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Norwegian Embassy  
Islamabad



# MOBILE PHONE TECHNICIAN



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## TRAINER GUIDE

National Vocational Certificate Level 1

Version 1 - November, 2019



Implemented by

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

**Published by**

National Vocational and Technical Training Commission  
Government of Pakistan

**Headquarter**

Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan  
www.navttc.org

**Responsible**

Director General Skills Standard and Curricula, National Vocational and Technical Training Commission  
National Deputy Head, TVET Sector Support Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

**Layout & design**

SAP Communications

**Photo Credits**

TVET Sector Support Programme

**URL links**

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This document has been produced with the technical assistance of the TVET Sector Support Programme, which is funded by the European Union, the Federal Republic of Germany and the Royal Norwegian Embassy and has been commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in close collaboration with the National Vocational and Technical Training Commission (NAVTTTC) as well as provincial Technical Education and Vocational Training Authorities (TEVTAs), Punjab Vocational Training Council (PVTC), Qualification Awarding Bodies (QABs)s and private sector organizations.

**Document Version**

November, 2019  
**Islamabad, Pakistan**

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## Contents

Introduction	3
Lesson plans	4
Demonstration of skill	4
Overview of the program	6
Lesson Plan Template - EXAMPLE	8
Module: Adopt Health and Safety	9
Trainer's guidelines	10
Module A: Adopt Health and Safety	10
Module B: Maintain Tools and Equipment	17
Module B: Maintain Tools and Equipment	19
Module C: Measure Basic Electrical & Electronics Units in Series/Parallel Circuits	21
Test Yourself (Multiple Choice Questions)	30

## **Introduction**

In traditional approach there was a gap between the curricula and the market needs. While Competence-based training helps to bridge the gap between what is taught in training and what tasks will be performed on the job. Training trainees to perform actual job functions helps to ensure that future front-line workers have the skills, knowledge and abilities required to perform their jobs properly, safely and effectively. In addition to competence-based training, assessment based on the performance of actual work competencies helps to ensure that:

- trainees are performing their work tasks as safely as possible
- performance gaps are recognized prior to serious incidents
- training can be implemented to improve competence.

There are significant benefits to competence-based training:

### **1. Cost effectiveness**

Since training activities and assessments in a competence-based approach are goal-oriented, trainers focus on clearly defined areas of skills, knowledge and understanding that their own industry has defined in the competence standards. At the same time, trainees are more motivated to learn when they realize the benefits of improved performance.

### **2. Efficiency**

The transfer gap between the training environment and working on the job is reduced substantially in a competence-based approach. This is because training and assessment are relevant to what needs to be done on the job. As a result, it takes less time for trainees to become competent in the required areas. This, in turn, contributes to improved efficiency where training and assessment are concerned.

### **3. Increased productivity**

When trainees become competent in the competence standards that their own industry has defined, when they know what the performance expectations are and receive recognition for their abilities through successful assessments, they are likely to be more motivated and experience higher job satisfaction. The result is improved productivity for organizations. The communication and constructive feedback between future employers and employees will improve as a result of a competence-based approach, which can also increase productivity.

### **4. Reduced risk**

Using a competence-based approach to training, development, and assessment, employers are able to create project teams of people with complementary skills. A trainee's record of the skills, knowledge and understanding relating to the competence standards they have achieved can be used by a future employer to identify and provide further relevant training and assessment for new skills areas. Competence standards can shape employee development and promotional paths within an organization and give employees the opportunity to learn more competencies beyond their roles. It can also provide organizations with greater ability to scale and flex as needed, thereby reducing the risk they face.

### **5. Increased customer satisfaction**

Employees who have been trained and assessed using a competence-based approach are, by the definition of the relevant competence standards, able to perform the required tasks associated with a job. The knock-on effect is that, in service-related industries, they are able to provide high service levels, thereby increasing customer satisfaction. In production or manufacturing industries, they are able to work closely to industry standards in a more effective and efficient way.

## Lesson plans

This manual provides a series of lesson plans that will guide delivery of each module for the *Mobile Phone Technician qualification*. It is important for trainers to be flexible and be ready to adapt lesson plans to suit the context of the subject and the needs of their trainees. A simple lesson plan format is given below for your guidance. The Trainer will make it for very learning unit.

Good teachers acknowledge that CBT means each and every trainee in the class learns at a different speed. The good teacher is prepared to throw aside the day's lesson plan and do something different (and unplanned) for the class even if it means 'writing' a lesson plan for each trainee to match their learning pace for that day or week.

Learning by doing is different from learning theory and then applying it. To learn to do something, trainees need someone looking over their shoulder saying 'it's not quite like that, it's like this', 'you do it like this because ...', or even 'tell me why you chose to do it like this?'

