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TEXTILE WET PROCESSING

CBT Curriculum

National Vocational Certificate Level 3

Version 1 - November, 2019

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Introduction

Definition/ Description of the training program for Textile Wet Processing (Dyeing Technologist) Level-3

Textile Wet Processing (Dyeing Technologist) (Level-3) are responsible for execute different types of exhaust dyeing machines for woven and knitted fabrics, Continuous and semi-continuous dyeing machines, laboratory testing (physical and chemical) for dyeing under safe working environment with good communication skills.

Purpose of the training program

The purpose of the training is to provide skilled manpower to improve the existing capacity of textile dyeing sector. This training will provide the requisite skills to the trainees to execute dyeing machines and carryout the laboratory testing for dyeing process. It will enable the participants to meet the challenges in the field of textile dyeing industry. Further, to improve the skill level of the dyeing machine executers to prepare them for the textile dyeing industry to meet the market competition nationally and internationally.

The core purpose of this qualification is to produce employable textile dyeing experts who could execute different machines and laboratory tests used in textile dyeing industry according to national and international standards. In addition this qualification will prepare unemployed youth to get employment in textile dyeing sector.

Overall objectives of training program

The overall objectives of the Textile Wet Processing (Dyeing Technologist) (Level-3) training program are:

- Execute dyeing machines to prepare required fabric for dyeing..
- Verifying tools and equipment used for dyeing.
- Carryout laboratory tests used for dyeing process.
- Sequencing the different stages of dyeing the product.
- Dyeing the substrate as required by customers' orders
- Working safely with required standards.
- Improve communication skills required for the nature of dyeing industry.

Competencies to be gained after completion of course

At the end of the course, the trainee must have attained the following competencies:

- Apply Work Health and Safety Practices (WHS)
- Identify and Implement Workplace Policy and Procedures
- Communicate at Workplace
- Perform Computer Application Skills
- Manage Personal Finances
- Carryout Exhaust dyeing for woven fabrics
- Carryout Exhaust dyeing for knitted fabrics
- Carryout Semi-continuous dyeing
- Carryout Continuous dyeing
- Carry out laboratory testing of wet dyeing process

Possible available job opportunities available immediately and later in the future

Textile Wet Processing (Dyeing Technologist) (Level-3) are employed in dyeing industries locally and internationally. Experienced Textile Wet Processing (Dyeing Technologist) after declared competent in Level-3 may advance through promotions with the same employer or by moving to more advanced positions with other employers. They can become:

- Production Supervisor
- Shift Supervisor
- Exhaust dyeing Incharge
- Continuous dyeing Incharge
- Semi-continuous dyeing Incharge
- Production Incharge
- Quality Control Incharge
- Quality Assurance Incharge
- Sample Incharge
- Production Manager
- General Manager

Some experienced Textile Wet Processing (Dyeing Technologist) achieve a highly respected level of salaries. There are good prospects for travel both within Pakistan and abroad. The employment outlook in this occupation will be influenced by a wide variety of factors including:

- Trends and events affecting overall employment
- Location in Pakistan and abroad
- Employment turnover (work opportunities generated by people leaving existing positions)
- Occupational growth (work opportunities resulting from the creation of new positions that never existed before)
- Size of the industry
- Flexibility of the applicant (concerning location and schedule of work).

Trainee entry level

The entry level of trainee for Industrial Garment Expert (Level-3) is declared in Textile Wet Processing (Dyeing Technologist) Level-2

Minimum qualification of trainer

Teaching staff should have at least three years' experience in the minimum role of dyeing supervisor. They should also hold or be working towards a minimum formal teaching qualification with DAE in Textile dyeing & printing technology.

Other formal qualifications or experience in the dyeing industry would be preferred in addition to the above.

Recommended trainer: trainee ratio

The recommended maximum trainer: trainee ratio for this program is 1 trainer for 20 trainees.

Medium of instruction i.e. language of instruction

Instruction will be Urdu, regional and English. For employment in the Middle East, some Arabic expressions will be helpful.

Duration of the course (Total time, Theory & Practical time)

This curriculum comprises 10 modules. The recommended delivery time is 710 hours. Delivery of the course could therefore be full time, 5 days a week, for 6 months. Training providers are at liberty to develop other models of delivery, including part-time and evening delivery.

The full structure of the course is as follow:

Module	Theory[1] Days/hours	Workplace[2] Days/hours	Total hours
Module 1: Apply Work Health and Safety Practices (WHS)	06	24	30
Module 2: Identify and Implement Workplace Policy and Procedures	04	16	20
Module 3: Communicate at Workplace	06	24	30
Module 4: Perform Computer Application Skills	08	32	40
Module 5: Manage Personal Finances	06	24	30
Module 6: Carryout Exhaust dyeing for woven fabrics	16	64	80
Module 7: Carryout Exhaust dyeing for knitted fabrics	16	64	80
Module 8: Carryout Semi-continuous dyeing	16	64	80
Module 9: Carryout Continuous dyeing	16	64	80

1 Learning Module hours in training provider premises
2 Training workshop, laboratory and on-the-job workplace

Module	Theory[1] Days/hours	Workplace[2] Days/hours	Total hours
Module 10: Carry out laboratory testing of wet dyeing process	40	160	200

Sequence of the modules

This qualification (Level-3) is made up of 10 modules. 04 modules relate to execute different types of dyeing machines / processes and one for the laboratory testing for textile dyeing process, for example *Module 10: Carry out laboratory testing of wet dyeing process*. A suggested distribution of these modules is presented overleaf. This is not prescriptive and training providers may modify this if they wish.

There are four further modules relating to general skills that a Dyeing technologist must have: *Module 3: Communicate at workplace*. This is interdependent with the clear communication skills and need to be delivered in parallel. This is illustrated in the distribution table.

One further module relate to the safety skills of a Dyeing technologist: *Module 1: Apply Work Health and Safety Practices (WHS).* The distribution table suggests that this should be delivered at the beginning of the every module.

Each module covers a range of learning components. These are intended to provide detailed guidance to teachers (for example the Learning Elements component) and give them additional support for preparing their lessons (for example the Materials Required component). The detail provided by each module will contribute to a standardized approach to teaching, ensuring that training providers in different parts of the country have clear information on what should be taught.

