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SATELLITE DISH INSTALLER



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LEARNER GUIDE

National Vocational Certificate Level 1

Version 1 - October, 2019



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Introduction

Welcome to your Learner's Guide for the *SATELLITE DISH INSTALLER* Programme. It will help you to complete the programme and to go on to complete further study or go straight into employment.

The *SATELLITE DISH INSTALLER* 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. The programme has been developed to address specific issues, such as the national, regional and local cultures, the manpower availability within the country, and meeting and exceeding the needs and expectations of their customers.

The main elements of your learner's guide are:

- **Introduction:**
 - This includes a brief description of your guide and guidelines for you to use it effectively
- **Modules:**
 - The modules form the sections in your learner's guide
- **Learning Units:**
 - Learning Units are the main sections within each module
- **Learning outcomes:**
 - Learning outcomes of each learning units are taken from the curriculum document
- **Learning Elements:**
 - This is the main content of your learner's guide with detail of the knowledge and skills (practical activities, projects, assignments, practices etc.) you will require to achieve learning outcomes stated in the curriculum
 - This section will include examples, photographs and illustrations relating to each learning outcome
- **Summary of modules:**
 - This contains the summary of the modules that make up your learner's guide
- **Frequently asked questions:**
 - These have been added to provide further explanation and clarity on some of the difficult concepts and areas. This further helps you in preparing for your assessment.
- **Multiple choice questions for self-test:**
 - These are provided as an exercise at the end of your learner's guide to help you in preparing for your assessment.

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Module-1
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Module 1: 0619001080 Maintain Tools and Equipment

Objective of the module: The objective of this module is to provide skills and knowledge required to Arrange Tools & Equipment, Maintain Tool Kit, Insulate Tools and Equipment, calibrate measuring instruments and Manage Inventory of tools and equipment.

Duration **50** hours **Theory:** **10** hours **Practical:** **40** hours



Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1: Arrange Tools & Equipment	The student will be able to: 1. Identify tools and equipment 2. Prepare list of tools and equipment as per requirement 3. Check specifications of measuring Instruments 4. Collect tools and equipment from store	<ul style="list-style-type: none"> • Describe the types of tools and different type of equipment. • Enlist and prepare a toolkit for Dish installation. • Calibrate measuring instrument if any requirement • Study the issuance procedure of tool & equipment from store. Practical-1 Enlist and prepare a toolkit for dish assembly. Practical-2 Enlist and prepare a toolkit for cable layout. Practical-3 Enlist and prepare a toolkit for electrical wiring.	Learner guide Multi-media projector Handouts Videos Tools and Equipment <ul style="list-style-type: none"> • Blower • Chisel • Drill bits • Ellen key set • Files • Glasses (goggles) • Gloves • Grip plier • Hacksaw • Hammers • Marking punch • Measuring tape • Micrometers • Nose plier • Open spanner set

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
			<ul style="list-style-type: none"> • Phase tester • Plier • Ring spanner set • Scissors • Screw driver set • Screw wrench • Side cutter • Crimping Tool • Solder iron • Spanner box • Steel roll/Steel wire • Sucker • Silicone Gun • Spirit Level • Electric Drill Machine • Hand Grinding Machine • Thimble plier • Tongs (sunny) • Vernier caliper • Wire gauge • Wire stripper • Adjustable Wrench • Satellite Finder • Multi-meter • Digital Compass • Wire Tester • LAN Tester • Rivet Gun

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
			<ul style="list-style-type: none"> • Emergency lamp • Coaxial Cable Stripper • Cable Compression Tool • Cable tester
LU2: Maintain Tool Kit	The student will be able to: <ol style="list-style-type: none"> 1. Check physical condition of tools & equipment before use 2. Perform preventive maintenance as per standards 3. Perform corrective maintenance (If required) 4. Clean Tools and equipment after use 5. Place tools and equipment at appropriate place. 	<ul style="list-style-type: none"> • Explain proper selection of every tool as per requirement. • Demonstrate preventive and corrective maintenance of tools. i.e. • Demonstrate cleanliness of tools with cleaning spray. <p>Practical :</p> <p>Tool identification and usage as per requirement.</p> <p>Proper handling and maintenance of each tool.</p> <p>Practice tool cleanliness with the help of cleaning material.</p>	Learner guide Multi-media projector Handouts Videos Tools and Equipment as (LU1)
LU3: Insulate tools and equipment	The student will be able to: <ol style="list-style-type: none"> 1. Select insulated tools and equipment. 2. Adopt insulated tools and equipment as per standard. 	<ul style="list-style-type: none"> • Explain insulation types. • Explain insulation standards and techniques. <p>Practical-1</p> <p>Demonstrate insulating and non-insulating materials as per tool requirement.</p>	Learner guide Multi-media projector Handouts Videos Tools and Equipment as (LU1)