In this way, trainees learn that theoretical knowledge is meaningless if it is not seen in the context of what they are doing. In other words, if a trainee doesn't know why they do something, they will not do it competently (skills underpinned by knowledge = competent performer).

This is how a Mobile Phone Technician *acquires* a practical grasp of the standards expected. It's not by learning it in theory, but because those standards are acquired through correction by people who show what the standards are, and correct the trainee where they do not meet those standards, and where they repeat it correction until they have internalized those standards.

## Demonstration of skill

Demonstration or modeling a skill is a powerful tool, which is used, in vocational training. The instructions for trainers for demonstration are as under:

- a) Read the procedure mentioned in the Trainer Guide for the relevant Learning Unit before demonstration.
- b) Arrange all tools, equipment and consumable material, which are required for demonstration of a skill.
- c) Practice the skill before demonstration to trainees, if possible.
- d) Introduce the skill to trainees clearly at the commencement of demonstration.
- e) Explain how the skill relates to the skill(s) already acquired and describe the expected results or show the objects to trainees.
- f) Carry out demonstration in a way that can be seen by all trainees.
- g) Use the same tools and materials that the learner will be using.
- h) Go through EACH of the steps involved in performing the skill.
- i) Go SLOWLY - describe each step as it is completed.
- j) Encourage the learners to move around and watch what you are doing from a number of different angles.
- k) Identify critical or complex steps, or steps that involve safety precautions to be followed.
- l) Explain theoretical knowledge where applicable and ask questions to trainees to test their understanding.
- m) Try to involve the learners: Ask them questions about why they think the process may work that way.
- n) Repeat critical steps in demonstration, if required.
- o) Summarize the demonstration by asking questions to trainees.

Involvement in the process (actively seeing) is important at this stage. When you work on getting involved, getting people to participate, you make them a part of what is happening. Questions for clarification or explanation are important throughout the demonstration. It is up to the learners to ask questions about things they do not understand, but it is also

important for trainers to seek out and elicit questions from learners. A trainer may need to do repeated demonstrations of difficult or complex skills.

Remember that the learner will learn a lot from your demonstration - and not just the demonstration itself. Learners will learn about how to perform the skills, but they will also learn from watching demonstrations how trainers treat the tools or materials and how they follow safety procedures.

After the demonstration, it is important to again seek out questions - be sure all questions are answered. The trainer should ask the learner if they are ready to try the skill. If not, there may be a need for recycling the demonstration (or part of it), and clarifying some of the information.

## Overview of the program

<b>Course: NVQ Certificate Level 1 Mobile Phone Technician</b>	<b>Total Course Duration:</b> 30 credit hours
<b>Course Overview:</b>	
<p>Mobile technology has become one of the fastest growing technologies in the world. Today people use mobile phones to stay in touch with friends and family, to share stories and photographs in social media, and to carry out financial transactions. This widespread ownership and use of mobile phones have created a need for professionals who can repair and service mobile phones. This course development will address this need.</p> <p>The Mobile Phone Technician Programme is to engage young people with a programme of development that will provide them with the knowledge, skills and understanding to start this career in Pakistan.</p>	

Module	Learning Unit	Duration
<p>➤ <b>Module A:</b> Adopt Health and Safety.</p> <p>Aim: The aim of this module is to develop basic knowledge, skills and understanding of professional safety standards need to save yourself and public and private property also perform basic first Aid treatment know about fire extinguisher PPE,s aware about company policies and procedure about safety</p>	<p><b>LU1.</b> Ensure personal protective equipment (PPE)</p> <p><b>LU2.</b> Maintain First-aid Box</p> <p><b>LU3.</b> Maintain Fire Extinguisher</p> <p><b>LU4.</b> Attain health &amp; safety training</p> <p><b>LU5.</b> Ensure Safety of Tools &amp; Equipment</p> <p><b>LU6.</b> Adopt Environmental Regulation</p> <p><b>LU7.</b> Adopt company policies &amp; procedures</p> <p><b>LU8.</b> Prepare for emergencies.</p> <p><b>LU9.</b> Respond to emergencies</p>	10 hours