The distribution table is shown below:

Module 1: Apply Work Health and Safety Practices (WHS) 30 hours	Module 2: dentify and Implement Workplace Policy and Procedures 20 hours	Module 3: Communicate at Workplace 30 hours
	Module 4: Perform Computer Application Skills 40 hours	
	Module 5: Manage Personal Finances 30 hours	
	Module 6: Carryout Exhaust dyeing for woven fabrics 80 hours	
	Module 7: Carryout Exhaust dyeing for knitted fabrics 80 hours	
	Module 8: Carryout Semi-continuous dyeing 80 hours	
	Module 9: Carryout Continuous dyeing 80 hours	
	Module 10: Carry out laboratory testing of wet dyeing process 200 hours	

Summary – overview of the curriculum

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 1: Apply Work Health and Safety Practices (WHS) **Aim:** The Aim of this module is to work with safety and participate in hazard assessment activities, follow emergency procedures and participate OHS practices in process.	LU1: Implement safe work practices at work place LU2: Participate in hazard assessment activities a work place LU3: Follow emergency procedures at workplace LU4: Participate in OHS consultative processes	06	24	30
Module 2: Identify and Implement Workplace Policy and Procedures **Aim:** The aim of this module is to develop and implement a workplace policy & procedures and to modify the policy to suit changed circumstances. It applies to individuals with managerial responsibilities who undertake work developing approaches to create, monitor and improve strategies and policies within workplaces and engage with a range of relevant stakeholders and specialists.	LU1: Identify workplace policy & procedures LU2: Implement workplace policy & procedures LU3: Communicate workplace policy& procedures LU4: Review the implementation of workplace policy & procedures	04	16	20
Module 3: Communicate at Workplace **Aim:** This aim of this module is to develop communication skills in the workplace. It covers gathering, conveying and receiving information, along with completing assigned written information under direct supervision.	LU1: Communicate within the organization LU2: Communicate outside the organization LU3: Communicate effectively in workgroup LU4: Communicate in writing	06	24	30

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 4: Perform Computer Application Skills **Aim:** The aim of this module is to use spreadsheet applications, prepare in page documents, develops familiarity with Word, Excel, Access, PowerPoint, email, and computer graphics basics. It applies to individuals who perform a range of routine tasks in the workplace using a fundamental knowledge of spreadsheets, Microsoft office and computer graphics in under direct supervision or with limited responsibility.	LU1: Prepare In-page documents as per required information LU2: Prepare Spreadsheets as per required information LU3: Use MS Office as per required information LU4: Perform computer graphics in basic applications LU5: Create Email account for communications	08	32	40
Module 5: Manage Personal Finances **Aim:** The aim of this module is to manage develop, implement and monitor a personal budget in order to plan regular savings and manage debt effectively.	LU1: Develop a personal budget LU2: Develop long term personal budget LU3: Identify ways to maximize future finances	06	24	30
Module 6: Carry out Exhaust Dyeing for Woven Fabrics. **Aim:** The aim of this module is to perform the dyeing parameters for dyeing fabrics by the exhaustion process in accordance with the dyeing plan and to ensure color matching to the required quality standards.	LU1: Follow Dyeing Plan for woven fabric dyeing by exhaust process LU2: Prepare and ensure woven fabric dyeing parameters for exhaust dyeing LU3: Identify shade by using shade matching method for woven fabrics LU4: Perform Dyeing LU5: Verify quality of woven fabric dyeing by exhaust process LU6: Prepare production report for woven fabric dyeing by exhaust process	16	64	80

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 7: Carry out Exhaust Dyeing for Knitted Fabrics. **Aim:** The aim of this module is to prepare and ensure dyeing parameters for knitted fabric dyeing by exhaust method according to dyeing plan with skills of shade matching under the required quality standards.	LU1: Follow Dyeing Plan for knitted fabric dyeing by exhaust process LU2: Prepare and ensure knitted fabric dyeing parameters for exhaust dyeing LU3: Identify shade by using shade matching method for knitted fabrics LU4: Perform Dyeing LU5: Verify quality of knitted fabric dyeing by exhaust process LU6: Prepare production report for knitted fabric dyeing by exhaust process	16	64	80
Module 8: Carry out Semi-Continuous Dyeing **Aim:** The aim of this module is to prepare and ensure dyeing parameters for fabric dyeing by semi-continuous dyeing method according to dyeing plan with skills of shade matching under the required quality standards.	LU1: Follow Dyeing Plan for semi-continuous dyeing LU2: Prepare and ensure dyeing parameters for semi-continuous dyeing LU3: Identify shade by using shade matching method for semi-continuous dyeing. LU4: Perform Dyeing LU5: Verify quality for semi-continuous dyeing process LU6: Prepare production report for semi-continuous dyeing process	16	64	80
Module 9: Carry out Continuous Dyeing **Aim:** The aim of this module is to prepare and ensure dyeing parameters for fabric dyeing by continuous dyeing method according to dyeing plan with skills of shade matching under the required quality standards..	LU1: Follow Dyeing Plan for continuous dyeing LU2: Prepare and ensure dyeing parameters for continuous dyeing LU3: Identify shade by using shade matching method for continuous dyeing. LU4: Perform Dyeing LU5: Verify quality for continuous dyeing process LU6: Prepare production report for continuous dyeing process	16	64	80
Module 10: Carry out laboratory testing of dyeing process **Aim:** The aim of this module is to perform laboratory tests like pH, tensile strength, color fastness and shrinkage to maintain quality of dyed fabrics.	LU1: Select textile substrate sample LU2: Perform Physical lab testing LU3: Perform Chemical testing LU4: Verify final results LU5: Maintain Quality Records	40	160	200

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Module-6

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Modules

Module 6: 0723001101 Carry out Exhaust Dyeing for Woven Fabrics.

Objective of the module: This competence standard covers the skills and knowledge required to perform the dyeing parameters for dyeing fabrics by the exhaustion process in accordance with the dyeing plan and to ensure color matching to the required quality standards.

