<b>32 hours</b>	<b>140 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>
<b>Module 10: Finishing</b>	LU1: Introduction to Finishing LU2: Introduction to Finishing Machine's LU3: Prepare Finishing recipe LU4: Carry out padding off LU5: Carry out finishing on stenter LU6: Carry out sanforizing	<b>32 hours</b>	<b>140 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>



	LU7: Carry out calendering LU8: Finished Fabric Inspection			
<b>Module 11: Final Inspection</b>	LU1: Carry out surface inspection LU2: Carry out color inspection LU3: Marking LU4: Grading LU5: Packing as per grading LU6: Dispatch end product LU7: Surface inspection and mending	<b>22 hours</b>	<b>92 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>
<b>Module 12: Adopt Safety measures</b>	LU1: Apply Personal Safety LU2: Apply workplace safety LU3: Apply safety for tools and Equipment	<b>14 hours</b>	<b>46 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>
<b>Module 13: Communicate Skills</b>	LU1: Communicate with co-workers LU2: Communicate with customer/ other departments LU3: Communicate with supervisor LU4:	<b>14 hours</b>	<b>46 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>
<b>Module 14: Develop professionalism</b>	LU1: Participation in internship	<b>22 hours</b>	<b>92 hours</b>	<b>Completing module #1, Module #2 Module #3 Module #4 Module #5 Module #6</b>

# Curriculum Contents

**Module: 1 Title..... Selection of Grey Fabric .....**

**Objective of the Module...** Making Trainee able to select the required fabric quality....

**Duration.....60 hours.....** Theory Hours.....14..... Practical Hours.....46.....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1. Collection of sample	Trainee will get acquaintance with the types of yarns and fabrics and the blend ratios	<p><b>Knowledge of:</b> Different types of yarns, Different kinds of fabrics, Required fabric characteristics</p> <p><b>Ability to:</b> Collect the sample from different sources,</p>	4 hours	8 hours	Different Fabric samples	Class/Workplace
2. Selection of Sample	Trainee will get acquaintance with the procedure of selecting the required fabric from different types of fabrics.	<p><b>Knowledge of:</b> Required fabric type and properties, Source of fabric, Fabric quality</p> <p><b>Ability to:</b> Judge the desired fabric type, Select the required fabric</p>	4 hours	8 hours	GSM Cutter, Ends, picks/inch counter, Magnifying Glass,needle,measuring tape	Class/workplace
3. Deliver Sample to Lab	Trainee will get acquaintance with the standard operating procedures for delivering	<p><b>Knowledge of:</b> Standard operating procedures to follow, Basic requirements of the fabric</p>	4 hours	8 hours	Delivering trolley/Container	Workplace

	fabric to Lab.	for delivering it to lab for detailed analysis <b>Ability to:</b> Select the desired fabric and deliver it to the Lab.				
4. Placing of Order to Supplier	Trainee will get acquaintance with the basic needs for placing order to the supplier.	<b>Knowledge of:</b> The procedure to finalize the supplier, The standard operating procedure for placing of order to the supplier for bulk purchase <b>Ability to:</b> Finalize the required property fabric and placing order to the supplier.	4 hours	8 hours		Class/workplace
5. Receiving of material	Trainee will get acquaintance with the procedure of receiving the material from the supplier	<b>Knowledge of:</b> SOPs and formalities for receiving of fabric from the supplier. <b>Ability to:</b> Receive the desired quality material from the supplier and assuring the required characteristics.	4 hours	8 hours		Workplace

**Module# 2 Title..... Grey Fabric Inspection .....**

**Objective of the Module:**...Making Trainee able to inspect the quality of the fabric and its fault.....

**Duration...60 hours**..... Theory Hours.....14..... Practical Hours.....46 .....

<b>Learning Unit</b>	<b>Learning Outcome</b>	<b>Learning Element</b>	<b>Theory Hours</b>	<b>Practical Hours</b>	<b>Materials Required</b>	<b>Learning Place</b>
1. Carry out surface inspection	Trainee will get acquaintance with the standard operating procedures to follow for carrying out surface inspection of fabric.	<b>Knowledge of:</b> Carrying out surface inspection, Basic surface tests available for checking the quality of fabric. <b>Ability to:</b> Perform the surface inspection according to the SOPs.	3 hours	12 hours	GSM Cutter, Ends, picks/inch counter, Magnifying Glass, needle	Class/workplace
2. Carry out quantitative analysis	Trainee will get acquaintance with the standard operating procedures to follow for carrying out quantitative analysis of the fabric sample.	<b>Knowledge of:</b> Basic quantitative analysis tests and methods for detailed analysis of the given fabric. <b>Ability to:</b> carrying out quantitative analysis of the fabric sample according to the SOPs.	3hours	12 hours	GSM Cutter, Ends, picks/inch counter, Magnifying Glass, chemicals	Class/workplace
3. Despatch fabric to lab	Trainee will get acquaintance with the standard operating procedures to follow for dispatching fabric to Lab.	<b>Knowledge of:</b> Selecting Desired fabric sample and delivering it to the Lab. <b>Ability to:</b> Select the desired fabric sample for	3 hours	12 hours	Fabric trolley	workplace

