Curriculum
For
"Environmental Technology"

(Environmental Services Attendant)
(Level -2)

27th to 30th December 2021

National Vocational & Technical Training Commission

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Introduction

Definition/Description of the training programme for *Environmental Technology*

Environmental technology refers to the field of science concerned with reducing the human impact on the environment through technological advances or improvements. Some common applications of environmental technology deal with reducing energy consumption, limiting man-made damage to the physical environment, and reducing waste. Areas of research in the field may involve cleaner energy sources, improved energy efficiency in transportation and buildings, and methods that decrease or prevent pollution. This is a broad field that draws on many sciences, some of which include chemistry, ecology, and biology. Innovation and advances in environmental science may have commercial applications, save money, or be designed to meet government regulations.

One focus of environmental technology is on finding, using, and developing clean sources of energy that have a limited impact on the natural environment. The use of fossil fuels in electricity production transportation is not only responsible for releasing particulate matter known as smog, but also for emitting carbon dioxide. According to the United States government and others, carbon dioxide is a greenhouse gas and pollutant with the potential to harm human health through climate change. So-called alternative energy sources could reduce pollution, including air pollutants like carbon dioxide.

Basic economic factors are often a spur to advances in environmental technology. This is due in part to the fact that cost-saving solutions are usually the most efficient. Cost increases of fuels such as gasoline, for instance, have led to technology aimed at reducing fuel consumption. Advances in automobile fuel efficiency lower fuel costs while reducing harmful emissions. Many countries have vehicle efficiency regulations that were originally developed to conserve energy and keep fuel prices low but also help combat pollution problems like smog.

The main purpose of this course is to enable the student to play his/her vital role in Environmental Technology through modern knowledge driven approach.

In short, the main objective of this project is to equip the students with knowledge and skills so that they could be able to handle the issues related with rational use of inputs, minimize the economic cost and can help to enhance competencies to promote Environmental

Technology. The effort of new curriculum development by NAVTTC will help the Environmental of Pakistan to hire trained and skilled experts that will contribute in the improvement of Environmental Technology.

A first-hand experience of technological approaches to impact management, through field site visits where particular technologies are in use, is a feature of the course. Aspects of the economic and legislative issues related to the management of the environment and the use of technologies will also be covered in this course.

Purpose of the Training Programme

The purpose of this qualification (set of four occupations) is to set professional standards for Environmental Technology and to train the unskilled workers (men and women) across the country. The skilled labors will serve as key elements to improve the Environment using Technologies. Upon successful completion of this course the trainees should be able to know the basic and specific objectives of these qualifications are as under:

- Improve the professional competence regarding Environmental Technology
- Capacitate the local community and trainers in modern Competency Based Training (CBT)
- Provide flexible pathways and progressions in Environmental Technology
- Enable the trainees to perform their duties in efficient manner
- Establish a standardised and sustainable system of training on Environmental Technology in Pakistan
- Understand the issues related to Environment
- Know the relevant industry stakeholders & their role

Overall Objectives of Training Programme

The primary objective of this training program is to provide the trainees with updated knowledge and skills required for Environmental Technology to cope the challenges of the field. After qualifying the course at different levels (Level 1 – 5), the students will be able to get job in the relevant sector and also be able to perform as entrepreneurs. The contents of the course are specifically designed in such a way that it covers all the major Environmental Technology aspects hence, the students are sufficiently exposed to operational requirements of this sector and are ready to perform their duties confidently.

The main objectives of this project are to:

- Improve the quality of training delivery and setting national benchmarks for training of agriculture technology (Level 1-5) at national level.
- Provide progressive and flexible learning environment for trainees.
- Provide basics for competency-based assessment.
- Establish a standardized and sustainable training system.