Duration: 80 hours **Theory:** 16 hours **Practical:** 64 hrs

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Follow Dyeing Plan for woven fabric dyeing by exhaust process	**The trainee will be able to:** Receive RFD (Ready for Dyeing) fabric for exhaust dyeing according to program sheet. Receive shade standards for shade matching.. Arrange material for dyeing process as program sheet. Interpret specs for exhaust dyeing process.	Knowledge of processing of woven fabric ready for dyeing (RFD) used for dyeing at exhaust dyeing methods. Identifying shade required for the dyeing as per customer's order. Knowledge of methods of shade matching. Types of dyes, chemicals and auxiliaries used for exhaust dyeing for woven fabrics. Understanding the spec sheet / order sheet for processing the exhaust dyeing on woven fabrics.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Winch dyeing machine Jigger dyeing machine Jet dyeing machine Over lock machine Related Chemicals and dyes	Class Room and Workshop.
LU2: **Prepare and ensure woven fabric dyeing parameters for exhaust dyeing**	**The trainee will be able to:** Instruct exhaust dyeing machine operators for dyeing process according to given parameters.	Knowledge of dyeing parameters such as pH, temperature, TDS, liquor ratio, chemicals and auxiliaries used during woven fabric dyeing at exhaust dyeing process. Calculating skills for dyes and chemical	**Total** 10 hours **Theory:** 2 hours	Winch dyeing machine Jigger dyeing machine Jet dyeing	Class Room Workshop. Visit dyeing industries

	Calculate amount of dyes and chemicals as per given in recipe for production as per dyeing plan. Execute dyes and chemical preparation for exhaust dyeing at production level. Set machine parameters for exhaust dyeing process. Verify process parameters for dyeing as per dyeing plan. Supervise safety precautions as per job requirement.	calculations according to given recipe. Preparing dyes and chemicals and conversion knowledge from recipe level to the production level. Setting of machine parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc. Knowledge of machine speed and proper handling of machine according to the type of operations, fabrics and product type. Verifying all parameters for machine and dyeing process according to dyeing plan. Supervising and verifying the safety precautions required for dyeing operators before start of machine operations.	**Practical:** 8 hours	machine Over lock machine Iron Tape	Dyeing Workshop Videos for related knowledge on multimedia
LU3: **Identify shade by using shade matching method for woven fabrics**	**The trainee will be able to:** Verify shade standards for shade matching. Match shade as per standards and make corrections if required.	Knowledge of various methods used for shade matching like spectrophotometer and light box with understanding of standard pantone book. Knowledge of shade matching, variation and make correction if any.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Spectrophotometer Light Box Pantone Book Consistency cards for shade variation	Dyeing Workshop Dyeing Lab Visit Dyeing industry
LU4: Perform Dyeing	**The trainee will be able to:** Arrange material for dyeing process as program sheet.	Operational knowledge of exhaust dyeing machine for woven fabric dyeing with required parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc.	**Total** 35 hours **Theory:**	Winch dyeing machine Jigger dyeing machine	Dyeing Workshop Industry floor

	Execute production on set parameters according to program.	Differentiating the dyeing process for woven dyeing at exhaust machines like winch, jigger and jet.	7 hours **Practical:** 28 hours	Jet dyeing machine	
LU5: **Verify quality of woven fabric dyeing by exhaust process**	**The trainee will be able to:** Verify quality parameters during production for matching with standards. Inspect physically dyeing process to maintain quality & in-time production Take corrective actions for any issues concerned with quality according to requirement.	Verifying methods of quality parameters such as pH, temperature, TDS, liquor ratio, chemicals and auxiliaries used during woven fabric dyeing at exhaust dyeing process. Inspecting the dyeing process for maintaining quality and timely completion of process. Troubleshooting of issues concerned with quality of dyeing process at exhaust dyeing methods.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Light Box Iron Tape Pantone Book	Dyeing Workshop Visit Dyeing industry Dyeing Lab
LU6: **Prepare production report for woven fabric dyeing by exhaust process**	**The trainee will be able to:** Verify production register maintain by machine operators shift-wise. Calculate and Record efficiency of every machine for evaluating machine production progress. Prepare shift production report.	Importance of recording of machine and dyeing parameters like temperature variation, time consumption, fault detection, parts positions, chemicals and auxiliaries adding time during dyeing process etc on production register Calculating efficiency of every machine and evaluating operator's capacity for future settings for production. Advantages of recording the running and stoppage time of machine for calculating machine and operator's efficiency on production register. Verifying the shift production and evaluating faults occurs during shift for finding its	**Total** 5 hours **Theory:** 1 hours **Practical:** 4 hours	Computer Calculator Telephone Printer Stationary	Class Room Dyeing Workshop

	Prepare reports for faults occur during shift.	causes and remedies in future dyeing plan.			

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Module-7

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Module 7: 0723001102 Carry out Exhaust Dyeing for Knitted Fabrics.

Objective of the module: This competency standard covers the skills and knowledge required to prepare and ensure dyeing parameters for knitted fabric dyeing by exhaust method according to dyeing plan with skills of shade matching under the required quality standards.

Duration: 80 hours **Theory:** 16 hours **Practical:** 64 hrs

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Follow Dyeing Plan for Knitted fabric dyeing by exhaust process	**The trainee will be able to:** Receive RFD (Ready for Dyeing) fabric for exhaust dyeing according to program sheet. Receive shade standards for shade matching.. Arrange material for dyeing process as program sheet. Interpret specs for exhaust dyeing process.	Knowledge of processing of knitted fabric ready for dyeing (RFD) used for dyeing at exhaust dyeing methods. Identifying shade required for the dyeing as per customer's order. Knowledge of methods of shade matching. Types of dyes, chemicals and auxiliaries used for exhaust dyeing for knitted fabrics. Understanding the spec sheet / order sheet for processing the exhaust dyeing on knitted fabrics.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Soft flow dyeing machine Winch dyeing machine Over lock machine Related Chemicals and dyes	Class Room and Workshop.
LU2: Prepare and ensure knitted fabric dyeing parameters for exhaust dyeing	**The trainee will be able to:** Instruct exhaust dyeing machine operators for dyeing process according to given parameters. Calculate amount of dyes and chemicals as	Knowledge of dyeing parameters such as pH, temperature, TDS, liquor ratio, chemicals and auxiliaries used during knitted fabric dyeing at exhaust dyeing process. Calculating skills for dyes and chemical calculations according to given recipe. Preparing dyes and chemicals and	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Soft flow dyeing machine Winch dyeing machine Over lock machine Iron Tape	Class Room Workshop. Visit dyeing industries Dyeing Workshop