		detailed analysis.				
4. Carry out grading	Trainee will get acquaintance with the standard operating procedures to follow for carrying out the grading of different types of Fabrics.	<b>Knowledge of:</b> Basic knowledge of the fabrics grading, <b>Ability to:</b> Grade the different types of fabrics following the SOPs for fabric grading.	3 hours	12 hours	Fabric samples of different qualities	Class/workplace

**Module: 3 Title..... Singeing .....**

**Objective of the Module**.....Enabling Trainee to perform Singeing.....

**Duration...114 hours**..... Theory Hours...22..... Practical Hours.....92.....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1.Introduction to Singeing	Trainee will get introduction of Singeing its types, faults and remedies	<b>Knowledge of:</b> Singeing process, its types, faults and remedies <b>Ability to:</b> Perform singeing process efficiently Check singeing faults and remedies	12 hours	2 hours	Projector	Class/Workplace
2.Introduction to Singeing Machine	Trainee will get introduction of Singeing Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in	2 hours	10 hours	Singeing Machine	Workplace

		case of emergency,				
3. Load fabric to Machine	Trainee will get acquaintance with the SOPs for loading fabric to Machine.	<b>Knowledge of:</b> Machine working, Fabric quality, Warm up time of Machine, Standard operating procedures for loading of fabric to Machine <b>Ability to:</b> Handle Machine in case of emergency, Select the required lot of fabric for loading in Machine	2 hours	8 hours	Fabric Lots, Singeing Machine	Workplace
4. Adjust flame intensity	Trainee will get acquaintance with the types of flames and adjusting flame height with respect to the fabric quality	<b>Knowledge of:</b> Machine working, Fabric quality, Warm up time of Machine, Standard operating procedures for loading of fabric to Machine Flame intensity setting with respect to the quality of fabric <b>Ability to:</b> Handle	2 hours	12 hours	Thermometer, Safety Goggles, Face mask	workplace

		Machine in case of emergency, Select the required fabric lot and adjust the flame intensity keeping in mind the weave				
5. Adjust speed of fabric	Trainee will get acquaintance with the Machine parameters and setting of fabric speed with respect to the flame intensity and fabric quality	<b>Knowledge of:</b> MACHINE parameters, SOPs for operating the Machine, Fabric Quality <b>Ability to:</b> Control the speed of the fabric, Adjusting of flame height	2 hours	8 hours	Safety Gloves, Stopwatch, Tachometer, Tension meter	Workplace
6. Adjust distance between flame & fabric	Trainee will get acquaintance with the types of flames and adjusting flame height with respect to the fabric quality and adjustment of distance between fabric and flame.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Fabric Quality Height of flame, Flame intensity <b>Ability to:</b> Control the speed of the fabric, Adjustment of flame height, Adjust the distance	2 hours	10 hours	Safety Goggles	Class/workplace

		between the fabric and flame				
7. Adjust angle of flame	Trainee will get acquaintance with the types of flames and adjustment of flame angle with respect to the fabric quality	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Fabric Quality <b>Ability to:</b> Control the speed of the fabric, Adjusting of flame height	2 hours	8 hours	Angle measurer	Workplace
8. Start singeing Machine	Trainee will get acquaintance with the SOPs to follow before starting the Machine.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Fabric Quality <b>Ability to:</b> Operate the Machine following all SOPs	2 hours	8 hours		Workplace
9. Singed fabric inspection		<b>Knowledge of:</b> Singeing, singeing faults their remedies, Quality of the fabric <b>Ability to:</b> Inspect the fabric according to the SOPs	4 hours	10 hours	Microscope. Tape , Inspection Frame	Class/Workplace



**Module: 4 Title..... Desizing .....**

**Objective of the Module...** Enabling Trainee to perform Desizing.....

**Duration.....114 hours.....** Theory Hours.....22..... Practical Hours.....92.....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1.Introduction to Desizing	Trainee will get introduction of Desizing its types, faults and remedies	<b>Knowledge of:</b> Desizing process, its types, faults and remedies <b>Ability to:</b> Perform Desizing process efficiently Check Desizing faults and remedies	14 hours	4 hours	Projector	Class/Workplace
2.Introduction to Desizing Machine	Trainee will get introduction of Desizing Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in case of emergency,	4 hours	12 hours	Machine, Fabric Lot	Workplace
3. Prepare desizing recipe	Trainee will get acquaintance with the types of sizes and the desizing recipes specific to each sized fabric.	<b>Knowledge of:</b> Sizing material, Desizing types, Desizing chemicals, Temperature requirement <b>Ability to:</b> Use proper desizing technique with respect to the type of size on the fabric.	4 hours	12 hours	Desizing Chemicals, Thermometer, pH strips	Workplace
4. Adjust parameters of Machine	Trainee will get acquaintance with the types of sizes and the desizing machine parameters	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Fabric Quality <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	12 hours	Desizing Machine, Fabric Lot	workplace
5. Set desizing rotation time of batch	Trainee will get acquaintance with the types of	<b>Knowledge of:</b> Rotating roller time, SOPs for operating the Machine, Fabric Quality	4 hours	12 hours	Rotating Batcher	Workplace

