

Curriculum For “Environmental Technology”

(Environmental Supervisor)

(Level -5)



07th to 11th November 2022



**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 standardised and sustainable training system.

Competencies to Be Gained After Completion Of Course

- A-** Conduct on-site trainings
- B-** Conduct Analysis of all Technical and Administrative field Tasks
- C-** Supervise the Team to Achieve Goals and Prepare Action Plan on Daily Basis
- D-** Coordinate with all Departments, Establish Collaborative Relationship to Achieve Objectives
- E-** Assist in Implementation of Environmental Management System (EMS)
- F-** Implement Emergency Response Plan (ERP)
- G-** Assist in Environmental and Safety (E&S) Assessment
- H-** Perform Cost Analysis related to Operations and Maintenance
- I-** Follow Green Skills

Possible Available Job Opportunities Available Immediately and Later In The Future

- Supervisor (Environmental Labs)
- Supervisor (Wastewater Plants)
- Supervisor (Environmental Protection Agency)
- Supervisor (Environmental NGO's)

Trainee Entry Level

For National Vocational Certificate Level-4 in Environmental Technology, the entry requirement is Matriculation or equivalent to Matriculation.

Minimum Qualification of Trainer

Teaching staff should have DAE with two years' experience or 2 years Certificate with two years' experience in relevant field. They should also hold or be working towards a formal teaching qualification.

Other formal qualifications in the relevant field of Environmental Technology would be useful in addition to the above.

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 09 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: Conduct on-site trainings | 30 | 60 | 90 |
| Module 2: Conduct an Analysis of all Technical and Administrative field Tasks | 40 | 70 | 110 |
| Module 3: Supervise the Team to Achieve Goals and Prepare Action Plan on Daily Basis | 50 | 90 | 140 |
| Module 4: Coordinate with all Departments, Establish Collaborative Relationship to Achieve Objectives | 40 | 60 | 100 |
| Module 5: Assist in Implementation of Environmental Management System (EMS) | 90 | 120 | 210 |
| Module 6: Implement Emergency Response Plan (ERP) | 60 | 90 | 150 |
| Module 7: Assist in Environmental and Safety (E&S) Assessment | 30 | 90 | 120 |
| Module 8: Perform Cost Analysis related to Operations and Maintenance | 30 | 60 | 90 |
| Module 9: Follow Green Skills | 90 | 100 | 250 |

¹ Learning Module hours in training provider premises

² Training workshop, laboratory and on-the-job workplace

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: (40%)** **Practical (60%)**
- **Theory: 460hours** **Practical: 740 hours**

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 standardised 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:

| Technician - 6 Months | | | |
|---|--|---|--|
| Module 1: Conduct On-Site Training 90 Hours | | Module 3: Supervise the Team to Achieve Goals and Prepare Action Plan on Daily Basis 140 Hours | |
| Module 4: Coordinate with all Departments, Establishing Collaborative Relationship to Achieve Objectives 100 Hours | | | |
| Module 5: Assist in Implementation of Environmental Management System (EMS) 210 Hours | Module 6: Implement Emergency Response Plan (ERP) 150 Hours | | |
| Module 2: Conduct Analysis of all Technical and Administrative Field Tasks 110 Hours | | | |
| Module 7: Assist in Environmental Safety (ES) Assessment 120 Hours | | | |
| Module 8: Perform Cost Analysis related to Operations and Maintenance 90 Hours | | Module 9: Follow Green Skills 250 Hours | |

Summary – Overview of the Curriculum

| Module Title and Aim | Learning Units | Theory Days/hours | Workplace Days/hours | Timeframe of modules |
|--|--|----------------------|-------------------------|-------------------------|
| Module 1: Conduct On-Site Training Aim: After successful completion of this module, the trainee is competent to conduct on- Job training recommended by the management. | LU1: Train team in specific operation, maintenance and repair procedures LU2: Conduct job safety analysis LU3: Conduct training assessment as per requirement | 30 | 60 | 90 |

| Module Title and Aim | Learning Units | Theory Days/hours | Workplace Days/hours | Timeframe of modules |
|---|---|-------------------|----------------------|----------------------|
| <p>Module 2: Conduct Analysis of all Technical and Administrative Field Tasks</p> <p>Aim: After successful completion of this module, the trainee is competent to conduct analysis of all technical and administrative field tasks to manage a team and perform responsibilities related to information sharing, problem resolution and root cause analysis in an efficient and systematic way.</p> | <p>LU1: Adhere to policy and standards</p> <p>LU2: Conduct Toolbox Talks (TBT)</p> <p>LU3: Perform company and site-specific administrative activities</p> | 40 | 70 | 110 |