Competencies to Be Gained After Completion Of Course

- **A-** Perform Housekeeping at Workplace
- **B-** Follow Basic Health and Safety Practices at Workplace
- **C-** Identify Tools, Equipment and Supplies related to Environmental Technology
- **D-** Ensure safe storage of Tools, Equipment and Supplies at Workplace
- **E-** Handle Hazardous Materials / Chemicals at Workplace
- **F-** Inform in case of accident and emergency situations to concerned person
- **G-** Adhere to organizational policies and regulations

Possible Available Job Opportunities Available Immediately and Later In The Future

- Environmental Lab Attendant
- Environmental Services Attendant

Trainee Entry Level

For National Vocational Certificate Level-2 in Environmental Services Attendant, the entry requirement is Middle.

Minimum Qualification of Trainer

2-5 years of professional experience in Technical industry/ DAE/Level 5 (Environmental Technology)/ Bachelors degree in Environmental Sciences

Recommended Trainer: Trainee Ratio

The recommended maximum trainer: trainee ratio for this programme is 1 trainer for 25 trainees.

Medium of Instruction i.e. Language of Instruction

Instruction will be Urdu, English or Regional Language.

Duration of the Course (Total Time, Theory & Practical Time)

This curriculum comprises 07 modules. The recommended delivery time is 600 hours. Delivery of the course could therefore be full time, 5 days a week. 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: Perform Housekeeping at Workplace	14	66	80
Module 2: Follow Basic Health and Safety Practices at Workplace	20	90	110
Module 3: Identify Tools, Equipment and Supplies related to Environmental Technology	15	75	90
Module 4: Ensure safe storage of Tools, Equipment and Supplies at Workplace	15	75	90
Module 5: Handle Hazardous Materials / Chemicals at Workplace	18	72	90
Module 6: Inform in case of accident and emergency situations to concerned person	16	54	70
Module 7: Adhere to organizational policies and regulations	22	48	70

Summary of Competency Standards

The proposed curriculum is composed of 23 cores along with generic modules that will be covered in 3600 hrs. It is proposed that the course will be delivered in three years period (Level 1-5). The distribution of contact hours (practical & theory) is given below:

- **Theory:** (20%)   **Practical** (80%)
- **Theory:** 120**hours**   **Practical:** 480 **hours**

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

Sequence of the Modules

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. Each module also incorporates the industrial needs of Pakistan.

The distribution table is shown below:

Environmental Services Attendant - 6 Months		
Module 1: Perform Housekeeping at Workplace **80 Hours**		**Module 7:** Adhere to organizational policies and regulations **70 Hours**
Module 2: Follow Basic Health and Safety Practices at Workplace **110 Hours**		
Module 3: Identify Tools, Equipment and Supplies related to Environmental Technology **90 Hours**	**Module 4:** Ensure safe storage of Tools, Equipment and Supplies at Workplace **90 Hours**	
Module 7: Handle Hazardous Materials / Chemicals at Workplace **90 Hours**		
Module 6: Inform in case of accident and emergency situations to concerned person **70 Hours**		

Summary – Overview of the Curriculum

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 1: Perform Housekeeping at Workplace **Aim:** After successful completion of this module, the trainee is competent in performing Housekeeping at Workplace	**LU1:** Prepare cleaning and disinfecting solutions **LU2:** Clean the workplace **LU3:** Disinfect the workplace **LU4:** Gather waste material for disposal **LU5:** Keep equipment / material in order	14	66	80
Module 2: Follow Basic Health and Safety Practices at Workplace **Aim:** After successful completion of this module, the trainee is competent in Following Basic Health and Safety Practices at Workplace	**LU1:** Wear Personal Protective Equipment (PPEs) **LU2:** Identify hazards at workplace **LU3:** Identify safety signs and symbols at workplace **LU4:** Follow basic rules and regulations at workplace **LU5:** Ensure adequate supply of first aid in case of emergency **LU6:** Ensure all necessary precautions against fire	20	90	110