Module	Learning Unit	Duration
<p>➤ <b>Module B:</b> Maintain Tools and Equipment.</p> <p><b>Aim:</b> it is important to know about tools and equipment's there proper use maintenance this module also give brief introduction of insulated and non-insulated tools and equipment's while the module also give idea of about importance of inventory of tools and equipment's</p>	<p><b>LU1.</b> Arrange Tools &amp; Equipment</p> <p><b>LU2.</b> Maintain Tool Kit</p> <p><b>LU3.</b> Insulate Tools and Equipment</p> <p><b>LU4.</b> Calibrate measuring instruments.</p> <p><b>LU5.</b> Manage Inventory of tools and equipment.</p>	<p>10 hours</p>
<p>➤ <b>Module C:</b> Measure Basic Electrical &amp; Electronics Units in Series/Parallel Circuits.</p> <p><b>Aim:</b> This module discuss about basic electrical quantities and there measurements also we study about resistors capacitors, transformers diodes inductors there working functions and checking</p>	<p><b>LU1.</b> Measure Electrical Current and Resistance</p> <p><b>LU2.</b> Perform Voltage Measurement</p> <p><b>LU3.</b> Measure Electrical Power</p> <p><b>LU4.</b> Perform Capacitor and Inductor measurement/Test</p> <p><b>LU5.</b> Perform Low voltage transformer test</p> <p><b>LU6.</b> Construct rectifier circuit and DC regulated power supply</p>	<p>10 hours</p>

## Lesson Plan Template - EXAMPLE

<b>Module</b>			
<b>Learning unit</b>			
<b>Learning outcome</b>			
<b>Methods</b>	<b>Key Notes</b>	<b>Media</b>	<b>Time</b>
<b>Introduction</b>			
Introduce the topic and its daily applications to motivate the learner to attain his/her full consideration towards the topic. Recal the previous lesson and then connect with new topic.			
<b>Main Body</b>			
Present the new information .divide the topic into small section like define, describe To make learning as well as delivering easy .demonstrate the skill relevant to the learning unit.			
<b>Conclusion</b>			
Summarize the complete lesson to memorize the learners the key notes.			
<b>ASSESSMENT</b>			
How this lesson will be assessed? Feedback from students and for students.			
			Total time

**SAMPLE FOR LESSON PLAN**

**Module: Adopt Health and Safety**

**Learning Unit**> Ensure personal protective equipment (PPE)

Learning Outcomes> Trainee will be able to:

- Arrange personal protective equipment as per requirements
- Wear correct personal protective equipment
- Store PPE at appropriate place after use.

**Methods** :Presentation/Lecture(Theory),Demonstration(practical) **Key Notes: PPE's**

Media: Multimedia Time:  
,presentation 03 hrs.

**Introduction Time: 30 Minute**

**Objectives.** After completing the Learning unit you will able to know about PPE'S, Use of 'PPES as per requirements of job and store PPES at appropriate place after use.

Motivate the students by videos/quotes/or through brain storming and then connect the topic with previous one to establish connection with previous lesson/unit and new one.

**Main Body Time: 2:00 hrs.**

- Describe what is PPE, s.
- Discuss why we are using PPE, s.
- Explain the PPE,s and correct uses
- Demonstrate the use of PPE, s.

Group Activity: what will happened if we don't use gloves or goggles

- **Group Discussion**

**Conclusion Time: 15 Minute.**

Summarize the topic and discussion

**Assessment Time :15 Minute**

Questions Answering Session

**Total time: 03 Hrs.**

# MOBILE PHONE TECHNICIAN



Module-A  
TRAINER GUIDE  
National Vocational Certificate Level 1

Version 1 - November, 2019

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## Trainer's guidelines

Module A: Adopt Health and Safety			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p><b>LU1.</b></p> <p>Ensure personal protective equipment (PPE)</p>	<p>Demonstrate the arrangement, use and proper storing techniques of PPE's for development of the trainee's skills required for performance of the task to <b>Ensure personal protective equipment (PPE).</b></p> <ul style="list-style-type: none"> <li>• Identification ,Method and Technique to Arrange personal protective equipment as per requirements</li> <li>• Identify the correct use of personal protective equipment.</li> <li>• Demonstrate the method to wear the correct personal protective equipment               <ul style="list-style-type: none"> <li>• Demonstrate the Method and technique to Store PPE at appropriate place after use</li> </ul> </li> </ul> <p>Divide the Trainees into Group for role play Observe the students and give feedback to Improve the Knowledge and skill.</p>	<p>Classroom/ lab with Multi media</p>	<ul style="list-style-type: none"> <li>○ Learner guide</li> <li>○ All PPE ready available</li> <li>○ Handouts Regarding to personal protective Equipment.</li> </ul>

<p><b>LU2.</b> Maintain First-aid Box</p>	<p>Define the purpose and importance of 1<sup>st</sup> aid box then discuss and demonstrate the following points</p> <ul style="list-style-type: none"> <li>• How to Ensure availability of first aid box</li> <li>• How to Check first aid box for requisite items</li> <li>• How to Check expiry of medicines</li> <li>• Demonstrate the Method to Perform first aid treatment against electric shocks</li> </ul> <p>Ask learners to work in small groups. Each small group should prepare a first Aid box and giving First Aid to trainee as a role-play.</p> <p>Observe the students and give feedback for improvements.</p>	<p>Classroom/lab</p>	<p>Learner guide Handout illustrating examples of:</p> <ul style="list-style-type: none"> <li>• Medicines</li> <li>• Tools like seizer</li> <li>• Antiseptic</li> <li>• Cottons</li> <li>• Polyfex skin ointment</li> <li>• Iodine</li> </ul>