	per given in recipe for production as per dyeing plan. Execute dyes and chemical preparation for exhaust dyeing at production level. Set machine parameters for exhaust dyeing process. Verify process parameters for dyeing as per dyeing plan. Supervise safety precautions as per job requirement.	conversion knowledge from recipe level to the production level. Setting of machine parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc. Knowledge of machine speed and proper handling of machine according to the type of operations, fabrics and product type. Verifying all parameters for machine and dyeing process according to dyeing plan. Supervising and verifying the safety precautions required for dyeing operators before start of machine operations.			Videos for related knowledge on multimedia
LU3: **Identify shade by using shade matching method for Knitted fabrics**	**The trainee will be able to:** Verify shade standards for shade matching. Match shade as per standards and make corrections if required.	Knowledge of various methods used for shade matching like spectrophotometer and light box with understanding of standard pantone book. Knowledge of shade matching, variation and make correction if any.	**Total** **5 hours** **Theory:** **1 hours** **Practical:** **4 hours**	Spectrophotometer Light Box Pantone Book Consistency cards for shade variation	Dyeing Workshop Dyeing Lab Visit Dyeing industry
LU4: Perform Dyeing	**The trainee will be able to:** Arrange material for dyeing process as program sheet.	Operational knowledge of exhaust dyeing machine for knitted fabric dyeing with required parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc. Differentiating the dyeing process for knitted dyeing at exhaust machines like soft flow	**Total** 35 hours **Theory:** 7 hours	Soft flow dyeing machine Winch dyeing machine	Dyeing Workshop Industry floor

	Execute production on set parameters according to program.	and winch.	**Practical:** 28 hours		
LU5: **Verify quality of Knitted fabric dyeing by exhaust process**	**The trainee will be able to:** Verify quality parameters during production for matching with standards. Inspect physically dyeing process to maintain quality & in-time production Take corrective actions for any issues concerned with quality according to requirement.	Verifying methods of quality parameters such as pH, temperature, TDS, liquor ratio, chemicals and auxiliaries used during knitted fabric dyeing at exhaust dyeing process. Inspecting the dyeing process for maintaining quality and timely completion of process. Troubleshooting of issues concerned with quality of dyeing process at exhaust dyeing methods.	**Total** **5 hours** **Theory:** **1 hours** **Practical:** **4 hours**	Light Box Iron Tape Pantone Book	Dyeing Workshop Visit Dyeing industry Dyeing Lab
LU6: **Prepare production report for Knitted fabric dyeing by exhaust process**	**The trainee will be able to:** Verify production register maintain by machine operators shift-wise. Calculate and Record efficiency of every machine for evaluating machine production progress. Calculate down time shift wise to verify productivity. Prepare shift production report.	Verifying of recording of machine and dyeing parameters like temperature variation, time consumption, fault detection, parts positions, chemicals and auxiliaries adding time during dyeing process etc on production register Calculating efficiency of every machine and evaluating operator's capacity for future settings for production. Advantages of recording the running and stoppage time of machine for calculating machine and operator's efficiency on production register. Verifying the shift production and evaluating faults occurs during shift for finding its causes and remedies in future dyeing plan.	**Total** **5 hours** **Theory:** **1 hours** **Practical:** **4 hours**	Computer Calculator Telephone Printer Stationary	Class Room Dyeing Workshop

	Prepare faults (machine and material) reports occurred during shift. Prepare and issue job card for electrical and mechanical faults to concerned person for its remedies.	Knowledge of machine and process faults occurring during shift for dyeing process. Preparing and issuing job card for electrical and mechanical faults with their remedies.			

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Module-8

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Module 8: 0723001103 Carry out Semi-Continuous Dyeing

Objective of the module: his competency standard covers the skills and knowledge required to prepare and ensure dyeing parameters for fabric dyeing by semi-continuous dyeing method according to dyeing plan with skills of shade matching under the required quality standards.

Duration: 80 hours **Theory:** 16 hours **Practical:** 64 hrs

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Follow Dyeing Plan for semi-continuous dyeing	**The trainee will be able to:** Receive RFD (Ready for Dyeing) fabric for semi-continuous dyeing according to program sheet. Receive shade standards for shade matching. Arrange material for dyeing process as per program sheet. Interpret specs for exhaust dyeing process.	Knowledge of processing of fabric (substrate) ready for dyeing (RFD) used for dyeing at semi-continuous dyeing methods. Identifying shade required for the dyeing as per customer's order. Knowledge of methods of shade matching. Types of dyes, chemicals and auxiliaries used for semi-continuous dyeing for fabrics. Understanding the spec sheet / order sheet for processing the semi-continuous dyeing on fabrics.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Pad Batch dyeing machine Related Chemicals and dyes	Class Room and Workshop.
LU2: Prepare and ensure dyeing parameters for semi-continuous dyeing	**The trainee will be able to:** Instruct semi-continuous dyeing machine operators for dyeing process according to given parameters. Calculate amount of dyes and chemicals as per given in recipe for	Knowledge of dyeing parameters such as pH, temperature, TDS, dye pick-up, chemicals and auxiliaries used during fabric dyeing at semi-continuous dyeing process. Calculating skills for dyes and chemical calculations according to given recipe. Preparing dyes and chemicals and conversion knowledge from recipe level	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Pad Batch dyeing machine Iron Tape	Class Room Workshop. Visit dyeing industries Dyeing Workshop

	production as per dyeing plan. Execute dyes and chemical preparation for semi-continuous dyeing at production level. Set machine parameters for semi-continuous dyeing process. Verify process parameters for dyeing as per dyeing plan. Supervise safety precautions as per job requirement.	to the production level. Setting of machine parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc. Knowledge of machine speed and proper handling of machine according to the type of operations, fabrics and product type. Verifying all parameters for machine and dyeing process according to dyeing plan. Supervising and verifying the safety precautions required for dyeing operators before start of machine operations.			Videos for related knowledge on multimedia
LU3: **Identify shade by using shade matching method for semi-continuous dyeing**	**The trainee will be able to:** Verify shade standards for shade matching. Match shade as per standards and make corrections if required.	Knowledge of various methods used for shade matching like spectrophotometer and light box with understanding of standard pantone book. Knowledge of shade matching, variation and make correction if any.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Spectrophotometer Light Box Pantone Book Consistency cards for shade variation	Dyeing Workshop Dyeing Lab Visit Dyeing industry
LU4: Perform Dyeing	**The trainee will be able to:** Arrange material for dyeing process as program sheet.	Operational knowledge of semi-continuous dyeing machine for fabric dyeing with required parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc. Differentiating the dyeing process for	**Total** 35 hours **Theory:** 7 hours	Pad batch dyeing machine	Dyeing Workshop Industry floor