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 3: Identify Tools, Equipment and Supplies related to Environmental Technology **Aim:** After successful completion of this module, the trainee is competent in Identifying Tools, Equipment and Supplies related to Environmental Technology	**LU1:** Identify tools and equipment related to Environmental Technology **LU2:** Identify supplies related to Environmental Technology	15	75	90
Module 4: Ensure safe storage of Tools, Equipment and Supplies at Workplace **Aim:** After successful completion of this module, the trainee is competent in Ensuring safe storage of Tools, Equipment and Supplies at Workplace	**LU1:** Ensure safe storage of tools and equipment at workplace **LU2:** Ensure safe storage of supplies at workplace	15	75	90

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 5: Handle Hazardous Materials / Chemicals at Workplace **Aim:** After successful completion of this module, the trainee is competent in Handling Hazardous Materials / Chemicals at Workplace	**LU1:** Identify hazardous materials / chemicals **LU2:** Isolate hazardous from non-hazardous materials / chemicals **LU3:** Ensure safe handling of hazardous materials / chemicals	18	72	90
Module 6: Inform in case of accident and emergency situations to concerned person **Aim:** After successful completion of this module, the trainee is competent in Informing in case of accident and emergency situations to concerned person	**LU1:** Identify emergency situation **LU2:** Report the emergency to concerned person at workplace	16	54	70

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 7: Adhere to organizational policies and regulation **Aim:** After successful completion of this module, the trainee is competent in Adhering to organisational policies and regulation	**LU1:** Identify organizational policies and regulations **LU2:** Follow organizational policies and regulations	22	48	70

Modules

Module 1: Perform Housekeeping at Workplace

Objective of the module: After completing this module, the learner will be able to performing Housekeeping at Workplace. Communicate work and health safety assess at work place. It describes generic responsibilities applicable to employees under managerial or supervisory responsibilities.

Duration: 80 hours **Theory:** 14 hours **Practical:** 66 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Prepare cleaning and disinfecting solutions	**The trainee will be able to:** 1. Identify different cleaning solutions 2. Identify different disinfecting solutions 3. Follow Standard Operating Procedures (SOPs) for preparation of solutions 4. Follow prescribed ratio for preparation of the solutions 5. Make a new diluted solution as per requirement	• Importance of Housekeeping at Workplace • Define cleaning and disinfecting solutions • Differentiate cleaning and disinfecting solutions • Methods to prepare different Diluted and Concentrated solutions as per SOPs	**Total:** 19hrs **Theory:** 4hrs **Practical:** 15hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Cleaning Solutions • Disinfecting Solutions • Buckets • Cleaning Tools Non Consumable • White board • Multimedia • Internet • Computer system	• Class Room/ Simulated environment

				• PPEs	
LU2: Clean the workplace	**The trainee will be able to:** 1. Locate area to be cleaned 2. Wear personal protective equipment as required 3. Clean dirty surfaces according to SOPs	• Cleaning different areas using different methods (Moping, dusting, scrubbing, etc.) • Uses of different cleaners (Surface cleaners, equipment cleaners, etc.) • Importance of using Personal Protective Equipment (PPE) for specific task	**Total:** 15hrs **Theory:** 3hrs **Practical:** 12hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Cleaning Solutions • Buckets • Cleaning Tools Non Consumable • White board • Multimedia • Internet • Computer system • PPEs	• Class Room/ Simulated environment
LU3: Disinfect the workplace	**The trainee will be able to:** 1. Locate area to be disinfected 2. Prepare required disinfecting solution as per SOPs 3. Perform disinfection according to SOPs	• Describe different methods of Disinfection (Spraying, swabbing, etc.) • Describe different Disinfectant Chemical (Alcohol, Chlorine, Ultraviolet radiation, etc.)	**Total:** 14hrs **Theory:** 2hrs **Practical:** 12hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Cleaning Solutions	• Class Room/ Simulated environment

				Disinfecting Solutions
	4. Ensure ventilation of the area	• Methods to disinfect different tools and surfaces using (PPEs)		• Disinfecting Solutions
				• Buckets
				• Cleaning Tools
				Non Consumable
				• White board
				• Multimedia
				• Internet
				• Computer system
				• PPEs
LU4: Gather waste material for disposal	**The trainee will be able to:** 1. Recognize types of the waste 2. Avoid mixing of different waste 3. Discard waste properly	• Define Waste Management • Identify different waste materials (Solid, liquid, etc.) • Differentiate between types of waste	**Total:** 15hrs **Theory:** 3hrs **Practical: 1**2hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Waste Bins • Bin Bags Non Consumable • White board • Multimedia • Internet • Computer system • PPEs	• Class Room/ Simulated environment

The last column "Class Room/ Simulated environment" belongs to the LU4 row.