	sizes and time required for desizing.	<b>Ability to:</b> Operate the Machine following all SOPs				
6. Carry out washing off/ Neutralization	Trainee will get acquaintance with the washing process and the neutralization process.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Fabric Quality, Neutralization/Washing process <b>Ability to:</b> Operate the Machine following all SOPs, Use the exact quantity of chemicals for neutralization/Washing	4 hours	12 hours	Chemicals for neutralization	Class/workplace
7. Desized fabric inspection		<b>Knowledge of:</b> Desizing, its kinds, desizing faults their remedies, Fabric Quality <b>Ability to:</b> Inspect the fabric according to the SOPs	4 hours	12 hours	Tegwa Scale, KI Solution, Ph strips, Inspection frame	Class/Workplace

**Module: 5 Title..... Scouring .....**

Objective of the Module..... Enabling Trainee to perform Scouring .....

Duration...114 hours..... Theory Hours...22.... Practical Hours.....92.....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1.Introduction to Scouring	Trainee will get introduction of Scouring its types, faults and remedies	<b>Knowledge of:</b> Scouring process, its types, faults and remedies <b>Ability to:</b> Perform Scouring process efficiently Check Scouring faults and remedies	16 hours	3 hours	Projector	Class/Workplace
2.Introduction to Scouring Machine	Trainee will get introduction of Scouring Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in case of emergency,	3 hours	16 hours	Machine	Workplace
3. Prepare Scouring recipe	Trainee will get acquaintance with the scouring process and the recipe required.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric, Scouring recipe <b>Ability to:</b> Operate the Machine following all	3 hours	16 hours	Chemicals for scouring, trolley	Workplace

		SOPs, Accurate quantity of each chemical				
4. Adjust parameters of Machine	Trainee will get acquaintance with all the parameters of the scouring Machine.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Fabric Quality <b>Ability to:</b> Operate the Machine following all SOPs	3 hours	16 hours	Safety Gloves	workplace
5. Carry out washing off/Neutralization	Trainee will get acquaintance with the washing of the scoured fabric.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Fabric Quality, Washing methods, Neutralization <b>Ability to:</b> Operate the Machine following all SOPs	3 hours	16 hours	Washing chemicals, pH strips	Workplace
6. Scoured fabric inspection	Trainee will get acquaintance with the chemical and fabric inspection after scouring before dispatching it to the bleaching department.	<b>Knowledge of:</b> Fabric Quality, Fabric inspection <b>Ability to:</b> Assess the chemical residuals and the fabric strength.	3 hours	16 hours	Stitching Machine, Measuring Tape, Absorbency Test	Class/Workplace

**Module: 6 Title..... Bleaching.....**

**Objective of the Module.....** Enabling Trainee to perform bleaching .....

**Duration.....**114 hours..... Theory Hours.....22..... Practical Hours.....92.....

<b>Learning Unit</b>	<b>Learning Outcome</b>	<b>Learning Element</b>	<b>Theory Hours</b>	<b>Practical Hours</b>	<b>Materials Required</b>	<b>Learning Place</b>
1.Introduction to Bleaching	Trainee will get introduction of Bleaching its types, faults and remedies	<b>Knowledge of:</b> Bleaching process, its types, faults and remedies <b>Ability to:</b> Perform Bleaching process efficiently Check Bleaching faults and remedies	14 hours	4 hours	Projector	Class/Workplace
2.Introduction to Bleaching Machine	Trainee will get introduction of Bleaching Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in case of emergency,	4 hours	12 hours	Machine	Workplace
3. Prepare bleaching recipe	Trainee will get acquaintance with different bleaching methods and the bleaching recipes specific to each fabric.	<b>Knowledge of:</b> MACHINE parameters, SOPs for operating the Machine, Quality of the fabric, Bleaching recipe <b>Ability to:</b> Operate the Machine following all	4 hours	12 hours	Bleaching Chemicals, Mixer, Thermometer, Safety Gloves	Workplace