	Execute production on set parameters according to program.	dyeing at semi-continuous machines like Pad batch and pad jig.	**Practical:** 28 hours		
LU5: **Verify quality for semi-continuous dyeing process**	**The trainee will be able to:** Verify quality parameters during production for matching with standards. Inspect physically dyeing process to maintain quality & in-time production Take corrective actions for any issues concerned with quality according to requirement.	Verifying methods of quality parameters such as pH, temperature, TDS, dye pick-up, chemicals and auxiliaries used during fabric dyeing at semi-continuous dyeing process. Inspecting the dyeing process for maintaining quality and timely completion of process. Troubleshooting of issues concerned with quality of dyeing process at semi-continuous dyeing methods.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Light Box Iron Tape Pantone Book	Dyeing Workshop Visit Dyeing industry Dyeing Lab
LU6: **Prepare production report for semi-continuous dyeing process**	**The trainee will be able to:** Verify production register maintain by machine operators shift-wise. Calculate and Record efficiency of every machine for evaluating machine production progress. Prepare shift production report. Prepare reports for faults occur during shift.	Verifying of recording of machine and dyeing parameters like temperature variation, time consumption, fault detection, parts positions, chemicals and auxiliaries adding time during dyeing process etc on production register Calculating efficiency of every machine and evaluating operator's capacity for future settings for production. Advantages of recording the running and stoppage time of machine for calculating machine and operator's efficiency on production register. Verifying the shift production and evaluating faults occurs during shift for finding its causes and remedies in future	**Total** 5 hours **Theory:** 1 hours **Practical:** 4 hours	Computer Calculator Telephone Printer Stationary	Class Room Dyeing Workshop

		dyeing plan.			

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Module-9

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Module 9: 0723001104 Carry out Continuous Dyeing

Objective of the module: This competency standard covers the skills and knowledge required to prepare and ensure dyeing parameters for fabric dyeing by continuous dyeing method according to dyeing plan with skills of shade matching under the required quality standards.

Duration: 80 hours **Theory:** 16 hours **Practical:** 64 hrs

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Follow Dyeing Plan for continuous dyeing	**The trainee will be able to:** Receive RFD (Ready for Dyeing) fabric for continuous dyeing according to program sheet. Receive shade standards for shade matching.. Arrange material for dyeing process as program sheet. Interpret specs for continuous dyeing process.	Knowledge of processing of fabric (substrate) ready for dyeing (RFD) used for dyeing at continuous dyeing methods. Identifying shade required for the dyeing as per customer's order. Knowledge of methods of shade matching. Types of dyes, chemicals and auxiliaries used for continuous dyeing for fabrics (substrate) Understanding the spec sheet / order sheet for processing the continuous dyeing on textile fabrics.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Pad Steam dyeing machine Pad Thermosol dyeing machine Related Chemicals and dyes	Class Room and Workshop.
LU2: Prepare and ensure dyeing parameters for continuous dyeing	**The trainee will be able to:** Instruct continuous dyeing machine operators for dyeing process according to given parameters. Calculate amount of dyes and chemicals as per given in recipe for	Knowledge of dyeing parameters such as pH, temperature, TDS, liquor ratio, chemicals and auxiliaries used during knitted fabric dyeing at continuous dyeing process. Calculating skills for dyes and chemical calculations according to given recipe. Preparing dyes and chemicals and	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Pad Steam dyeing machine Pad Thermosol dyeing machine Iron Tape	Class Room Workshop. Visit dyeing industries Dyeing Workshop

	production as per dyeing plan. Execute dyes and chemical preparation for continuous dyeing at production level. Set machine parameters for continuous dyeing process. Verify process parameters for dyeing as per dyeing plan. Supervise safety precautions as per job requirement.	conversion knowledge from recipe level to the production level. Setting of machine parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc. Knowledge of machine speed and proper handling of machine according to the type of operations, fabrics and product type. Verifying all parameters for machine and dyeing process according to dyeing plan. Supervising and verifying the safety precautions required for dyeing operators before start of machine operations.			Videos for related knowledge on multimedia
LU3: **Identify shade by using shade matching method for continuous dyeing**	**The trainee will be able to:** Verify shade standards for shade matching. Match shade as per standards and make corrections if required.	Knowledge of various methods used for shade matching like spectrophotometer and light box with understanding of standard pantone book. Knowledge of shade matching, variation and make correction if any.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Spectrophotometer Light Box Pantone Book Consistency cards for shade variation	Dyeing Workshop Dyeing Lab Visit Dyeing industry
LU4: **Perform Dyeing**	**The trainee will be able to:** Arrange material for dyeing process as program sheet.	Operational knowledge of continuous dyeing machine for fabric dyeing with required parameters like speed, capacity, working principle, temperature control, productivity, steam, air valve, water etc. Differentiating the dyeing process for dyeing at continuous machines like pad	**Total** 35 hours **Theory:** 7 hours	Pad Steam dyeing machine Pad Thermosol dyeing machine	Dyeing Workshop Industry floor