<p><b>LU3:</b> Maintain Fire Extinguisher</p>	<p>Lead a discussion about the importance of managing fire extinguisher and prepare the fire extinguisher for working. Ensure the discussion focuses on the following points:</p> <ul style="list-style-type: none"> <li>• How to Check expiry of fire extinguisher</li> <li>• The correct method to Operate fire extinguisher</li> <li>• How to Replace fire extinguisher</li> </ul> <p>Following the discussion, arrange the trainees in small groups. Provide each group with a role play situation. Each group should use the fire extinguisher in real world or in real situation.</p> <p>Observe the students and give feedback for improvements.</p>	<p>Classroom</p>	<p>Learner guide Handouts illustrating:</p> <ul style="list-style-type: none"> <li>• Standard Operating procedures for FIRE extinguisher</li> <li>• Job descriptions for associates</li> <li>• Organisational quality standards for food and other items</li> </ul>
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<p><b>LU 4.</b> Attain health &amp; safety training</p>	<p>Demonstrate and arrange a training session and clarify the following points</p> <ul style="list-style-type: none"> <li>• How to Take required health and safety training</li> <li>• The Method and techniques to Manage Risk control in the work place area</li> <li>• Brief the trainees to Implement work hazardous material information system (WHMIS)</li> <li>• Demonstrate the Method for first aid cardio respiratory, resuscitation and CPR</li> <li>• How to Report Risk / hazard of the work place</li> </ul> <p>Give a practical for practice .each trainee should practice individually . Observe the students and give feedback for improvements.</p>	<p>Classroom/ Lab</p>	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• Handout illustration</li> <li>• All material should be readily available for all type of Hazards and electric shocks</li> </ul>
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<p><b>LU5.</b> Ensure Safety of Tools &amp; Equipment</p>	<p>The trainer should start the session with a quote ,picture or video to attain the attention of the learners and then demonstrate the following</p> <ul style="list-style-type: none"> <li>• How to Ensure insulation of tools and equipment</li> <li>• Method and techniques to Store tools and equipment safely</li> <li>• Demonstrate House Keeping to Clean tools on a regular basis before storing.</li> </ul> <p>Divide the learners into group of 03 students and practice to ensure safety of tools and equipment.</p> <p>Observe the students and give feedback for improvements.</p>	<p>Class Room /Lab</p>	<ul style="list-style-type: none"> <li>• Multi media</li> <li>• Presentation</li> <li>• Learner guide</li> <li>• Hand out</li> <li>• Different tools and equipment</li> <li>• Sign boards</li> </ul>
<p><b>LU6.</b> Adopt Environmental Regulation</p>	<p>Discuss with the students the following points for adopting environmental regulation and then demonstrate the following :</p> <ul style="list-style-type: none"> <li>• How to Check applicable permits on job site</li> <li>• How to maintain and Ensure work friendly environment</li> <li>• Describe the methods to Adopt environmental regulations</li> </ul> <p>Divide the students in a group for role play. Observe the students and give feedback for improvements.</p>	<p>Class room</p>	<ul style="list-style-type: none"> <li>• Media</li> <li>• Presentation</li> <li>• Learner guide</li> <li>• Regulation hand out</li> </ul>

<p><b>LU7.</b> Adopt company policies &amp; procedures</p>	<p>The teacher must demonstrate the following points</p> <ul style="list-style-type: none"> <li>• Knowledge about policy</li> <li>• Knowledge about procedures</li> <li>• Importance of policies and procedures.</li> <li>• Ensure company policy and procedures</li> <li>• How to adopt company procedures</li> </ul> <p>Give some example from daily life to clear the concept of the trainees.</p> <p>Observe the students and give feedback for improvements.</p>	<p>Class room</p>	<ul style="list-style-type: none"> <li>• Multi Media</li> <li>• Presentation</li> <li>• Learner guide</li> <li>• Hand out</li> </ul>
<p><b>LU8.</b> Prepare for emergencies</p>	<p>Discuss and Demonstrate the following Points</p> <ul style="list-style-type: none"> <li>• What is emergency</li> <li>• Type of emergency</li> <li>• Demonstrate how to response an emergency</li> <li>• Method and Techniques for first aid cardio respiratory, resuscitation and CPR</li> <li>• Demonstrate different emergency exercise</li> </ul> <p>Divide trainees into group for emergency preparation .assign an activity which boost the knowledge about emergencies.</p> <p>Observe the students and give feedback for improvements.</p>	<p>Class Room /Lab</p>	<ul style="list-style-type: none"> <li>• Multi media</li> <li>• Video</li> <li>• Hand out</li> <li>• Presentation</li> </ul>