| Module Title and Aim | Learning Units | Theory Days/hours | Workplace Days/hours | Timeframe of modules |
|--|--|-------------------|----------------------|----------------------|
| <p>Module 3: Supervise the Team to Achieve Goals and Prepare Action Plan on Daily Basis</p> <p>Aim: After successful completion of this module, the trainee is competent to achieve daily tasks and prepare routine action plan</p> | <p>LU1: Motivate the team for maximum efficiency</p> <p>LU2: Monitor productivity of workers</p> <p>LU3: Set appropriate standards of performance for self and others</p> <p>LU4: Manage the reciprocal relationship between staff and organization</p> <p>LU5: Identify issues and using appropriate approaches choose the course of action</p> <p>LU6: Maintain a hierarchy of control</p> | 50 | 90 | 140 |
| <p>Module 4: Coordinate with all Departments, Establishing Collaborative Relationship to Achieve Objectives.</p> <p>Aim: After successful completion of this module, the trainee is competent in coordinating with all departments and establish collaborative relationship to achieve targets..</p> | <p>LU1: Convey information and ideas with other departments</p> <p>LU2: Use collaborative relationships with other departments to achieve day to day targets</p> <p>LU3: Assist management in achieving the target by promoting team spirit</p> <p>LU4: Welcome feedback from subordinates and incorporate into actions after assessment</p> | 14 | 96 | 110 |

| Module Title and Aim | Learning Units | Theory Days/hours | Workplace Days/hours | Timeframe of modules |
|--|---|-------------------|----------------------|----------------------|
| <p>Module 5: Assist in Implementation of Environmental Management System (EMS)</p> <p>Aim: After successful completion of this module, the trainee is competent in assisting the implementation of environmental management system</p> | <p>LU1: Follow Environmental policies and SMART (Specific, Measurable, Attainable, Realistic and Time bound) objectives</p> <p>LU2: Assist in planning</p> <p>LU3: Assist in implementation</p> <p>LU4: Assist in monitoring and control</p> <p>LU5: Ensure continual improvement</p> <p>LU6: Assist in internal audits</p> | 90 | 120 | 210 |
| <p>Module 6: Implement Emergency Response Plan (ERP)</p> <p>Aim: After successful completion of this module, the trainee is competent in implementing the emergency response plan.</p> | <p>LU1: Facilitate in prevention and mitigation</p> <p>LU2: Facilitate preparedness</p> <p>LU3: Ensure quick response</p> <p>LU4: Ensure timely recovery</p> | 60 | 90 | 150 |

| Module Title and Aim | Learning Units | Theory Days/hours | Workplace Days/hours | Timeframe of modules |
|--|--|-------------------|----------------------|----------------------|
| <p>Module 7: Assist in Environmental Safety (ES) Assessment</p> <p>Aim: After successful completion of this module, the trainee is competent in identifying hazards, perform risk assessment and improve environmental performance.</p> | <p>LU1: Identify hazards</p> <p>LU2: Perform risk assessment</p> <p>LU3: Suggest recommendations to maintain and improve environmental performance</p> <p>LU4: Suggest recommendations to maintain and improve environmental performance</p> | 30 | 90 | 120 |
| <p>Module 8: Perform Cost Analysis related to Operations and Maintenance</p> <p>Aim: After successful completion of this module, the trainee is competent in to analyzing cost data, prepare cost analysis report and assist in cost management related to operations and maintenance.</p> | <p>LU1: Analyze data</p> <p>LU2: Prepare cost analysis report</p> <p>LU3: Assist in cost management</p> | 30 | 60 | 90 |

| Module Title and Aim | Learning Units | Theory Days/hours | Workplace Days/hours | Timeframe of modules |
|---|--|-------------------|----------------------|----------------------|
| Module 9: Follow Green Skills Aim: After successful completion of this module, the trainee is competent to follow and implement green skills. It includes pollution reduction and green energy production. | LU1: Follow Sustainable Development Goals (SDG's) 7 th ,12 th ,13 th ,14 th and 15 th LU2: Reduce pollution LU3: Implement 4R strategy (Reduce, Reuse, Recycle and Recover) LU4: Promote earth day LU5: Arrange sponsored green activities | 90 | 100 | 250 |

Modules

Module 1: Conduct On-Site Training

Objective of the module: This unit will provide knowledge and skills to conduct on- Job training recommended by the management.