	Execute production on set parameters according to program.	steam and pad thermosol.	**Practical:** 28 hours		
LU5: **Verify quality for continuous dyeing process**	**The trainee will be able to:** Verify quality parameters during production for matching with standards. Inspect physically dyeing process to maintain quality & in-time production Take corrective actions for any issues concerned with quality according to requirement.	Verifying methods of quality parameters such as pH, temperature, TDS, liquor ratio, chemicals and auxiliaries used during fabric dyeing at continuous dyeing process. Inspecting the dyeing process for maintaining quality and timely completion of process. Troubleshooting of issues concerned with quality of dyeing process at continuous dyeing methods.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Light Box Iron Tape Pantone Book	Dyeing Workshop Visit Dyeing industry Dyeing Lab
LU6: **Prepare production report for continuous dyeing process**	**The trainee will be able to:** Verify production register maintain by machine operators shift-wise. Calculate and Record efficiency of every machine for evaluating machine production progress. Prepare shift production report. Prepare reports for faults occur during shift.	Verifying of recording of machine and dyeing parameters like temperature variation, time consumption, fault detection, parts positions, chemicals and auxiliaries adding time during dyeing process etc on production register Calculating efficiency of every machine and evaluating operator's capacity for future settings for production. Advantages of recording the running and stoppage time of machine for calculating machine and operator's efficiency on production register.Verifying the shift production and evaluating faults occurs during shift for finding its causes and remedies in future dyeing plan.	**Total** 5 hours **Theory:** 1 hours **Practical:** 4 hours	Computer Calculator Telephone Printer Stationary	Class Room Dyeing Workshop

TEXTILE WET PROCESSING

Module-10

CBT Curriculum

National Vocational Certificate Level 3

Version 1 - November, 2019

Module 10: 0723001105 Carry out laboratory testing of dyeing process

Objective of the module: This competency standard covers the skills and knowledge required to perform laboratory tests like pH, tensile strength, color fastness and shrinkage to maintain quality of dyed fabrics.

Duration: 200 hours **Theory:** 40 hours **Practical:** 160 hrs

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Select textile substrate sample	**The trainee will be able to:** Select sample from marketing department for quality tests. Select sample during production for testing purpose.	Knowledge of textile substrate samples before the dyeing process and quality testing before dyeing. Knowledge of textile substrate samples during the dyeing process and quality testing during and after dyeing process.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Sample for dyeing	Class Room and Workshop.
LU2: Perform Physical lab testing	**The trainee will be able to:** Calculate count of yarn as per given standard. Identify construction of fabric according to required parameters. Perform physical testing according to customers' requirement as follows: • pH of the fabric • Tear and tensile test of woven fabric • Seam slippage • Abrasion and	Indentifying the yarn, types of yarn, calculating the yarn count and types of yarn numbering system. Identifying the type of fabric with construction type. Differentiating the difference between knitted fabric and woven fabric. Knowledge of power of hydrogen (pH) and its effect on dyeing process. Knowledge of fabric testing like tear test, tensile strength test, seam slippage test, snagging test, abrasion and pilling test of woven fabrics. Importance of dimensional stability of fabric (shrinkage test) before and after	**Total** 100 hours **Theory:** 20 hours **Practical:** 80 hours	Hydro extractor Humidifier Scissor Manual of Quality tests Pantone book Xenon Lamp GSM Cutter Pilling Tester Weighing scale Pick glass Light Box Data Color Crock meter IR Lamp Fado meter Iron Grey Scale	Class Room Workshop. Visit dyeing industries Dyeing Workshop Videos for related knowledge on multimedia

	Pilling test. • Snagging test • Sinking test (Absorbency) • Color fastness (light, water, perspiration, chlorine, rubbing) • Perform shrinkage test. • Perform shade matching • Fabric GSM testing • Perform Berger whiteness test • Perform Barium activity number test	dyeing. Importance of color fastness tests for dyed substrates and types of color fastness tests like light, water, perspiration, crocking (rubbing), chlorine and washing fastness tests according to international acceptable testing manuals (AATTC, ISO, ASTDM). Identifying shade and knowledge of shade matching and shade variations with shade consistency. Knowledge and importance of Berger whiteness test. Importance and usage of Barium activity number test.		Tongue T-Square Marker Scale Blue Scale Launder-o-meter Tensile strength tester Tear tester Ring Wrapping reel Snagging tester machine	
LU3: **Perform Chemical Testing**	**The trainee will be able to:** Perform chemical testing as per standard. Check Water hardness through water hardness test Perform sizing chemical test (TEGWA test) Perform dyestuff testing as per standard (dyes identification testing) Test dyes and chemicals batch-wise.	Importance of chemical testing during dyeing process. Knowledge of water hardness (TDS) test before dyeing and during dyeing process and its effect on dye pick-up quality. Knowledge of sizing chemical test (TEGWA) and its effect on dyeing process. Identifying the dyestuff and its tests with required standards. Testing of chemicals strength, properties and auxiliaries used for dyeing process.	**Total** 70 hours **Theory:** 14 hours **Practical:** 56 hours	Multi fibre Wash Tech pH meter pH Strips Baume' meter TDS meter Stop Watch Beakers Pippets Pad steam Padder Burner Flame tester Glass Rod Stirrer Conical flask PPEs Spatula	Dyeing Workshop Dyeing Lab Visit Dyeing industry

				IR Dyeing machine Tumble dryer Filter paper	
LU4: Verify final results	**The trainee will be able to:** Determine the evaluation criteria of the tests. Evaluate the testing result according to the defined quality standards Settle machine and dyeing parameters according to quality testing results	Verifying an evaluating the test criteria according to international standards as per defined in AATTC, ISO, ASTM methods. Matching the test results according to dyeing plan and quality standards. Setting of machine and dyeing parameters according to test results for dyeing process as per customers' requirement.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	AATCC Manual ISO Manual ASTM Manual	Dyeing Workshop Industry floor
LU5: **Maintain** **Quality Records**	**The trainee will be able to:** Record batch-wise testing reports (dyes and chemical) on daily basis. Coordinate with concerned person regarding production batches. Maintain record on daily basis.	Recording and maintain the dyes and chemical test results for upcoming batches for dyeing process. Coordinating with concerned persons for running batches at dyeing floor regarding production with standards. Maintaining the records of tests on daily basis on register.	**Total** 10 hours **Theory:** 2 hours **Practical:** 8 hours	Computer Printer Stationary	Dyeing Workshop Visit Dyeing industry Dyeing Lab

General assessment guidance for Industrial Garment Expert Level-2

Good practice in Pakistan makes use of sessional and final assessments, the basis of which is described below. Good practice by vocational training providers in Pakistan is to use a combination of these sessional and final assessments, combined to produce the final qualification result.