LU5: Keep equipment / material in order	The trainee will be able to:		Total: 17hrs	Consumable	• Class Room/ Simulated environment
	1. Identify tools/equipment	• Enlist different types of tools/equipment required for cleaning and disinfection	Theory: 2hrs	• Notebooks	
	2. Handle the equipment properly		Practical: 15hrs	• Pencils	
	3. Lubricate the equipment as per requirement	• Use of equipment as per SOPs		• Erasers	
	4. Clean equipment after use	• Procedure to clean equipment		• Sharpeners	
	5. Inform the in-charge if any tool needs repair	• Procedure for storing equipment/material safely		• Cleaning Solutions	
	6. Store the equipment/material safely after use			• Disinfecting Solutions	
				• Buckets	
				• Cleaning Tools	
				Non Consumable	
				• White board	
				• Multimedia	
				• Internet	
				• Computer system	
				• Equipment/tools	
				• PPEs	

Module 2: Follow Basic Health and Safety Practices at Workplace

Objective of the module: After completing this module, the learner will be able to follow basic Health and Safety Practices at Workplace. The underpinning knowledge regarding Occupational Safety and Health (OSH) will be sufficient to provide the basis for the job at workplace.

Duration: 110 hours   **Theory:** 20 hours   **Practical:** 90 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Wear Personal Protective Equipment (PPEs)	**The trainee will be able to:** 1. Identify different PPEs required at workplace 2. Inspect PPEs before use 3. Demonstrate methods to wear PPEs 4. Follow Standard Operating Procedures (SOPs) for use of safety harness 5. Use PPEs as per standard recommendation of OEM at plant	• PPEs required at workplace • Standard Operating Procedures (SOPs) for use of safety harness • Original Equipment Manufacturer (OEM) at plant	**Total:** 19hrs **Theory:** 4hrs **Practical:** 15hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Environmental Technology tools/equipment Non Consumable • White board • Multimedia • Internet • PPEs • Computer system	• Class Room/ Simulated environment

| LU2: Identify hazards at workplace | The trainee will be able to:
1. Identify hazardous chemicals at workplace
2. Identify hazardous waste at workplace | • Hazardous chemicals at workplace
• Hazardous waste at workplace | Total: 18hrs
Theory: 3hrs
Practical: 15hrs | Consumable
• Notebooks
• Pencils
• Erasers
• Sharpeners
• Fire extinguishers
• Extinguishing agents
Non Consumable
• White board
• Multimedia
• Internet
• Computer system
• PPEs | • Class Room/Lab/ Simulated environment |

LU3: Identify safety signs and symbols at workplace	The trainee will be able to:	• Spraying	Total: 18hrs	Consumable	• Class Room/Lab/ Simulated environment
	1. Identify fire safety signs	• Swabbing	Theory: 3hrs	• Notebooks	
	2. Identify emergency exit signs	• Scrubbing/mopping	Practical: 15hrs	• Pencils	
	3. Identify road traffic regulations within the workplace	• UV Light		• Erasers	
	4. Identify prohibition signage	• Fumigation		• Sharpeners	
	5. Identify electrical and mechanical safety signs			• Fire extinguishers	
	6. Identify other warning signs and symbols			• Extinguishing agents	
				Non Consumable	
				• White board	
				• Multimedia	
				• Internet	
				• Computer system	
				• PPEs	