		SOPs, Accurate quantity of each chemical				
4. Adjust parameters of Machine	Trainee will get acquaintance with all the parameters of the beaching range.	<b>Knowledge of:</b> MACHINE parameters, SOPs for operating the Machine, Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	12 hours		workplace
5. Set steamer parameters	Trainee will get acquaintance with all the parameters of the steamer Machine.	<b>Knowledge of:</b> MACHINE parameters, SOPs for operating the Machine, Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	12 hours	Gloves, Thermometer	Workplace
6. Carry out washing off	Trainee will get acquaintance with the washing methods and SOPs for washing of the bleached fabric.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric, Washing methods <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	12 hours	Washing chemicals	
7. Bleached fabric	Trainee will get	<b>Knowledge of:</b>			Cutter,	Workplace

inspection	acquaintance with the Chemical and fabric checkup of the fabric.	Quality of the fabric, Chemicals neutralization, Fabric checkup <b>Ability to:</b> Check the chemical residuals and the fabric strength.	4 hours	12 hours	Chemicals, Stitching machine, strength tester, Absorbency test, Inspection frame	
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**Module: 7 Title..... Mercerizing .....**

Objective of the Module..... Enabling Trainee to perform mercerizing .....

Duration...114 hours.... Theory Hours.....22..... Practical Hours.....92.....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1.Introduction to Mercerizing	Trainee will get introduction of Mercerizing its types, faults and remedies	<b>Knowledge of:</b> Mercerizing process, its types, faults and remedies <b>Ability to:</b> Perform Mercerizing process efficiently Check Mercerizing faults and remedies	14 hours	4 hours	Projector	Class
2.Introduction to Mercerizing Machine	Trainee will get introduction of Mercerizing Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in case of emergency,	4 hours	12 hours	Machine, Fabric Lot	Workplace

3. Prepare mercerizing recipe	Trainee will get acquaintance with different mercerizing methods and the mercerizing recipes specific to each fabric.	<b>Knowledge of:</b> MACHINE parameters, SOPs for operating the Machine, Quality of the fabric, mercerizing recipe <b>Ability to:</b> Operate the Machine following all SOPs, Accurate quantity of each chemical	4 hours	12 hours	Mercerizing chemicals	Workplace
4. Adjust parameters of Machine	Trainee will get acquaintance with all the parameters of the mercerizing range.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	12 hours		workplace
5. Carry out washing off and neutralization of fabric	Trainee will get acquaintance with the washing methods and SOPs for washing of the mercerized fabric.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric, Washing methods <b>Ability to:</b> Operate the Machine	4 hours	12 hours	Washing Chemicals	Workplace



		following all SOPs				
6. : Carry out drying of fabric	Trainee will get acquaintance with the drying methods and SOPs for drying of the mercerized fabric.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric, Washing methods <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	12 hours	Thermometer	Class/workplace
7. Mercerized fabric inspection		<b>Knowledge of:</b> Mercerizing, its kinds, Mercerizing faults their remedies, Quality of the fabric <b>Ability to:</b> Inspect the fabric according to the SOPs	4 hours	12 hours		Class/Workplace

**Module:8 Title..... Dyeing .....**

Objective of the Module..... Enabling Trainee to perform Dyeing .....

Duration.....218 hours..... Theory Hours.....46..... Practical Hours...172.....

<b>Learning Unit</b>	<b>Learning Outcome</b>	<b>Learning Element</b>	<b>Theory Hours</b>	<b>Practical Hours</b>	<b>Materials Required</b>	<b>Learning Place</b>
1.Introduction to Dyeing	Trainee will get introduction of Dyeing its types, faults and remedies	<b>Knowledge of:</b> Dyeing process, its types, faults and remedies <b>Ability to:</b> Perform Dyeing process efficiently Check Dyeing faults and remedies	30 hours	6 hours	Projector	Class
2.Introduction to Dyeing Machine	Trainee will get introduction of Dyeing Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in case of emergency,	6 hours	20 hours	Machine	Workplace
3. Prepare dyeing recipe	Trainee will get acquaintance with different dyeing methods and the dyeing recipes specific to each fabric.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric, dyeing recipe <b>Ability to:</b> Operate the Machine following all SOPs, Accurate quantity of	6 hours	20 hours	Chemicals, Dyes	Workplace

		each chemical				
4. Adjust parameters of Machine	Trainee will get acquaintance with all the parameters of the dyeing Machine.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs	6 hours	20 hours	Safety Gloves	workplace
5. Carry out padding off	Trainee will get acquaintance with the SOPs need to be followed for feeding fabric to the padder and the pick up adjustment.	<b>Knowledge of:</b> Quality of the fabric, Chemicals neutralization, Fabric checkup, SOPs for feeding fabric to Machine <b>Ability to:</b> Check the pick up of the fabric.	6 hours	20 hours		Workplace
6. Carry out washing off	Trainee will get acquaintance with the washing methods and SOPs for washing of the dyed fabric.	<b>Knowledge of:</b> MACHINE parameters, SOPs for operating the Machine, Quality of the fabric, Washing methods <b>Ability to:</b> Operate the Machine following all SOPs	6 hours	20 hours	Washing Chemicals	Workplace
7. Carry out drying of fabric	Trainee will get acquaintance with the	<b>Knowledge of:</b> Machine parameters,	6 hours	20 hours	Thermometer	Class/workplace