Sessional assessment is going on all the time. Its purpose is to provide feedback on what students are learning:

- to the student: to identify achievement and areas for further work
- to the teacher: to evaluate the effectiveness of teaching to date, and to focus future plans.

Assessors need to devise sessional assessments for both theoretical and practical work. Guidance is provided in the assessment strategy

Final assessment is the assessment, usually on completion of a course or module, which says whether or not the student has "passed". It is – or should be – undertaken with reference to all the objectives or outcomes of the course, and is usually fairly formal. Considerations of security – ensuring that the student who gets the credit is the person who did the work – assume considerable importance in final assessment and declared after performance based assessment at the each module as “Competent” or “Not Yet Competent”

Methods of assessment

For lessons with a high quantity of theory, written or oral tests related to learning outcomes and/ or learning content can be conducted. For workplace lessons, assessment can focus on the quality of planning the related process, the quality of executing the process, the quality of the product and/or evaluation of the process.

Methods include direct assessment, which is the most desirable form of assessment. For this method, evidence is obtained by direct observation of the student’s performance.

Examples for direct assessment of Textile Wet Processing (Dyeing Technologist) Level-3 include:

- Work performances, for example dyeing of woven and knitted fabrics by exhaust methods, types of dyeing and quality test for standards on required parameters, or preparing workstation for performing the job.
- Demonstrations, for example demonstrating the tools and equipment requires for dyeing and quality control the pre-dyed & dyed textile substrate according to the given spec sheet.

- Direct questioning, where the assessor would ask the student why he is dyeing or testing the textile substrate in a certain way, or how the student will find out about the current and future requirements for the textile dyeing.
- Paper-based tests, such as multiple choice or short answer questions on types of dyes, chemical, auxiliaries required to dye the textile substrate on specific dyeing machine, preparing the work station for dyeing or developing productive working relationships with associates.

Indirect assessment is the method used where the performance could not be watched and evidence is gained indirectly.

Examples for indirect assessment of a Textile Wet Processing (Dyeing Technologist) Level-3 include:

- Work products, such as a photo or sample of dyed textile substrate made by trainee are present at portfolio.
- Workplace documents, such as a diary of daily working that has been ready for finishing or packing.

Indirect assessment should only be a second choice. (In some cases, it may not even be guaranteed that the work products were produced by the person being assessed.)

Principles of assessment

All assessments should be valid, reliable, fair and flexible:

Fairness means that there should be no advantages or disadvantages for any assessed person. For example, it should not happen that one student gets prior information about the type of work performance that will be assessed, while another candidate does not get any prior information.

Validity means that a valid assessment assesses what it claims to assess. For example, if stitching skills are to be assessed and certificated, the assessment should involve performance criteria that are directly related to that stitching activity. An interview about the types of the stitching processes on different stitching machine would not meet the performance criteria.

Reliability means that the assessment is consistent and reproducible. For example, if the work performance of cropping and finishing the garment has been assessed, another assessor (eg the future employer) should be able to see the same work performance and witness the same level of achievement.

Flexibility means that the assessor has to be flexible concerning the assessment approach. For example, if there is a power failure during the assessment, the assessor should modify the arrangements to accommodate the students' needs.

Assessment strategy for the Textile Wet Processing (Dyeing Technologist) Level-3 **Curriculum**

This curriculum consists of 10 modules:

- Module 1: Apply Work Health and Safety Practices (WHS)
- Module 2: Identify and Implement Workplace Policy and Procedures
- Module 3: Communicate at Workplace
- Module 4: Perform Computer Application Skills
- Module 5: Manage Personal Finances
- Module 6: Carryout Exhaust dyeing for woven fabrics
- Module 7: Carryout Exhaust dyeing for knitted fabrics
- Module 8: Carryout Semi-continuous dyeing
- Module 9: Carryout Continuous dyeing
- Module 10: Carry out laboratory testing of wet dyeing process

Sessional assessment

The sessional assessment for all modules shall be in two parts: theoretical assessment and practical assessment. The sessional marks shall contribute to the final qualification.

Theoretical assessment for all learning modules must consist of a written paper lasting at least one hour per module. This can be a combination of multiple choice and short answer questions.

For practical assessment, all procedures and methods for the modules must be assessed on a sessional basis. Guidance is provided below under Planning for assessment.

Final assessment

Final assessment shall be in two parts: theoretical assessment and practical assessment. The final assessment marks shall contribute to the final qualification.

The final theoretical assessment shall consist of one 3-hour paper. The paper shall consist of half multiple choice and half short-answer questions. This part shall cover the dyeing and quality modules:

- Module 6: Carryout Exhaust dyeing for woven fabrics

- Module 7: Carryout Exhaust dyeing for knitted fabrics
- Module 8: Carryout Semi-continuous dyeing
- Module 9: Carryout Continuous dyeing
- Module 10: Carry out laboratory testing of wet dyeing process

For the final practical assessment, each student shall be assessed over a period of two days, with two 3-hour sessions on each day. This represents a total of four sessions totaling 12 hours of practical assessment for each student. During this period, each student must be assessed on his/her ability to dye one complete any textile substrate as per given in assessment package as trained in different modules (Module 6 to Module 10) of the course.

The assessment team

The number of assessors must meet the needs of the students and the training provider. For example, where two assessors are conducting the assessment, there must be a maximum of five students per assessor. In this example, a group of 20 students shall therefore require assessments to be carried out over a four-day period. For a group of only 10 students, assessments would be carried out over a two-day period only.

Planning for assessment

Sessional assessment: assessors need to plan in advance how they will conduct sessional assessments for each module. The tables on the following pages are for assessors to use to insert how many hours of theoretical and practical assessment will be conducted and what the scheduled dates are.

Final assessment: Training providers need to decide ways to combine modules into a cohesive two-day final assessment program for each group of five students. Training providers must agree the stitching program for practical assessments in advance.

Complete list of machines.