<p><b>LU9:</b> Respond to emergencies</p>	<p>Demonstrate the following points:</p> <ul style="list-style-type: none"> <li>• How to Follow emergency plan</li> <li>• How to Communicate instructions to co workers</li> <li>• Discuss and Assess risk and determine course of action</li> <li>• How to Operate emergency equipment and supplies</li> </ul> <p>Divide the students in a Group to practice on the above points</p> <p>Observe the students and give feedback for improvements.</p>	<p>Class room /lab</p>	<ul style="list-style-type: none"> <li>• Multi media</li> <li>• Video</li> <li>• Hand out</li> <li>• Presentation</li> </ul>
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# MOBILE PHONE TECHNICIAN



Module-B  
TRAINER GUIDE  
National Vocational Certificate Level 1

Version 1 - November, 2019

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## Module B: Maintain Tools and Equipment

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<b>LU1.</b> Arrange Tools & Equipment	<p>Discuss and demonstrate the importance of tools and equipment.to select the proper tools and equipment is very essential step.</p> <p>If necessary, prompt learners to consider the following:</p> <ul style="list-style-type: none"><li>• Identify tools and equipment</li><li>• how to Prepare list of tools and equipment as per requirement</li><li>• Method and techniques to check specifications of measuring Instruments</li><li>• How to Collect tools and equipment from store</li></ul> <p>Arrange an activity to differentiate the tools and equipment by the students /trainees.</p> <p>Observe the students and give feedback for improvements.</p>	Classroom / Lab	<ul style="list-style-type: none"><li>• Learner guide</li><li>• Handout of key points illustrating ways to ensure the tools and equipment class or types.</li><li>• Multi media</li><li>• Presentation</li></ul>

## Module B: Maintain Tools and Equipment

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<b>LU2.</b> Maintain Tool Kit	<p>Deliver an illustrated presentation/Demonstration on ways to ensure the maintenance of tool kit. Ensure that the presentation addresses the following points:</p> <ul style="list-style-type: none"><li>• Check Physical Condition of Tools &amp; Equipment before use</li><li>• Perform preventive maintenance as per standards</li><li>• Perform corrective maintenance (If required)</li><li>• Clean Tools and equipment after use</li></ul> <p>Place tools and equipment at appropriate place</p> <p>Arrange learners in pairs. Ask each pair to devise 5 questions with correct answers about ways to ensure how to maintain toolkit.</p>	Classroom	<ul style="list-style-type: none"><li>• Learner guide</li><li>• Handout</li><li>• Multi media</li><li>• Presentation</li><li>• All tools and equipment readily available</li></ul>

<b>Module B: Maintain Tools and Equipment</b>			
<b>Learning Unit</b>	<b>Suggested Teaching/ Learning Activities</b>	<b>Delivery Context</b>	<b>Media</b>
<b>LU3.</b> Insulate Tools and Equipment	Demonstrate the students how to differentiate the insulated and non-insulated tools and equipment and clear the following : <ul style="list-style-type: none"> <li>• Insulation of tools and equipment</li> <li>• Importance of insulation</li> <li>• Good insulated tools and equipment</li> <li>• Bad insulated /damage insulated tools and equipment.</li> <li>• Method and technique to identify the insulated and non-insulated tools and equipment.</li> </ul> <p>Divide the students to perform the above.</p> <p>Observe the students and give feedback for improvements.</p>	Classroom/Lab	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• Hand outs</li> <li>• Multi media</li> <li>• Presentation</li> <li>• Different tools and equipment</li> </ul>
<b>LU4.</b> Calibrate measuring instruments	Demonstrate the students how to differentiate the insulated and non-insulated tools and equipment and clear the following : <ul style="list-style-type: none"> <li>• How to Check calibration status of the measuring tools</li> <li>• Perform calibration of measuring tools as per standards</li> </ul>	Classroom/Lab	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• Hand outs</li> <li>• Multi media</li> <li>• Presentation</li> <li>• Different tools and equipment</li> <li>• Screw drivers</li> <li>• Multi meters</li> </ul>

<b>Module B: Maintain Tools and Equipment</b>			
<b>Learning Unit</b>	<b>Suggested Teaching/ Learning Activities</b>	<b>Delivery Context</b>	<b>Media</b>
	<ul style="list-style-type: none"> <li>Record Calibration test results</li> </ul> <p>Assign an activity to calibrate the tools in group. Observe the trainees for correct calibration.</p>		
<p><b>LU6.</b> Manage Inventory of tools and equipment</p>	<p>Discuss /Demonstrate the management of inventory list of tools and equipment keeping the following points in mind</p> <ul style="list-style-type: none"> <li>How to Check number of tools and equipment as per record</li> <li>How to Report for faulty tools and equipment</li> <li>How to Generate demand for defective tools and equipment</li> <li>Method and Technique to Maintain record of all tools and equipment</li> </ul> <p>Give a related activity to perform the above task.</p> <p>Observe the students and give feedback for improvements.</p>	Classroom/Lab	<ul style="list-style-type: none"> <li>Learner guide</li> <li>Hand outs</li> <li>Presentation</li> <li>Inventory register</li> <li>Stock register</li> </ul>