			Total: 19hrs	Consumable	Class
LU4: Follow basic rules and regulations at workplace	**The trainee will be able to:** 1. Remove tools and material from work area and place in storage spaces/racks 2. Remove the debris from work area 3. Clean oil/leakage/spillage as per requirement 4. Follow SOPs for working at height	• Proper storage of tools and equipment • Standards for working at height • Identify road traffic regulations within the workplace • Disposal of the waste materials as per regulations	**Total:** 19hrs **Theory:** 4hrs **Practical:** 15hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Fire extinguishers • Extinguishing agents Non Consumable • White board • Multimedia • Internet • Computer system • PPEs	• Class Room/Lab/ Simulated environment
LU5: Ensure adequate supply of first aid in case of emergency	**The trainee will be able to:** 1. Identify first aid kit items 2. Make the standard list of first aid items 3. Follow the instructions of first aid trained person 4. Follow standard procedure for first aid and emergency	• First Aid Kit • list of first aid items • standard procedure for first aid and emergency	**Total:** 18hrs **Theory:** 3hrs **Practical:** 15hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Fire extinguishers • Extinguishing agents	• Class Room/Lab/ Simulated environment

				Non Consumable	
				• White board	
				• Multimedia	
				• Internet	
				• Computer system	
				• PPEs	
LU6: Ensure all necessary precautions against fire	**The trainee will be able to:** 1. Identify all the fire hazards 2. Identify different type of fire safety equipment 3. Follow emergency response plan in case of fire 4. Use fire extinguisher 5. Participate in emergency fire drill	• Fire hazards • Type of fire safety equipment. • Emergency response plan • Emergency fire drill	**Total:** 18hrs **Theory:** 3hrs **Practical:** 15hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Fire extinguishers • Extinguishing agents Non Consumable • White board • Multimedia • Internet • Computer system • PPEs	• Class Room/Lab/ Simulated environment

Module 3: Identify Tools, Equipment and Supplies related to Environmental Technology

Objective of the module: After completing this module, the learner will be able to identify tools, equipment and supplies related to Environmental Technology. The underpinning knowledge regarding Observe Occupational Safety and Health (OSH) will be sufficient to provide the basis for the job at workplace.

Duration: 90hours   **Theory:** 15 hours   **Practical:** 75 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place

LU1: Identify tools and equipment related to Environmental Technology	**The trainee will be able to:**
	1. Identify Air Monitoring equipment
	2. Identify Sound Level Meter
	3. Identify pH Meter
	4. Identify Equipment to monitor Water Pollution
	5. Identify vibration monitoring equipment
		• Categorise Environmental Technology tools and equipment
		  o Air monitoring equipment (NOx, SOx, COx, PM, etc.)
		
		  o Sound Level Meter
		  o pH Meter
		  o Dissolved Oxygen (DO) Meter
		  o Vibration Monitoring Equipment
			Total: 39hrs
			Theory: 6hrs
			Practical: 33hrs
				Consumable
				• Notebooks
				• Pencils
				• Erasers
				• Sharpeners
				• Environmental Technology tools/equipment
				Non Consumable
				• White board
				• Multimedia
				• Internet
				• PPEs
					• Class Room/Lab/ Simulated environment

		Practical Activity:		• Computer system	
		1. Prepare a chart of pollution measuring equipment and tools (Air and Water)		• Air monitoring equipment	
				• Sound Level Meter	
				• pH Meter	
				• DO Meter	
				• vibration monitoring equipment	
LU2: Identify supplies related to Environmental Technology	**The trainee will be able to:** 1. Identify solutions 2. Identify detergents 3. Identify fire extinguishers and fire hydrants, etc.	• Categorise Environmental Technology Supplies, including: 　o Detergents. Abrasives. Degreasers, Acid cleaners, etc. • Basic types of fire Extinguishers (Water extinguishers, Dry chemical extinguishers, Metal/Sand Extinguishers, etc.) • Classify fires into general categories (Class A, Class B, Class C, Class D and Class K)	**Total:** 51hrs **Theory:** 9hrs **Practical:** 42hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Fire extinguishers • Extinguishing agents Non Consumable • White board • Multimedia • Internet	• Class Room/Lab/ Simulated environment