	drying methods and SOPs for drying of the dyed fabric.	SOPs for operating the Machine, Quality of the fabric, Drying methods <b>Ability to:</b> Operate the Machine following all SOPs				
8. Dyed fabric inspection		<b>Knowledge of:</b> Dyeing, its kinds, Dyeing faults their remedies, Quality of the fabric <b>Ability to:</b> Inspect the fabric according to the SOPs	6 hours	20 hours		Class/Workplace

**Module:9 Title..... Printing .....**

Objective of the Module..... Enabling Trainee to perform Printing .....

Duration...172 hours..... Theory Hours.....32..... Practical Hours.....140.....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1.Introduction to Printing	Trainee will get introduction of Printing and engraving, its types, faults and remedies	<b>Knowledge of:</b> Printing process, its types, faults and remedies <b>Ability to:</b> Perform Printing process efficiently Check Printing faults and remedies	34 hours	12 hours	Projector	Class

2.Introduction to Printing Machine	Trainee will get introduction of Printing Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in case of emergency,	6 hours	26 hours	Machine, Fabric Lot	Workplace
3. Prepare printing recipe	Trainee will get acquaintance with different printing methods and the printing recipes specific to each fabric.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric, Printing recipe <b>Ability to:</b> Operate the Machine following all SOPs, Accurate quantity of each chemical	6 hours	26 hours	Printing chemicals,	Workplace
4. Adjust Machine Parameters	Trainee will get acquaintance with all the parameters of the PRINTING Machine.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs	6 hours	26 hours		workplace
5. Printed fabric		<b>Knowledge of:</b>				Class/Workplace

inspection		Printing, its kinds, Printing faults their remedies, Quality of the fabric <b>Ability to:</b> Inspect the fabric according to the SOPs	6 hours	26 hours		
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**Module:10 Title..... Finishing .....**

Objective of the Module..... Enabling Trainee to perform Finishing .....

Duration.....172 hours..... Theory Hours.....32..... Practical Hours.....140.....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1.Introduction to Finishing	Trainee will get introduction of Finishing its types, faults and remedies	<b>Knowledge of:</b> Finishing process, its types, faults and remedies <b>Ability to:</b> Perform Finishing process efficiently Check Scouring faults and remedies	20 hours	10 hours	Projector	Class
2.Introduction to Finishing Machine	Trainee will get introduction of Finishing Machine, its components	<b>Knowledge of:</b> Machine parts and components, Machine faults <b>Ability to:</b> Handle Machine in case of emergency,	4 hours	16 hours	Machine	Workplace

3. Prepare Finishing recipe	Trainee will get acquaintance with different Finishing methods and the Finishing recipes specific to each fabric.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric, Finishing recipe <b>Ability to:</b> Operate the Machine following all SOPs, Accurate quantity of each chemical	4 hours	16 hours	Finishing Chemicals	Workplace
4. Carry out padding off	Trainee will get acquaintance with the SOPs need to be followed for feeding fabric to the padder and the pick up adjustment.	<b>Knowledge of:</b> Quality of the fabric, Fabric checkup, SOPs for feeding fabric to Machine Pick up of the fabric, Type of finishing <b>Ability to:</b> Use the required finish to fabric, Check the pick up of the fabric.	4 hours	16 hours		workplace
5. : Carry out finishing on stanter	Trainee will get acquaintance with all the parameters of the stenter Machine.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine,	4 hours	16 hours	Safety Gloves	Workplace

		Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs				
6. Carry out sanforizing	Trainee will get acquaintance with all the parameters of the sanforizing Machine and the process of sanforizing.	<b>Knowledge of:</b> MACHINE parameters, SOPs for operating the Machine, Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	16 hours		Class/workplace
7. Carry out calendering	Trainee will get acquaintance with all the parameters of the calendering Machine and the process of calendering.	<b>Knowledge of:</b> Machine parameters, SOPs for operating the Machine, Quality of the fabric <b>Ability to:</b> Operate the Machine following all SOPs	4 hours	16 hours		Workplace
8. Finished fabric inspection		<b>Knowledge of:</b> Finishing, its kinds, Finishing faults their remedies, Quality of the fabric <b>Ability to:</b> Inspect the fabric according to the SOPs	4 hours	18 hours		Class/Workplace



**Module: 11 Title..... Carry out Final Inspection .....**

Objective of the Module..... Enabling Trainee to carry out final inspection .....

Duration.....84 hours..... Theory Hours.....24..... Practical Hours....60 hours....