Sr#	Description
1	Winch Dyeing Machine (Pilot scale) (Capacity 15 Kg and width 60”)
2	Over lock machine
3	Mini Boiler
4	Jigger Dyeing Machine (Pilot scale) (Capacity 15 Kg and width 60”)
5	Jet Dyeing Machine (Pilot scale) (Capacity 15 Kg)
6	Batcher (A-frame)
7	Pad batch Dyeing Machine (Pilot scale) (machine width 1800 mm)
8	Pad thermosol Dyeing Machine (Pilot scale) (width 1800 mm)
9	Pad steam Dyeing Machine (Pilot scale) (width 1800 mm)
10	Cone Dyeing Machine (Pilot scale) (Capacity 15 Kg)
11	Rope Dyeing Machine (Pilot scale) (Capacity 40 ropes)
12	Soft flow Dyeing Machine (Pilot scale) (Capacity 15 Kg and width 60”)
13	Hydro exactor
14	Tumble dryer
15	Stenter Dyeing Machine (Pilot scale) (width 1800 mm)

Complete list of tools and equipment.

Sr#	Description
1	First Aid Box
2	Fire Extinguishers
3	Fire hose reel
4	Fire blanket
5	Telephone set
6	Smoke detecting Alarm
7	Manual of organizational Safety rules and regulations

8	Manual of techniques of energy conservation
9	Manual of local Standards of environmental quality.
10	Manual of Pollution reduction and prevention methods/ solutions.
11	Manual of air emissions and control technologies.
12	Manual of water conservation fixtures
13	Manual of Methods of Erosion control
14	Spectrophotometer
15	Pantone book
16	Consistency cards for shade variation
17	Humidifier
18	Testing Manuals (AATCC, ISO, ASTM)
19	Multi fibre, Wash tech
20	Xenon Lamp
21	GSM Cutter
22	Pilling tester
23	PH meter
24	Baume’ meter
25	TDS meter
26	Stop watch
27	Pad steam
28	Pick glass
29	Magnifier glass
30	Padder
32	Data color
33	Pad thermosol
34	Burner
35	Flame tester
36	Stirrer (Magnate, stand type)
37	Conical flask
38	PPEs (lab coat)
39	Spatula

40	Crock meter
41	IR lamp
42	Fado meter (light fastness tester)
43	Pilling tester
44	Crock meter
45	Grey scale
46	Blue scale
47	Tongue
48	Pencil
49	Marker
50	Scale
51	T-square
52	Measuring tape
53	Wash tech
54	IR dyeing machine
55	Filter paper
56	Washing machine
57	Tensile strength tester
58	Person protection and safety equipment
59	Manual of Safety signs and symbols
60	Waste disposal SOPs
61	Scissors
62	Air dryer
63	Fabric Drying Oven
64	Mug
65	Textile Trolleys
66	PPEs - Gloves - Goggles - Shoes - Mask

	- Apron - Safety Cap
67	Compressor
68	Natural Gas for boiler
69	pH meter
70	TDS meter
71	Light Box
72	Jack
73	Calculator
74	Weighing balance
75	Fax machine
76	Mobile phone
77	Audio System
78	Speakers
79	Multimedia
80	Light box (D65, TL84, CWF, UV,INCA)

Complete list of Consumables

Sr#	Description
1	Plastic Beaker 500 ml and 250 ml
2	Measuring Cylinder 1000 ml
3	Buckets
4	Glass Beaker 500 ml and 250 ml
5	Glass Rods
6	Textile Marker
7	pH stripes
8	Thermal boiler
9	Water
10	Direct dyes (Yellow, Red, Blue)

11	Reactive dyes (Yellow, Red, Blue)
12	Salt
13	Sodium Carbonate (Soda Ash)
14	Formic Acid
15	Wetting Agents
16	Leveling Agents
17	Sequestering Agent
18	Washing-off Agents
19	Anti-foam Agents
20	Fixing Agents
21	Sodium Hydroxide
22	Cotton Fabric RFD (Knitted)
23	Cotton Towel RFD (Knitted)
24	Cotton Fabric RFD (Woven)
25	Disperse dyes (Yellow, Red, Blue)
26	Acetic acid
27	Dispersing Agents
28	Sodium Hydro sulphite (Sodium dithionite)
29	Anti creasing agent
30	PC Fabric RFD (Woven)
31	Polyester fabric RFD (Knitted)
32	Polyethylene cover
33	Masking brown tape
34	Sodium Silicate
35	Sodium Hydroxide (Caustic Soda)
36	Pigment, Vat, disperse dyes (Yellow, Red, Blue)
37	Urea
38	Anti-migrate agent
39	Sulphur dyes, Vat (Yellow, Red, Blue)
40	Hydrogen peroxide
41	Formic Acid

42	Cotton Cones of 2.25 lbs each (RFD- Ready for dyeing)
43	Indigo dyes
44	Cotton yarn
45	Sulphuric acid (also in jet)
46	Vat dyes (Yellow, Red, Blue)
47	Towel fabric (RFD- Ready for dyeing / development)
48	Cotton denim fabric (RFD- Ready for dyeing / development)
49	Pigment (Yellow, Red, Blue)
50	Binder
51	Cotton Garment RFD (Knitted)
52	Cotton Garment RFD (Woven)
53	Denim Garment
54	Denim Knitted Fabric RFD
55	Denim Woven Fabric RFD
56	Office files (Stationary related items)

Credit values

The credit value of the National Certificate Level 3 in Textile Wet Processing (Dyeing Technologist) is defined by estimating the amount of time/ instruction hours required to complete each competency unit and competency standard. The NVQF uses a standard credit value of 1 credit = 10 hours of learning (Following Higher Education Commission (HEC) guidelines.

The credit values are as follows:

Competency Standard	**Estimate of hours**	**Credit**
Apply Work Health and Safety Practices (WHS)	30	03

Competency Standard	Estimate of hours	Credit
Identify and Implement Workplace Policy and Procedures	20	02
Communicate at Workplace	30	03
Perform Computer Application Skills	40	4
Manage Personal Finances	30	03
Carryout Exhaust dyeing for woven fabrics	80	08
Carryout Exhaust dyeing for knitted fabrics	80	08
Carryout Semi-continuous dyeing	80	08
Carryout Continuous dyeing	80	08
Carry out laboratory testing of wet dyeing process	200	20

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