		Practical Activity: 1. Enlist chemicals related to Environmental Technology as per given instructions 2. Prepare a chart as per the classification of fire and corresponding extinguishing agents		• Computer system • PPEs	

Module 4: Ensure safe storage of Tools, Equipment and Supplies at Workplace

Objective of the module: After completing this module, the learner will be able to make sure safe storage of Tools, Equipment and Supplies at Workplace. The underpinning knowledge regarding safe storage of Tools, Equipment and Supplies at Workplace will be sufficient to provide the basis for the job at workplace.

Duration: 90 hours **Theory:** 15 hours **Practical:** 75hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Ensure safe storage of tools and equipment at workplace	**The trainee will be able to:** 1. Store tools/equipment at designated place 2. Use labels for tools/ equipment 3. Display appropriate warning signs 4. Maintain inventory of the tools/equipment	• Importance of appropriate storage of tools and equipment at workplace • Describe safe storage procedure for tools/equipment according to the requirement • Define Warning Signs at workplace (mandatory, prohibition, warning, danger, fire, etc.) • Documentation for maintaining inventory **Practical Activity:** 1. Fill the given performa to maintain inventory of tools/ equipment	**Total:** 40hrs **Theory:** 7hrs **Practical:** 33hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners • Fire extinguishers • Extinguishing agents Non Consumable • White board • Multimedia • Internet • Computer system • PPEs	• Class Room/Lab/ Simulated environment

		2. Draw and label at least 5 warning signs			
LU2: Ensure safe storage of supplies at workplace	**The trainee will be able to:** 1. Identify hazardous and non-hazardous chemicals 2. Label supplies and materials accordingly 3. Perform storage of chemicals at designated area as per instructions 4. Ensure Safe access to all lab supply items	● Describe hazardous and non-hazardous materials ● Common hazardous substances/chemicals (acids, disinfectants, paints, etc.) ● Types of chemical Hazards (skin irritants, respiratory issues, etc.) ● Importance of proper ventilation of storage area **Practical Activity:** 1. Make a list and mention hazardous substances/chemicals 2. Use sticky notes and label given supplies	**Total:** 50hrs **Theory:** 8hrs **Practical:** 42hrs	Consumable ● Notebooks ● Pencils ● Erasers ● Sharpeners ● Sticky notes ● Chemicals Non Consumable ● White board ● Multimedia ● Internet ● Computer system ● PPEs	● Class Room/Lab/ Simulated environment

Module 5: Handle Hazardous Materials/Chemicals at Workplace

Objective of the module: After completing this module, the learner will be able to handle Hazardous Materials/Chemicals at Workplace. The underpinning knowledge regarding Hazardous Materials/Chemicals at Workplace will be sufficient to provide the basis for the job at workplace.

Duration: 90 hours **Theory:** 18 hours **Practical:** 72 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place

LU1: Identify hazardous materials / chemicals	**The trainee will be able to:**
	 1. Categorise explosive materials/chemicals
	 2. Identify gases/toxic gases
	 3. Identify flammable liquids
	 4. Identify flammable substances
	 5. Identify hazardous materials (gas cylinders, corrosives, etc.)
		• Describe explosive materials/chemicals
		 • Common Types of:
		   o Gases/toxic gases
		   o Flammable liquids
		   o Flammable substances
		
		 <u>**Practical Activity:**</u>
		 1. Enlist flammable and non-flammable materials
			Total: 14hrs
			 Theory: 6hrs
			 Practical: 8hrs
				Consumable
				 • Notebooks
				 • Pencils
				 • Erasers
				 • Sharpeners
				 Non Consumable
				 • White board
				 • Multimedia
				 • Internet
				 • Computer system
					• Class Room/Lab/ Simulated environment