Duration: 90hours **Theory:** 30 hours **Practical:** 60 hours

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|--|---|--|--|---|----------------|
| LU1: Train team for operation, maintenance and repair procedures | The trainee will be able to: <ol style="list-style-type: none"> 1. Conduct operational training according to the requirement 2. Conduct training on repair and maintenance procedures 3. Plan on-job training | <ul style="list-style-type: none"> • Importance of conducting Trainings with internal/external trainers for Professional Development • Importance of On Job Training/Internships | Total: 30hrs Theory: 10hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners | Class room |
| | | <u>Practical Activity:</u> <ol style="list-style-type: none"> 1. Plan and conduct a training on repair and maintenance of given equipment | | Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system • Lab Equipment | |
| LU2: Conduct job safety analysis | The trainee will be able to: <ol style="list-style-type: none"> 1. Conduct risk assessment 2. Conduct fire safety analysis 3. Participate in preparing Emergency Response Planning (ERP) | <ul style="list-style-type: none"> • Risk assessment • Emergency Response Panning (ERP) • Fire safety analysis | Total: 30hrs Theory: 10hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners | Class room |

| | | | | | |
|---------------------------------------|---|---|--|--|--|
| | 4. Implement SOPs for working at height | <div> <u>Practical Activity:</u> <ol style="list-style-type: none"> 1. Conduct an emergency response drill Suggest the required control measures </div> | | <div> Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system • PPEs • Lab Equipment </div> | |
| LU3: Perform Post Training Assessment | The trainee will be able to: <ol style="list-style-type: none"> 1. Assess required knowledge and skills 2. Assess Training Outcomes 3. Perform Post Training Evaluation | <div> <ul style="list-style-type: none"> • Post Training Evaluation • Survey Tools <div> <u>Practical Activity:</u> <ol style="list-style-type: none"> 1. Design a questionnaire/Performa to assess Training Outcomes, using appropriate Software </div> </div> | Total: 30hrs Theory: 10hrs Practical: 20hrs | | |

1. Module 2: Perform Technical and Administrative Field Tasks

Objective of the module: After successful completion of this module, the learner will be able to conduct analysis of all technical and administrative field tasks to manage a team and perform responsibilities related to information sharing, problem resolution and root cause analysis in an efficient and systematic way.

Duration: 110 hours **Theory:** 40 hours **Practical:** 70 hours

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|--|--|--|--|--|-------------------------|
| LU1. Follow Organisational Policies and Standards | The trainee will be able to: <ol style="list-style-type: none"> 1. Ensure Implementation of company policies and guidelines 2. Develop SOPs for specific task 3. Report technical issues to concern person 4. Prepare Reports as required | <ul style="list-style-type: none"> • Organisational policies and guidelines • Fundamental steps for designing SOPs • Report Making Criteria <hr/> <p><u>Practical Activity:</u></p> <ol style="list-style-type: none"> 1. Develop SOPs for given task | Total: 35hrs Theory: 15hrs Practical: 20rs | Consumable <ul style="list-style-type: none"> • Pocket files • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class room/Computer Lab |
| LU2. Conduct Toolbox Talks (TBT) | The trainee will be able to: <ol style="list-style-type: none"> 1. Conduct informal safety meeting at start of each shift 2. Highlight safe working practices | <ul style="list-style-type: none"> • Explain Toolbox Talks (TBT) • Toolbox talk topics <ul style="list-style-type: none"> ○ Accident Prevention ○ Accident Reporting ○ Air Quality | Total: 35hrs Theory: 10hrs Practical: 25hrs | Consumable <ul style="list-style-type: none"> • Pocket files • Notebooks • Pencils • Erasers | Class room/Computer Lab |

| | | | | | |
|---|--|--|---|--|-------------------------|
| | 3. Inform workers about changes in working conditions | <ul style="list-style-type: none"> Tools Safety, etc. <p><u>Practical/Mock Activity:</u></p> <ol style="list-style-type: none"> Demonstrate a TBT to discuss Basic General Industry Safety Rules | | <ul style="list-style-type: none"> Sharpeners <p>Non Consumable</p> <ul style="list-style-type: none"> White board Multimedia Internet Computer system | |
| LU3. Perform company and site-specific administrative activities | <p>The trainee will be able to:</p> <ol style="list-style-type: none"> Follow administrative procedures and guidelines Manage team tasks on daily basis Assign the duties according to the roster Manage housekeeping and time keeping log sheets Maintain record of all administrative approvals Maintain the personal data of Employees | <ul style="list-style-type: none"> Company and site-specific administrative tasks <ul style="list-style-type: none"> Dictation, note taking, and transcribing Creating and maintaining office documentation Sorting and distributing mail/circulars, etc. Organising health and safety and first aid training Setting up online conferences Updating employee handbooks and other relevant policy documents Helping schedule job interviews and exit interviews | <p>Total: 40hrs</p> <p>Theory: 15hrs</p> <p>Practical: 25hrs</p> | <p>Consumable</p> <ul style="list-style-type: none"> Pocket files Notebooks Pencils Erasers Sharpeners <p>Non Consumable</p> <ul style="list-style-type: none"> White board Multimedia Internet Computer system | Class room/Computer Lab |

| | | | | | |
|--|--|--|--|--|--|
| | | <ul style="list-style-type: none"> ○ Organising employee paperwork ○ Maintaining and updating employees' emergency contact information, etc. • Types of schedules • Importance of record keeping and Data Management | | | |
| | | <p><u>Practical/Mock Activity:</u></p> <ol style="list-style-type: none"> 1. Prepare a weekly schedule for team activities of specific department | | | |