# MOBILE PHONE TECHNICIAN



Module-C  
TRAINER GUIDE  
National Vocational Certificate Level 1

Version 1 - November, 2019

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<b>Module C: Measure Basic Electrical &amp; Electronics Units in Series/Parallel Circuits</b>			
<b>Learning Unit</b>	<b>Suggested Teaching/ Learning Activities</b>	<b>Delivery Context</b>	<b>Media</b>
<b>LU1.</b> Measure Electrical Current and Resistance	<p>Deliver a presentation and demonstration on the importance of measuring. Ensure that the presentation addresses the following points:</p> <ul style="list-style-type: none"> <li>• Arrange tools, material and equipment for measurement of electric current</li> <li>• Construct series arrangement of resistances in a closed loop circuit</li> <li>• Construct Parallel arrangement of resistances in a closed loop circuit</li> <li>• Perform measurement of Electrical resistance in a series / Parallel circuit</li> <li>• Perform measurement of Alternating current in a series / Parallel circuit</li> <li>• Perform measurement of Direct Current in a series / Parallel circuit</li> </ul> <p>Give an activity to group of students to measure the voltage and resistance.</p> <p>Observe the students and give feedback for improvements.</p>	Classroom /LAB	<ul style="list-style-type: none"> <li>• Learner guide</li> </ul> Handout illustrating: <ul style="list-style-type: none"> <li>• Connecting volt meter in the circuit</li> <li>• Connecting ohms meter in the circuit</li> <li>• Multi media</li> <li>• Presentation</li> <li>• Volt meter</li> <li>• Ohm meter</li> </ul>

<b>Module C: Measure Basic Electrical &amp; Electronics Units in Series/Parallel Circuits</b>			
<b>Learning Unit</b>	<b>Suggested Teaching/ Learning Activities</b>	<b>Delivery Context</b>	<b>Media</b>
<b>LU2.</b> Perform Voltage Measurement	<p>Demonstrate the method to measure the voltage and describe the following points</p> <ul style="list-style-type: none"> <li>• Arrange tools, material and equipment for measurement of Voltage</li> <li>• Perform measurement of AC Voltage in a series / Parallel circuit</li> <li>• Perform measurement of DC Voltage in a series / Parallel circuit</li> </ul> <p>Divide the trainees into group of 3 students and let them to measure the voltage.</p> <p>Observe them and guide them for task and give feedback where necessary.</p>	Classroom/Lab	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• Volt meter</li> <li>• Multi meter</li> <li>• Log book</li> <li>• Voltage sources</li> </ul>

<b>Module C: Measure Basic Electrical &amp; Electronics Units in Series/Parallel Circuits</b>			
<b>Learning Unit</b>	<b>Suggested Teaching/ Learning Activities</b>	<b>Delivery Context</b>	<b>Media</b>
<b>LU3.</b> Measure Electrical Power	<p>Demonstrate the method to measure the power and describe the following points</p> <ul style="list-style-type: none"> <li>• Arrange tools, material and equipment for measurement of Electrical Power</li> <li>• Perform Measurement of Electrical Power for the series / Parallel circuit</li> </ul> <p>Divide the trainees into group of 3 students and let them to measure the voltage.</p> <p>Observe them and guide them for task and give feedback where necessary.</p>	Classroom/lab	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• watt meter</li> <li>• Multi meter</li> <li>• Log book</li> <li>• Voltage sources</li> </ul>

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<p><b>LU4.</b></p> <p>Perform Capacitor and Inductor measurement/Test</p>	<p>Demonstrate the following :</p> <ul style="list-style-type: none"> <li>• Take a capacitor and inductor to motivate the learner by asking what is this and where it is used.discusing and then describe and demonstrate the following points:</li> <li>• Arrange tools, material and equipment for measurement of Capacitor / Inductor</li> <li>• Perform measurement of Capacitor / Inductor with LCR meter</li> <li>• Perform Open circuit / Short Circuit test for the Capacitor</li> </ul> <p>Divide the trainees into group of 3 students and let them to measure /test the capacitor and inductor turn by turn.</p> <p>Observe them and guide them for task and give feedback where necessary.</p>	Classroom/lab	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• Multi media</li> <li>• Presentation</li> <li>• Capacitor</li> <li>• Inductor</li> <li>• Meters</li> <li>• Log book</li> <li>• Instruction sheets</li> </ul>