Learning Unit	Learning Outcome	Learning Element	Theory Hours	Practical Hours	Materials Required	Learning Place
1. Carry out surface inspection	Trainee will get acquaintance with the surface inspection of the fabric after all processes.	<p><b>Knowledge of:</b> Required fabric characteristics achieved or not?, Surface inspection methods</p> <p><b>Ability to:</b> Do surface inspection following SOPs</p>	4 hours	8 hours	GSM Cutter, Ends, picks/inch counter, Magnifying Glass,	Workplace
2. Carry out color inspection	Trainee will get acquaintance with the color inspection and shade checking.	<p><b>Knowledge of:</b> Required fabric shade properties, Fabric shade quality</p> <p><b>Ability to:</b> Judge the desired fabric shade,</p>	4 hours	8 hours	Spectrophotometer	Workplace/Lab
3. Marking	Trainee will get acquaintance with the standard operating procedures to follow for carrying out the marking of the processed	<p><b>Knowledge of:</b> Basic knowledge of the properties of the fabrics for their marking,</p> <p><b>Ability to:</b> Mark the different types of fabrics</p>	4 hours	8 hours	Tailor Chalk	Workplace

	Fabrics.	following the rules already set for marking of fabrics depending upon their characteristics .				
4. Grading	Trainee will get acquaintance with the standard operating procedures to follow for carrying out the grading of different types of Fabrics.	<b>Knowledge of:</b> Basic knowledge of the properties of the fabrics for their grading, <b>Ability to:</b> Grade the different types of fabrics following the rules already set for grading of fabrics depending upon their characteristics .	4 hours	8 hours		Class/workplace
5. Packing as per grading	Trainee will get acquaintance with the standard operating procedures to follow for carrying out the packing of different types of Fabrics.	<b>Knowledge of:</b> Basic knowledge of the properties of the fabrics for their packing, <b>Ability to:</b> Grade the different types of fabrics following the rules already set for packing of fabrics depending upon their characteristics .	4 hours	8 hours	Polythene sheets	Workplace

**Module: 12 Title..... Adopt Safety measures .....**

Objective of the Module..... Enabling Trainee to adopt safety measures .....

Duration.....42 hours..... Theory Hours...12 hours..... Practical Hours...30.....

<b>Learning Unit</b>	<b>Learning Outcome</b>	<b>Learning Element</b>	<b>Theory Hours</b>	<b>Practical Hours</b>	<b>Materials Required</b>	<b>Learning Place</b>
1. Apply Personal Safety	Trainee will get acquaintance with all the safety measures need to be followed for personal safety.	<b>Knowledge of:</b> Basic Safety Measures, Safety Precautions <b>Ability to:</b> Follow the SOPs for personal safety.	6 hours	8 hours	Safety Gloves, Safety Goggles,	Class/Workplace
2. Apply workplace safety	Trainee will get acquaintance with all the safety measures need to be followed in the workplace.	<b>Knowledge of:</b> Basic Safety Measures, Safety Precautions <b>Ability to:</b> Follow the SOPs for workplace safety.	6 hours	8 hours	Fire Extinguishers, Inhalers, First Aid Boxes	Class/Workplace
3. Apply safety for tools and Equipment	Trainee will get acquaintance with all the safety measures need to be followed in the for proper handling of the tools and equipments.	<b>Knowledge of:</b> Basic Safety Measures, Safety Precautions <b>Ability to:</b> Follow the SOPs for safety using the tools and equipments.	6 hours	8 hours	Tools and Equipment brushers and manuals	Class/Workplace

**Module: 13 Title..... Communicate with others .....**

Objective of the Module..... Enabling Trainee to communicate with others .....

Duration.....21 hours... Theory Hours...6 hours.... Practical Hours.....15 hours.....

<b>Learning Unit</b>	<b>Learning Outcome</b>	<b>Learning Element</b>	<b>Theory Hours</b>	<b>Practical Hours</b>	<b>Materials Required</b>	<b>Learning Place</b>
1. Communicate with co-workers	Trainee will get acquaintance with all the basic communication skills necessary to communicate with others.	<b>Knowledge of:</b> Basic communication skills,  <b>Ability to:</b> Follow communication skills while dealing other co-workers	1 hour	6 hours		Class/Workplace
2. Communicate with customer	Trainee will get acquaintance with all the basic communication skills and presentation techniques necessary to communicate with customers.	<b>Knowledge of:</b> Basic communication skills, Basic presentation skills to attract customers  <b>Ability to:</b> Follow communication skills and presentation skills while dealing customers	1 hour	6 hours		Class/Workplace
3. Communicate with supervisor	Trainee will get acquaintance with all the basic communication skills necessary to communicate with others.	<b>Knowledge of:</b> Basic communication skills,  <b>Ability to:</b> Follow communication skills while dealing others	1 hour	6 hours		Class/Workplace