Module 3: Supervise the Team to Achieve Goals and Prepare Action Plan on Daily Basis

Objective of the module: After completing this module, the learner will be able to supervision of team to achieve goals and prepare action plan on daily basis.

Duration: 140 hrs.

Theory: 50 hrs.

Practical: 90 hrs.

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|--|--|--|--|--|--|
| LU1: Motivate the team for maximum efficiency | The trainee will be able to: 1. Appreciate team members when they do a good job 2. Be a respectful, honest and supportive supervisor 3. Ensure psychological health of workers 4. Share positive feedback | <ul style="list-style-type: none">SOPs to motivate the team for maximum efficiency | Total: 35hrs Theory: 10hrs Practical: 25hrs | Consumable <ul style="list-style-type: none">NotebooksPencilsErasersSharpeners Non Consumable <ul style="list-style-type: none">White boardMultimediaInternetComputer system | Class Room/ Site Specific Field Area |

| | | | | | |
|--|---|---|--|--|--|
| LU2: Conduct field inspection | The trainee will be able to: <ol style="list-style-type: none"> 1. Encourage learning opportunities. 2. Provide team with latest technology 3. Strengthen communication protocols 4. Align goal with performance metrics | <ul style="list-style-type: none"> • Field inspection and its importance • Communication protocols • Alignment of goals with performance metrics | Total: 35hrs Theory: 10hrs Practical: 25hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU3: Set appropriate standards of performance for self and others | The trainee will be able to: <ol style="list-style-type: none"> 1. Let your employees know that you are analyzing their performance 2. Set a probation period/timeline | <ul style="list-style-type: none"> • Standards of performance for self and others | Total: 30hrs Theory: 10hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

| | | | | | |
|--|---|---|--|--|--|
| LU4: Manage the reciprocal relationship between staff and organization | The trainee will be able to: <ol style="list-style-type: none"> 1. Know your team on an individual level 2. Keep communication channels always open 3. Ask for the opinions and feedback 4. Listen to the arguments 5. Create strong bonding with staff | <ul style="list-style-type: none"> • Communication channels • Relationship with staff | Total: 30hrs Theory: 10hrs Practical: 20hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU5: Identify issues and using appropriate approaches choose the course of action | The trainee will be able to: <ol style="list-style-type: none"> 1. Enhance working knowledge 2. Analyse future development 3. Identify effective solution to resolve any problem | <ul style="list-style-type: none"> • Identifying issues using appropriate approaches | Total: 30hrs Theory: 05hrs Practical: 25hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

| | | | | | |
|---|--|--|--|--|--|
| LU6: Maintain a hierarchy of control | The trainee will be able to: <ol style="list-style-type: none"> 1. Identify organizational chart 2. Check job descriptions and responsibilities of departmental staff 3. Check standard operating procedures for control measures 4. Ensure team working according to organizational charts | <ul style="list-style-type: none"> Standards of performance for self and others | Total: 30hrs Theory: 05hrs Practical: 25hrs | <div>Consumable</div> <ul style="list-style-type: none"> Notebooks Pencils Erasers Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> White board Multimedia Internet Computer system | Class Room/ Site Specific Field Area |
|---|--|--|--|--|--|

Module 4: Coordinate with all Departments, Establishing Collaborative Relationship to Achieve Objectives.

Objective of the module: After completing this module, the learner will be able to coordinate with all departments and establish collaborative relationship to achieve targets.

Duration: 100 hrs.

Theory: 40 hrs.

Practical: 60 hrs.