LU2: Ensure safe handling of hazardous materials / chemicals	**The trainee will be able to:** 1. Isolate hazardous from non-hazardous materials / chemicals	• Different types of chemicals and their nature	**Total:** 8hrs **Theory:** 2hrs **Practical:** 6hrs	Consumable • Notebooks • Pencils	• Class Room/Lab/ Simulated environment

		Practical Activity:		• Erasers	
	2. Store all hazardous materials properly 3. Use PPEs where required 4. Separate reactive/nonreactive chemicals	2. Arrange given Chemicals according to their nature		• Sharpeners Non Consumable • White board • Multimedia • Internet • Computer system • Safety manuals	

Module 6: Respond Incidents and Emergency Situations

Objective of the module: After completing this module, the learner will be able to inform in case of Accident and Emergency Situations to concerned Person. The underpinning knowledge regarding Accident and Emergency Situations will be sufficient to provide the basis for the job at workplace.

Duration: 70 hrs**.**   **Theory:** 16 hrs.   **Practical:** 54 hrs.

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Identify emergency situation	**The trainee will be able to:** 1. Identify fire and smoke 2. Identify personal injury or threat 3. Identify bomb threat 4. Identify suspicious mail or package 5. Identify biohazard or chemical emergency 6. Detect gas leak 7. Recognize natural disaster	• Define emergency situation (machine malfunction, gas leak, suspicious mail or package, etc.) • Describe biohazards **Practical Activity:** 1. Participate in emergency drill, situation assigned by assessor.	**Total:** 27hrs **Theory:** 6hrs **Practical:** 21hrs	Consumable • Notebooks • Pencils • Erasers • Sharpeners Non Consumable • White board • Multimedia • Internet • Computer system • Pen	• Class Room/Lab/ Simulated environment
LU2: Report the emergency to concerned	**The trainee will be able to:** 1. Detect emergency situation	• SOPs to report emergency situations	**Total:** 58hrs **Theory:** 10hrs **Practical:** 48hrs	Consumable • Notebooks • Flip charts	• Class Room/Lab/

| person at workplace | 2. Report the situation to concerned person as per protocols | **Practical Activity:**

1. Enlist methods to report emergency situations | | • Pencils
• Erasers
• Sharpeners
Non Consumable
• White board
• Multimedia
• Internet
• Computer system
• Pen
• Flip board
• Permanent marker
• PPEs Kit | Simulated environment |

Module 7: Adhere to organisational policies and regulations

Objective of the module: After completing this module, the learner will be able to adhere to organizsational policies and regulations. The underpinning knowledge regarding organizational policies and regulations will be sufficient to provide the basis for the job at workplace.

Duration: 70 hrs.　　　　**Theory:** 22 hrs.　　　　**Practical:** 48 hrs.

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Identify organisational policies and regulations	**The trainee will be able to:** 1. Identify code of conduct 2. Recognise prohibition policy 3. Identify health and safety policy	• Define code of conduct • Describe organizational policies and regulations	**Total:** 48hrs **Theory:** 8hrs **Practical:** 40hrs	Consumable • Notebooks • Flip charts • Pencils • Erasers • Sharpeners Non Consumable • White board • Multimedia • Internet • Computer system • PPEs Kit	Class Room/ Site Specific Field Area

LU2: Follow organizational policies and regulations	The trainee will be able to:		Total: 46hrs	Consumable	Class Room/ Site Specific Field Area
	1. Follow organizational policies, rules and regulations 2. Follow regularity and punctuality 3. Follow SOPs at workplace	• Importance of following organizational policies, rules and regulations	Theory: 6hrs Practical: 40hrs	• Notebooks • Flip charts • Pencils • Erasers • Sharpeners Non Consumable • White board • Multimedia • Internet • Computer system	

General assessment guidance for *Environmental Services Attendant*

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.