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<b>LU5.</b> Perform Low voltage transformer test	<p>Give a presentation and demonstration on voltage and transformer for knowledge understanding .the presentation should cover the following points:</p> <ul style="list-style-type: none"> <li>• How to Arrange tools, material and equipment for the transformer test</li> <li>• How to Perform Open circuit / Short Circuit test for the Low voltage Transformer.</li> </ul> <p>After presentation demonstrate how to test the transformer for low voltage.</p> <p>Assign an activity to the group of trainee to test the transformer. observe them and provide feedback.</p> <p>Observe the students and give feedback for improvements.</p>	Class room /LAB	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• Multi media</li> <li>• Presentation</li> <li>• Transformer low voltage</li> <li>• Meters</li> <li>• Log book</li> <li>• Instruction sheets</li> </ul>

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<b>Learning Unit</b>	<b>Suggested Teaching/ Learning Activities</b>	<b>Delivery Context</b>	<b>Media</b>
<p><b>LU6.</b> Construct rectifier circuit and DC regulated power supply</p>	<p>Explain the function and the elements of the rectifier circuit through presentation .the presentation cover the following points:</p> <ul style="list-style-type: none"> <li>• Arrange tools, material and equipment for the Rectifier circuit</li> <li>• Construct half wave / Full wave rectifier circuit</li> <li>• Construct bridge arrangement from diodes for full wave rectification</li> <li>• Measure Output voltage of rectifier with Oscilloscope.</li> <li>• Construct 5 volt regulated DC power supply.</li> <li>• Measure Output voltage of regulated DC power supply with Oscilloscope</li> </ul> <p>Now divide the students into group and assign an activity to construct the rectifier circuit and DC power regulated supply.</p> <p>Observe trainees and give feedback.</p>	<p>Class room / Lab</p>	<ul style="list-style-type: none"> <li>• Learner guide</li> <li>• Multi media</li> <li>• Presentation</li> <li>• Transformer low voltage</li> <li>• Diodes</li> <li>• Capacitors</li> <li>• Zener diodes</li> <li>• Connecting wires</li> <li>• Meters</li> <li>• Log book</li> <li>• Instruction sheets</li> </ul>

## Frequently Asked Questions

<p>1. What is Competency Based Training (CBT) and how is it different from currently offered trainings in institutes?</p>	<p>Competency-based training (CBT) is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a program of training. Compared to conventional programs, the competency based training is not primarily content based; it rather focuses on the competence requirement of the envisaged job role. The whole qualification refers to certain industry standard criterion and is modularized in nature rather than being course oriented.</p>
<p>2. What is the passing criterion for CBT certificate?</p>	<p>You shall be required to be declared “Competent” in the summative assessment to attain the certificate.</p>
<p>3. What are the entry requirements for this course?</p>	<p>The entry requirement for this course is 10 th Grade or equivalent.</p>
<p>4. How can I progress in my educational career after attaining this certificate?</p>	<p>You shall be eligible to take admission in the National Vocational Certificate Level-3 in Mobile phone technician program. You shall be able to progress further to National Vocational Certificate Level-4 in Mobile phone technician program; and take admission in a level-5, DAE or equivalent course. In certain case, you may be required to attain an equivalence certificate from The Inter Board Committee of Chairmen (IBCC).</p>
<p>5. If I have the experience and skills mentioned in the competency standards, do I still need to attend the course to attain this certificate?</p>	<p>You can opt to take part in the Recognition of Prior Learning (RPL) program by contacting the relevant training institute and getting assessed by providing the required evidences.</p>
<p>6. What is the entry requirement for Recognition of Prior Learning program (RPL)?</p>	<p>There is no general entry requirement. The institute shall assess you, identify your competence gaps and offer you courses to cover the gaps; after which you can take up the final assessment.</p>
<p>7. Is there any age restriction for entry in this course or Recognition of</p>	<p>There are no age restrictions to enter this course or take up the Recognition of Prior Learning program</p>