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|---|---|---|--|--|--|
| LU1: Convey information and ideas with other departments | The trainee will be able to: <ol style="list-style-type: none"> 1. Conduct inter departmental meetings 2. Record minutes of meetings | <ul style="list-style-type: none"> • Communication Channels within the departments | Total: 25hrs Theory: 10hrs Practical: 15hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

| | | | | | |
|--|--|--|--|--|--|
| LU2: Use collaborative relationships with other departments to achieve day to day targets | The trainee will be able to: <ol style="list-style-type: none"> 1. Develop collaborations with other departments 2. Create sense of community and collaborative culture 3. Encourage open feedback | <ul style="list-style-type: none"> • Relationships with other departments to achieve day to day targets • Sense of community and collaborative culture | Total: 25hrs Theory: 10hrs Practical: 15hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU3: Assist management in achieving the target by promoting team spirit | The trainee will be able to: <ol style="list-style-type: none"> 1. Encourage team work in achieving daily targets 2. Motivate the team 3. Assist management in achieving targets | <ul style="list-style-type: none"> • Importance of team work for achieving daily targets • Importance of motivating the team | Total: 25hrs Theory: 10hrs Practical: 15hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

| | | | | | |
|--|---|--|--|--|--|
| LU4. Welcome feedback from subordinates and incorporate into actions after assessment | The trainee will be able to: <ol style="list-style-type: none"> 1. Collect feedback from subordinates 2. Assess feedback 3. Respond to the feedback | <ul style="list-style-type: none"> • Importance of getting feedbacks • Assessment of feedbacks | Total: 25hrs Theory: 10hrs Practical: 15hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
|--|---|--|--|--|--|

Module 5: Assist in Implementation of Environmental Management System (EMS)

Objective of the module: After completing this module, the learner will be able to develop capacity to assist in implementation of environmental management system.

Duration: 210 hrs.

Theory: 90 hrs.

Practical: 120 hrs.

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|--|---|---|--|--|--|
| LU1 Follow Environmental policies and SMART (Specific, Measurable, Achievable, Realistic and Time bound) objectives | The trainee will be able to: <ol style="list-style-type: none"> 1. Identify environmental policy 2. Implement environmental policy in assigned task 3. Assist in development of SMART objectives 4. Develop an action plan to achieve environmental objectives 5. Implement SMART objectives 6. Assure compliance of environmental policy and objectives | <ul style="list-style-type: none"> • Environmental Management System (EMS) • SMART Objectives • Environmental policy and Objectives • Practical Activity: <ol style="list-style-type: none"> 1. Draft an action plan to achieve required Outcomes | Total: 35hrs Theory: 15hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU2: Assist in planning | The trainee will be able to: <ol style="list-style-type: none"> 1. Assist in building up team 2. Engage team in planning process | <ul style="list-style-type: none"> • Importance of Team Building • PDCA Cycle (Plan - Do-Check - Act) | Total: 35hrs Theory: 15hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils | Class Room/ Site Specific Field Area |

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|---|---|--|--|--|--|
| | 3. Monitor and communicate planning progress | <u>Practical Activity:</u> 1. Draft an Action Plan for implementation of EMS System | | <ul style="list-style-type: none"> • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | |
| LU3: Assist in implementation | The trainee will be able to: 1. Implement plan 2. Assign roles and responsibilities 3. Support operations | <ul style="list-style-type: none"> • Job Descriptions <u>Practical Activity:</u> 1. Prepare J'Ds for assigned department <u>Mock Activity:</u> 1. Alot roles and responsibilities to the team assigned by assessor | Total: 35hrs Theory: 15hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU4: Manage Monitoring and Control activities | The trainee will be able to: 1. Develop work instruction sheets for various | <ul style="list-style-type: none"> • Work instruction sheets • Monitoring and Control activities | Total: 35hrs Theory: 15hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers | Class Room/ Site Specific Field Area |

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|--------------------------------------|---|--|--|--|--|
| | monitoring and control operations 2. Ensure the implementation of SOPs 3. Inspect the operational activities 4. Supervise the team in monitoring and control activities | <ul style="list-style-type: none"> Examination of Operational Procedures Managing Team monitoring and Control Tasks | | <ul style="list-style-type: none"> Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> White board Multimedia Internet Computer system | |
| | | Practical Activity: 1. Prepare a Work Instruction Sheet according to the requirement | | | |
| U5: Perform Management Review | The trainee will be able to: 1. Identify the target process for improvement 2. Organise the team for continual improvement 3. Collect current performance data 4. Identify value added activities 5. Establish desired performance goals 6. Develop an action plan to improve the targeted process | <ul style="list-style-type: none"> Management Review Value added activities Performance goals Targeted process | Total: 35hrs Theory: 15hrs Practical: 20hrs | <div>Consumable</div> <ul style="list-style-type: none"> Notebooks Pencils Erasers Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> White board Multimedia Internet Computer system | Class Room/ Site Specific Field Area |

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| | <p>7. Evaluate the result in perspective of action plan</p> <p>8. Attend management review meetings</p> <p>9. Repeat the cycle to look for new opportunities</p> | | | | |
| LU6: Assist in internal audits | <p>The trainee will be able to:</p> <ol style="list-style-type: none"> 1. Assist in scheduling internal audit 2. Assist in fieldwork of audit 3. Take physical evidence of internal audit findings 4. Assist in reporting audit findings | <ul style="list-style-type: none"> • Describe Audit and its importance • Types of Audit (Internal and External) • Interpretation of Audit Report | <p>Total: 35hrs</p> <p>Theory: 15hrs</p> <p>Practical: 20hrs</p> | <p>Consumable</p> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <p>Non Consumable</p> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

Module 6: Implement Emergency Response Plan (ERP)

Objective of the module: After completing this module, the learner will be able to implement the emergency response plan.