**Module:14 Title..... Develop professionalism .....**

**Objective of the Module.....**Developing professionalism in the trainee.....

**Duration.....42 hours.....** Theory Hours....12 hours.... Practical Hours...30 hours.....

<b>Learning Unit</b>	<b>Learning Outcome</b>	<b>Learning Element</b>	<b>Theory Hours</b>	<b>Practical Hours</b>	<b>Materials Required</b>	<b>Learning Place</b>
1. Participate in training	Trainee will get way to participate in training programs run for the upgradation of the technical knowledge of the workers.	<b>Knowledge of:</b> Basic technical knowledge, Good listening attitude  <b>Ability to:</b> Listen carefully and main points to write down.	3 hours	07 hours	Projector	Class/Workplace
2. Interact with colleagues	Trainee will get acquaintance with all the basic communication to communicate with other co-workers and share technical knowledge.	<b>Knowledge of:</b> Basic communication skills, Basic technical knowledge <b>Ability to:</b> Follow communication skills and share technical knowledge with colleagues.	1 hours	6 hours		Class/Workplace
3. : Consult with the experts	Trainee will get acquaintance with all the basic communication skills to communicate with technical experts.	<b>Knowledge of:</b> Basic communication skills, Basic technical knowledge ATTITUDE OF LISTENING <b>Ability to:</b> Follow communication skills and share technical knowledge with colleagues and hear to	1 hours	6 hours		Class/Workplace

		technical experts.				
4. Participate in skill test	Trainee will get acquaintance with all the basic communication skills and presentation techniques necessary to get into the skill tests.	<b>Knowledge of:</b> Basic communication skills, Basic presentation skills, Basic Technical knowledge  <b>Ability to:</b> Follow communication skills and presentation skills, Use of technical knowledge	4 hours	8 hours		Class/Workplace

## Assessment Template

### Module # 1

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Collection of sample	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Selection of Sample	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Deliver Sample to Lab	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious.	As suggested by Trainee's Teacher
Placing of Order to Supplier	0.5 hours	0.5 hours	1 hour	Short answer questions test.	As suggested by Trainee's Teacher
Receiving of material	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams	As suggested by Trainee's Teacher

				Demonstration by trainee Multiple Choice Questions	
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## Module # 2

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Carry out surface inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out grading	0.25 hours	0.75 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Dispatch fabric to lab	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher



Carry out quantitative analysis	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
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### Module # 3

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Singeing	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Introduction to Singeing machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher

Load fabric to Machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust flame intensity	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust speed of fabric	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust distance between flame & fabric	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test	As suggested by Trainee's Teacher

				requiring diagrams Multiple Choice Questions	
Adjust angle of flame	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Start singeing Machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Singed Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher

## Module # 4

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Desizing	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Introduction to Desizing machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Prepare desizing recipe	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust parameters of Machine	0.5 hours	0.5 hours		Direct observation from practical demonstration by	As suggested by

			1 hour	trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	Trainee's Teacher
Set desizing rotation time of batch	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out washing off/ Neutralization	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Desized Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher

## Module # 5

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Scouring	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Introduction to Scouring machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Prepare Scouring recipe	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust parameters of Machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams	As suggested by Trainee's Teacher

				Multiple Choice Questions	
Carry out washing off	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Scoured Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher

### Module # 6

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Bleaching	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Introduction to Bleaching machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams	As suggested by Trainee's Teacher

				Demonstration by trainee Multiple Choice Questions	
Prepare bleaching recipe	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust parameters of Machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Set steamer parameters	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out washing off	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Bleached Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher



## Module # 7

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Mercerizing	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Introduction to Mercerizing machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Prepare mercerizing recipe	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Checking Machine parameters	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams	As suggested by Trainee's Teacher

				Multiple Choice Questions	
Carry out washing off and neutralization of fabric	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out drying of fabric	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Mercerized Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher

### Module # 8

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Dyes and Dyeing	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams	As suggested by Trainee's Teacher

				Demonstration by trainee Multiple Choice Questions	
Introduction to Dyeing machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Prepare dyeing recipe	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust parameters of Machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out padding off	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out				Direct observation from	As suggested by

dyeing of fabric	0.5 hours	0.5 hours	1 hour	practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	Trainee's Teacher
Carry out washing off	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Drying	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Dyed Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher

## Module # 9

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Printing and Engraving	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Introduction to Printing machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Prepare printing recipe	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Adjust Machine Parameters	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher

Printed Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
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### Module # 10

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Introduction to Finishing	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Introduction to Finishing machine	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions	As suggested by Trainee's Teacher
Prepare Finishing recipe	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams	As suggested by Trainee's Teacher