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 Environmental Services Attendant include:

- Work performances, for example perform basic communication, maintain personal health, hygiene and safety, perform basic computer operations, and dispose the waste materials.
- Demonstrations, for example safe storage of Tools, Equipment and Supplies at Workplace
- Direct questioning, where the assessor would ask the student how to perform personal safety at work place, how they can communicate work place policy and

procedures, how they can handle documents, what are the benefits of organizing store merchandising

- Paper-based tests, such as multiple choice or short answer questions on communication at work place policy and procedures, handling documents, organizing store merchandizing

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

Examples for indirect assessment of a Pesticides & Fertiliser Technology include:

- Handle Hazardous Materials / Chemicals at Workplace

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 documentation or organizing procedures of Pesticides Pre-Application Tasks are to be assessed and certificated, the assessment should involve performance criteria that are directly related to that documentation activity. An interview about the Pesticides Pre-Application Tasks g would not meet the performance criteria.

Reliability means that the assessment is consistent and reproducible. For example, if the work performance of preparing documents in words has been assessed, another assessor (e.g. 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 *Environmental Services Attendant*

This curriculum consists of 07 modules:

- **Module 1:** Perform Housekeeping at Workplace
- **Module 2:** Follow Basic Health and Safety Practices at Workplace
- **Module 3:** Identify Tools, Equipment and Supplies related to Environmental Technology
- **Module 4:** Ensure safe storage of Tools, Equipment and Supplies at Workplace
- **Module 5:** Handle Hazardous Materials / Chemicals at Workplace
- **Module 6:** Inform in case of accident and emergency situations to concerned person
- **Module 7:** Adhere to organizational policies and regulations

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 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 25 students shall therefore require assessments to be carried out over a four-day period. For a group of only 10 to 15 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 programme for each group of five students. Training providers must agree the content for practical assessments in advance.

Complete List of Tools and Equipment

Sr no	Description	Quantity
1	Computer with internet	26
2	White board	1
3	Multimedia	1

List of Consumable Supplies

Sr no	Material	Quantity
1.	Note books	25
2.	Eraser	25
3.	Pencils	25
4.	Sharpener	25
5.	White Board	1
6.	Board markers	15
7.	Dusters	5
8.	Cleaning solutions	-

9.	Disinfecting chemicals	-
10.	Sprayer	25
11.	Mops	25
12.	Waste buckets	5
13.	Cleaning brush	25
14.	Warning signs	-
15.	Personal Protective Equipment (PPEs)	25
16.	Air monitoring equipment (CO/CO2 monitor, SOx monitor, NOx monitor, Swab kit, Particle analyzer etc.)	1
17.	Noise Meter	5
18.	pH meter	5
19.	TDS meter	5
20.	TSS meter	5
21.	TSP meter	5
22.	DO meter	5
23.	Titration assembly	5
24.	Vibration analyzer	5
25.	Sound level meter	5

26.	Temperature gauges	5
27.	Glassware/Plastic ware	5
28.	Weighing balance	5
29.	Tags/Label	5
30.	Containers/Storage boxes	5
31.	Inventory checklist	25
32.	Emergency signs	-
33.	Emergency hooters	-
34.	First aid kit	5
35.	Fire extinguishers	5
36.	Smoke detectors	5
37.	Megaphone	3
38.	Oil spillage kit	5
39.	Survey checklist	5
40.	SOP manual	5
41.	Policy and procedure documents	25
42.	Slogans placards	25
43.	Multimedia	1

44.	PPE's	

Credit Values

The credit value of the National Certificate Level 2 in Textile Merchandizing 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	Credit	Estimate of hours
A. Perform Housekeeping at Workplace	8	80
B. Follow Basic Health and Safety Practices at Workplace	11	110
C. Identify Tools, Equipment and Supplies related to Environmental Technology	9	90
D. Ensure safe storage of Tools, Equipment and Supplies at Workplace	9	90
E. Handle Hazardous Materials / Chemicals at Workplace	9	90
F. Inform in case of accident and emergency situations to concerned person	7	70
G. Adhere to organizational policies and regulations	7	70