Duration: 150 hrs.

Theory: 60 hrs.

Practical: 90 hrs.

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|---|---|---|--|---|--|
| LU1: Assist in development of prevention and mitigation Strategies | The trainee will be able to: <ol style="list-style-type: none"> 1. Identify potential environmental emergencies 2. Assist in performing environmental emergency risk assessment 3. Update Materials Safety Data Sheet (MSDS) in accordance with Workplace Hazardous Materials Information System (WHMIS) 4. Implement preventive maintenance program for equipment in timely manner to prevent environmental emergencies | <ul style="list-style-type: none"> • Explain Emergency Response Plan (ERP) • Environmental emergencies • Environmental emergency risk assessment • Materials Safety Data Sheet (MSDS) • Workplace Hazardous Materials Information System (WHMIS) <u>Practical Activity:</u> <ol style="list-style-type: none"> 1. Draft Emergency Response Plan | Total: 50hrs Theory: 20hrs Practical: 30hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU2. Ensure quick response | The trainee will be able to: <ol style="list-style-type: none"> 1. Assess the emergency situation | <ul style="list-style-type: none"> • Emergency exit plan | Total: 50hrs Theory: 20hrs Practical: 30hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils | Class Room/ Site Specific Field Area |

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|------------------------------------|--|---|--|--|--|
| | <ol style="list-style-type: none"> Determine response level to emergency Ensure quick reporting of incident to higher management Execute emergency exit plan under emergency situations | <u>Practical Activity:</u> <ol style="list-style-type: none"> Prepare Emergency exit plan according to given instructions | | <ul style="list-style-type: none"> Erasers Sharpeners Non Consumable <ul style="list-style-type: none"> White board Multimedia Internet Computer system | |
| LU3: Ensure timely recovery | The trainee will be able to: <ol style="list-style-type: none"> Follow post emergency procedures Update the emergency response plan Check response PPEs are available Inform Respective agencies according to the situation Restock response Equipment | <ul style="list-style-type: none"> Post Emergency Procedures PPE's for Emergency Response Emergency Response Services (1122, 16, 15 Police, etc.) Emergency Response Equipment (Fire Extinguishers, Emergency Alarms, etc.) | Total: 50hrs Theory: 20hrs Practical: 30hrs | Consumable <ul style="list-style-type: none"> Notebooks Pencils Erasers Sharpeners Non Consumable <ul style="list-style-type: none"> White board Multimedia Internet Computer system | Class Room/ Site Specific Field Area |
| | | <u>Practical Activity:</u> <ul style="list-style-type: none"> Plan Emergency Drill for any department and prepare a list of required Emergency Response equipment | | | |

Module 7: Assist in Environmental Safety (ES) Assessment

Objective of the module: After completing this module, the learner will be able to identify hazards, perform risk assessment and improve environmental performance.

Duration: 120 hrs.

Theory: 30 hrs.

Practical: 90 hrs.

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|------------------------------|--|---|--|--|--|
| LU1: Identify hazards | The trainee will be able to: <ol style="list-style-type: none"> 1. Conduct surveys to identify various hazards 2. Determine permanent and temporal characteristics of different hazards 3. Identify various scenarios under which different hazards could cause threat | <ul style="list-style-type: none"> • Identify Hazards • Permanent and temporal characteristics of different hazards | Total: 30hrs Theory: 10hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

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|---|---|---|--|--|--|
| LU2: Perform risk assessment | The trainee will be able to: <ol style="list-style-type: none"> 1. Calculate accident probability for various scenarios 2. Assess the accident consequences for different hazards 3. Determine risk associated with each hazard 4. Determine whether risk is within acceptance limit 5. Report to higher management to modify process, plant, or emergency response in case risk is not within acceptance limit | <ul style="list-style-type: none"> • Risk Assessment • Emergency response plan | Total: 30hrs Theory: 10hrs Practical: 20hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU3. Suggest recommendations to maintain and improve environmental performance | The trainee will be able to: <ol style="list-style-type: none"> 1. Identify Key Performance Indicators (KPIs) related to environmental performance 2. Improve environmental performance KPIs | <ul style="list-style-type: none"> • Key Performance Indicators (KPIs) • Environmental performance KPIs | Total: 30hrs Theory: 05hrs Practical: 25hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet | Class Room/ Site Specific Field Area |