				Multiple Choice Questions	
Carry out padding off	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out finishing on stanter	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out sanforizing	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Carry out calendering	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Finished Fabric Inspection	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being	Printed Fabric Inspection

				<p>safety conscious. Short answer questions test. Illustrative test requiring diagrams Demonstration by trainee Multiple Choice Questions</p>	
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### Module # 11

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Final inspection	0.5 hours	0.5 hours	1 hour	<p>Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions</p>	As suggested by Trainee's Teacher
Carry out color inspection	0.5 hours	0.5 hours	1 hour	<p>Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions</p>	As suggested by Trainee's Teacher
Marking	0.5 hours	0.5 hours	1 hour	<p>Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions</p>	As suggested by Trainee's Teacher
Packing as per grading	0.5 hours	0.5 hours	1 hour	<p>Direct observation from practical demonstration by trainee in the workplace whilst being</p>	As suggested by Trainee's Teacher



				safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	
Dispatch end product Grading	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Surface Inspection and Mending	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher

### Module # 12

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Apply Personal Safety	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Apply workplace safety	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious.	As suggested by Trainee's Teacher

				Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	
Apply safety for tools and Equipment	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher

### Module # 13

<b>0Learning Units</b>	<b>Theory Days/hours</b>	<b>Workplace Days/Hours</b>	<b>Recommended Formative Assessment</b>	<b>Recommended Methodology</b>	<b>Scheduled Dates</b>
Communicate with co-workers	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Communicate with others	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Communicate with supervisor	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions	As suggested by Trainee's Teacher

				test. Illustrative test requiring diagrams Multiple Choice Questions	
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### Module # 14

Learning Units	Theory Days/hours	Workplace Days/Hours	Recommended Formative Assessment	Recommended Methodology	Scheduled Dates
Participate in training	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Interact with colleagues	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Consult with the experts	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test. Illustrative test requiring diagrams Multiple Choice Questions	As suggested by Trainee's Teacher
Participate in skill test	0.5 hours	0.5 hours	1 hour	Direct observation from practical demonstration by trainee in the workplace whilst being safety conscious. Short answer questions test.	As suggested by Trainee's Teacher

				Illustrative test requiring diagrams Multiple Choice Questions	
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## Tools & Equipment Template

<b>Name of Trade</b>	<b>Textile wet Processing</b>
<b>Duration</b>	<b>1 Year</b>

## Tools and Equipment

Sr No	Name of Item/ Equipment/ Tools	Qty.
1	GSM Cutter	3
2	Picks/Ends Counting Glass	3
3	Magnifying Glass	10
4	Needles	3
5	Delivering Trolley/ Container	24
6	Fabric Trolley	3
7	Singeing Machine	2
8	Thermometer	4
9	Tachometer	2
10	Tension Meter	2
11	Microscope	1
12	Inspection Frame	2
13	Desizing Machine	1
14	Batch Rotator	1
15	Tegwa Scale	2
16	Scouring Machine	1
17	Stitching Machine	1
18	Bleaching Machine	1
19	Spectrophotometer	1
20	Mercerizing Machine	1
21	Dyeing Machine	1
22	Grey Scale	5
23	Printing Machine	1
24	Engraving Machine	1
25	Frame	5
26	Stenter	1
27	Sanforising Machine	1
28	Calendering Machine	1
29	Helmet	5
30	Heavy Duty Shoes	5
31	Safety Goggles	5
32	Measuring Tape	5

## Consumable Supplies

Sr No	Name of Consumable Supplies
1	Fabric Lot
2	Fabric Samples
3	Face Mask
4	Gloves
5	Tape
6	Desizing Chemicals
7	PH Strips
8	Chemicals for Neutralization
9	KI Solution
10	Chemicals for Scouring Recipe
11	Washing Detergents
12	Chemicals for Bleaching, Mercerizing, Dyeing, Printing and Finishing purposes
13	Tailor Chalks
14	Paper Tubes
15	Packing Cartons
16	Ear Plugs
17	First Aid Boxes
18	Fire Extinguishers
19	Inhalers
20	Brushes

## References

1. Textile Science by E.P.G. Gohl, 1995
2. Cellulosic Dyeing by John Shore, 1995
3. Blends Dyeing by John Shore, 1995
4. Dyeing and Chemical Technology of Textile Fibers by E.R.Trotman
5. Textile Printing by W.C. Miles, SDC UK, 2003 Second Edition
6. Textile Finishing by Derek Heywood, SDC UK Publishers,2003
7. Critical Solutions in the Dyeing of Cotton Textile Materils, Textile Progress by R.Shamey and T. Hussain, Vol 37, No ½, 2005
8. Textile Testing Physical chemical Microscopic by John H Skinkle, 2<sup>nd</sup> Edition 1972
9. Wet Processing of Cellulosic Textiles by Ahmad Niaz, Karachi 2000
10. Quality Control Materials, AATCC Publishers

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