Prior Learning program (RPL)?	
8. What is the duration of this course?	The duration of the course work is 6 Month. (11 months)
9. What are the class timings?	The classes are normally offered 25 days a month from 08:00am to 01:30pm. These may vary according to the practices of certain institutes.
10. What is equivalence of this certificate with other qualifications?	As per the national vocational qualifications framework, the level-4 certificate is equivalent to Matriculation. The equivalence certificate can be obtained from The Inter Board Committee of Chairmen (IBCC).
11. What is the importance of this certificate in National and International job market?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTTC). These standards are also recognized worldwide as all the standards are coded using international methodology and are accessible to the employers worldwide through NAVTTTC website.
12. Which jobs can I get after attaining this certificate? Are there job for this certificate in public sector as well?	You shall be able to take up jobs in Mobile phone technician industries ,workshops and you can start business in Mobile phones in house or internationally.
13. What are possible career progressions in industry after attaining this certificate?	You shall be able to progress up to the level of supervisor after attaining sufficient experience, knowledge and skills during the job. Attaining additional relevant qualifications may aid your career advancement to even higher levels.
14. Is this certificate recognized by any competent authority in Pakistan?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTTC). The official certificates shall be awarded by the relevant certificate awarding body.
15. Is on-the-job training mandatory for this certificate? If yes, what is the duration of on-the-job training?	On-the-job training is not a requirement for final / summative assessment of this certificate. However, taking up on-the-job training after or during the course work may add your chances to get a job afterwards.
16. How much salary can I get on job after attaining this certificate?	The minimum wages announced by the Government of Pakistan in 2019 are PKR 17,500. This may vary in subsequent years and different regions of the country. Progressive employers may pay more than the mentioned amount.

<p>17. Are there any alternative certificates which I can take up?</p>	<p>There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field.</p>
<p>18. What is the teaching language of this course?</p>	<p>The teaching language of this course is Urdu and English.</p>
<p>19. Is it possible to switch to other certificate programs during the course?</p>	<p>There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field.</p>
<p>20. What is the examination / assessment system in this program?</p>	<p>Competency based assessments are organized by training institutes during the course which serve the purpose of assessing the progress and preparedness of each student. Final / summative assessments are organized by the relevant qualification awarding bodies at the end of the certificate program. You shall be required to be declared "Competent" in the summative assessment to attain the certificate.</p>
<p>21. Does this certificate enable me to work as freelancer?</p>	<p>You can start your small business of stitching leather garments, gloves or other products. You may need additional skills on entrepreneurship to support your initiative.</p>

## Test Yourself (Multiple Choice Questions)

### MODULE 1

Please mark the correct one from the given options.

**QNO1: Which of the following is correct for risk assessment?**

- A. It is a good idea to do, but not essential
- B. It is a legal requirement and must always be carried out prior to starting the job
- C. Only do it if the job is a big job
- D. Only needs to be done for hazardous work

**QNO2: What does a risk assessment tell you?**

- A. How to report accidents
- B. Where the first aid box is and the first aiders
- C. The working hours of the organization
- D. How to do the job safely

**QNO3: Why should regular inspections of the workplace take place?**

- A. To check whether the working environment is safe
- C. To check everyone is doing their job

- B. To prepare for a visit from a Health Safety Execution inspector
- D. To check that all staff are present and correct

**QNO4: What is a hazard?**

- A. Anything with the potential to cause harm
- B. The likelihood of something going wrong
- C. Where an accident is likely to cause harm
- D. An Accident waiting to happen

**QNO5: Accidents are best prevented by:**

- A. The Health and Safety Executive
- B. People being aware of hazards and working in safe manner
- C. Employers inspecting workplaces
- D. The Managing Director

**QNO6: What is a Prohibition Notice?**

- A. When you finish the work you must not start again
- B. Work is to stop for that day
- C. The work must stop immediately
- D. You must complete this day's work and inform your supervisor

**QNO7: Who would you expect to carry out a risk assessment in your workplace?**

- A. A competent person
- B. General operative
- C. Health and Safety Executive
- D. The client

**QNO8: The safety regulations require an employer to provide which of the following?**

- a. Toilet facilities
- b. Personal protective equipment
- b. Hand tools
- d. Lunch

**QNO9: An employer is responsible for which of the following persons?**

- a. Only for the employer's own personnel.
- c. Only for the employer's own and hired-in personnel
- b. For everyone at the construction site and for the local residents
- d. None of them

**QNO10: For which actions is the risk of accident the highest?**

- a. Fashioning steel with an angle grinder.
- c. Fashioning steel with a hammer
- b. Fashioning steel with a file.
- d. None of them

**QNO11: Arrange Tools & Equipment it is important to know about**

- A. Identify of tool and Equipment's  
B. Prepare list of tools And equipment  
C. specifications of tool  
D. none of them

**QNO12: to use tool make sure that tools**

- A. Insulated  
B. Accurate  
C. complete  
D. all of them

**QNO13: the unite of current is**

- A. volts  
B. ohms  
C. ampere  
D. all of them

**QNO14: voltage is necessary for**

- A. flow of power  
B. flow of current  
C. flow of resistance  
D. flow of resistanc

**QNO15: The opposing capacity of materials against the current flow is**

- a) Conductance  
b) Inductance  
c) Susceptance  
d) Resistance

<b>Answers Key</b>	
Number	Correct Answer
1	B
2	D
3	A
4	A
5	C
6	B
7	A
8	A

9	B
10	A
11	A
12	D
13	C
14	B
15	D