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|---|---|--|--|--|--|
| | 3. Suggest new KPIs for environmental performance measurement | | | <ul style="list-style-type: none"> Computer system | |
| LU4. Ensure environmental regulations are being followed | The trainee will be able to: <ol style="list-style-type: none"> Determine the relevant environmental regulations Identify requirements for compliance of environmental regulations Conduct internal audit to assess whether the processes are aligned with legal provisions Report environmental compliance to higher management | <ul style="list-style-type: none"> Environmental regulations Internal Audits | Total: 30hrs Theory: 05hrs Practical: 25hrs | <div>Consumable</div> <ul style="list-style-type: none"> Notebooks Pencils Erasers Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> White board Multimedia Internet Computer system | Class Room/ Site Specific Field Area |

Module 8: Perform Cost Benefit Analysis related to Operations and Maintenance

Objective of the module: After completing this module, the learner will be able to analyze cost data, prepare cost analysis report and assist in cost management related to operations and maintenance.

Duration: 90 hrs.

Theory: 30 hrs.

Practical: 60 hrs.

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|-------------------|---|---|--|--|--|
| LU1: Analyze data | The trainee will be able to: <ol style="list-style-type: none"> 1. Identify various types of costs 2. Choose appropriate economic evaluation method 3. Apply statistical methods to analyse cost data 4. Interpret results from cost data 5. Apply the result obtained from cost data | <ul style="list-style-type: none"> • Cost Management • Types of costs (Direct, Indirect, Variable, Fixed costs, etc.) • Differentiate between Liability and Receivable • Economic evaluation method • Methods of Cost Benefit Analysis | Total: 45hrs Theory: 15hrs Practical: 30hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners | Class Room/ Site Specific Field Area |
| | | Practical Activity: <ol style="list-style-type: none"> 1. Perform Cost Benefit Analysis of given Data | | Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | |

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| LU2: Prepare cost analysis report | The trainee will be able to: <ol style="list-style-type: none"> 1. Identify various parts of cost analysis report 2. Identify the impacts and select measurement indicators 3. Prepare Cost Benefit Analysis Report | <ul style="list-style-type: none"> • Structure of cost analysis report • Measurement of Cost Benefit Analysis • Cost Estimation <hr/> <u>Practical Activity:</u> <ol style="list-style-type: none"> 1. Prepare Cost Benefit Analysis Report using MS Excel | Total: 45hrs Theory: 15hrs Practical: 30hrs | <div>Consumable</div> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <div>Non Consumable</div> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
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Module 9: Follow Green Skills

Objective of the module: After completing this module, the learner will be able follow and implement green skills. It includes pollution reduction and green energy production.

Duration: 190 hrs.

Theory: 90 hrs.

Practical: 100 hrs.

| Learning Unit | Learning Outcomes | Learning Elements | Duration | Materials Required | Learning Place |
|---|--|---|--|--|--|
| LU1: Follow Sustainable Development Goals (SDG's) 7 th ,12 th ,13 th ,14 th and 15 th categories of waste | The trainee will be able to: <ol style="list-style-type: none"> 1. Increase the percentage of renewable energy in total energy consumption 2. Improve energy efficiency 3. Implement responsible management of chemicals and waste 4. Promote sustainable product procurement practices 5. Build knowledge and capacity to meet climate change 6. Implement United Nation Framework Convention on Climate Change (UNFCCC) 7. Conserve coastal and marine areas | <ul style="list-style-type: none"> • Waste Management • Sustainable Development Goals (SDG's) 7th,12th ,13th,14th and 15th categories of waste • United Nation Framework Convention on Climate Change (UNFCCC) | Total: 50hrs Theory: 20hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

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|--|--|---|--|--|--|
| LU2: Reduce pollution | The trainee will be able to: <ol style="list-style-type: none"> 1. Use environmentally friendly resources 2. Modify production process to produce less waste 3. Ensure that leaky faucets and hoses are repaired | <ul style="list-style-type: none"> • Environmentally friendly resources • Production process to produce less waste | Total: 35hrs Theory: 15hrs Practical: 20hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU3: Implement 4R strategy (Reduce, Reuse, Recycle and Recover) | The trainee will be able to: <ol style="list-style-type: none"> 1. Implement the methods used for reduction of waste 2. Promote use of biodegradable products 3. Reduce consumption of needless items 4. Print on both sides of a paper 5. Use rechargeable batteries 6. Apply criteria for the reuse of waste 7. Isolate the recycled materials form non-recycle material | <ul style="list-style-type: none"> • 4R strategy (Reduce, Reuse, Recycle and Recover) • Biodegradable products • Green skills to support sustainable green economy | Total: 90hrs Theory: 15hrs Practical: 75hrs | Consumable <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners Non Consumable <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |

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| | <p>8. Implement green skills necessary for sustainable development</p> <p>9. Implement green skills to support sustainable green economy</p> | | | | |
| LU4: Promote earth day | <p>The trainee will be able to:</p> <ol style="list-style-type: none"> 1. Promote awareness regarding earth day 2. Arrange team for park cleanup activities 3. Organize recycling drives 4. Carry out composting projects 5. Conduct an eco-audit | <ul style="list-style-type: none"> • 4R | <p>Total: 90hrs</p> <p>Theory: 15hrs</p> <p>Practical: 75hrs</p> | <p>Consumable</p> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <p>Non Consumable</p> <ul style="list-style-type: none"> • White board • Multimedia • Internet • Computer system | Class Room/ Site Specific Field Area |
| LU5: Arrange sponsored green activities | <p>The trainee will be able to:</p> <ol style="list-style-type: none"> 1. Plant trees in vicinity of organizations 2. Campaign to prevent deforestation 3. Participate in reforestation/afforestation 4. Participate in urban forestry | <ul style="list-style-type: none"> • Green activities • Reforestation/afforestation • Urban forestry | <p>Total: 90hrs</p> <p>Theory: 15hrs</p> <p>Practical: 75hrs</p> | <p>Consumable</p> <ul style="list-style-type: none"> • Notebooks • Pencils • Erasers • Sharpeners <p>Non Consumable</p> <ul style="list-style-type: none"> • White board • Multimedia | Class Room/ Site Specific Field Area |

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|--|---|--|--|---|--|
| | 5. Engage community through green activities | | | <ul style="list-style-type: none"> • Internet • Computer system | |
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General assessment guidance for *Environmental Technology*

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 a Pesticides& Fertiliser Technology include:

- Work performances, for example communication at workplace, application of work health and safety practices (WHS), performing basic computer operations, and identification of and implement Workplace Policies and Procedures.
- Demonstrations, for example Assist in Maintenance of Equipment
- Direct questioning, where the assessor would ask the student how to Observe Workplace Ethics-I

- Paper-based tests, such as multiple choice or short answer questions on Maintain Routine Record
- 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:

- Perform Collect/Prepare Samples for Analysis

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 Collect/Prepare Samples for Analysis 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 Collect/Prepare Samples for Analysis Tasks 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 Technology*

This curriculum consists of 12 modules:

Module 1: A- Conduct on-site trainings

Module 2: Conduct an Analysis of all Technical and Administrative field Tasks

Module 3: Supervise the Team to Achieve Goals and Prepare Action Plan on Daily Basis

Module 4: Coordinate with all Departments, Establish Collaborative Relationship to Achieve Objectives

Module 5: Assist in Implementation of Environmental Management System (EMS)

Module 6: Implement Emergency Response Plan (ERP)

Module 7: Assist in Environmental and Safety (E&S) Assessment

Module 8: Perform Cost Analysis related to Operations and Maintenance

Module 9: Follow Green Skills

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 relevant software and internet | 26 |
| 2 | Printer | 1 |
| 3 | Multi media | 1 |
| 4 | Whiteboard | 1 |
| 5 | Lights | 1 |
| 6 | Mannequin | 5 |
| 7 | Props | |

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 |

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| 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 |

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| 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 |

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| 42. | Slogans placards | 25 |
| 43. | Multimedia | 1 |
| 44. | PPE's | |

Credit Values

The credit value of the National Certificate Level 3 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 | Estimated Hours |
|---|--------|-----------------|
| A. Conduct On-Site Training | 30 | 60 |
| B. Perform Technical and Administrative Field Tasks | 40 | 70 |
| C. Supervise the Team to Achieve Goals and Prepare Action Plan on Daily Basis | 50 | 90 |
| D. Coordinate with all Departments, Establishing Collaborative Relationship to Achieve Objectives | 40 | 60 |
| E. Assist in Implementation of Environmental Management System (EMS) | 90 | 120 |

| Competency Standard | Credit | Estimated Hours |
|---|--------|-----------------|
| F. Implement Emergency Response Plan (ERP) | 60 | 90 |
| G. Assist in Environmental Safety (ES) Assessment | 30 | 90 |
| H. Perform Cost Analysis related to Operations and Maintenance | 30 | 60 |
| I. Follow Green Skills | 90 | 100 |