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
		<p>Demonstration of insulation for different tools.</p>	
<p>LU4: Calibrate measuring instruments</p>	<p>The student will be able to:</p> <ol style="list-style-type: none"> 1. Check calibration status of measuring tools. 2. Perform calibration of measuring tools as per standards. 3. Record calibration test results. 	<ul style="list-style-type: none"> • Define basics of calibration and its importance. • Define calibration standards. • Demonstrate to record test results. <p>Practical-1</p> <p>Demonstrate calibration of required tools and equipment.</p> <p>i.e calibration of millimeter, satellite finder etc.</p>	<p>Learner guide Multi-media projector Handouts Videos</p> <p>Tools and Equipment as (LU1)</p>
<p>LU5: Manage inventory of tools and equipment</p>	<p>The student will be able to:</p> <ol style="list-style-type: none"> 1. Check number of tools and equipment as per record. 2. Report for faulty tools and equipment. 3. Generate demands for defective tools and equipment. 4. Maintain record of all tools and equipment. 	<ul style="list-style-type: none"> • Demonstrate check list for each tool and equipment available in inventory. • Demonstrate to identify the faulty tools and equipment. • Demonstrate requirement for purchase of new tools. • Define tools and equipment list with the help of MS office. <p>Practical:</p> <ul style="list-style-type: none"> • Prepare tool and equipment inventory check list. • Identify faults in tools and equipment. 	<ul style="list-style-type: none"> • Learner guide <p>Multi-media projector Handouts Videos</p> <p>Tools and Equipment as (LU1)</p>

Examples and illustrations

Videos	Link
 <p>15:48</p>	<p>How to Clean Your Tools</p> <p>https://www.youtube.com/watch?v=CHTHif55nSw</p>
 <p>RG214</p> <p>RG141</p> <p>RG178</p> <p>LMR195</p> <p>086</p> <p>RG59</p> <p>RG8</p> <p>RG174</p> <p>RG213</p> <p>RG6</p> <p>RG316</p> <p>RG405</p> <p>Equipment Calibration and Verification:</p>	

There are several rules for equipment calibration and its verification some are listed below complete detail can be check from <https://isoconsultantkuwait.com/2019/01/23/procedure-for-equipment-calibration-and-maintenance/>.

QA Managers/Supervisors shall include procedures for calibration and/or performance verification of new equipment in Section technical procedures.

Calibration procedures shall be appropriate for the intended use of the equipment and shall provide criteria for determining if calibration is satisfactory.

Manufacturer operating manuals shall be consulted to determine the correct calibration interval. Equipment which requires calibration shall not be used if satisfactory calibration cannot be achieved or the calibration date has passed. Equipment used infrequently, such that the manufacturers' recommendations cannot be followed, shall have calibration verified prior to use. Prior to being used in testing, new equipment (or any piece of equipment which leaves the control of the Laboratory) shall undergo calibration procedures or performance verification.

Calibration records shall be maintained and associated with the unique identifier of each piece of equipment. These records shall include:

- the identity of the item of equipment and software.
- Name of manufacturer.
- Serial number or unique identifier.
- Date of calibration.
- Current location.
- Manufacturer's instructions or a reference to location.
- The reference standard certified reference material or reference material used for calibration.
- Copies of all reports, results of calibration, and/or certificates of calibration.

- A maintenance plan and due date for the next calibration.
- The identity of the individual performing calibration.

When external calibrations are performed, service providers that demonstrate competence, measurement capability, and traceability shall be used. Calibration certificates from these providers shall contain the measurement results, including the measurement uncertainty and/or a statement of compliance with an identified metrological specification. When possible, providers accredited to ISO 17025 shall be used. Copies of the provider's accreditation documentation shall be maintained by the Quality Manager (QM). If calibrations are performed by an outside vendor, the Section document control custodian shall maintain the original calibration records provided by the vendor and a copy of the relevant records shall be readily available. Laboratory equipment requiring calibration shall be labelled or coded to indicate the calibration status, including the date when last calibrated and the due date for recalibration (or expiration criteria for when recalibration is due).

Overview of the program

Course: <i>Satellite Dish Installer, Level-1</i>	Total Course Duration: 100 hours
Course Overview:	
<p>The purpose of the training is to provide skilled manpower to improve the existing capacity of Electronics sector. This training will provide the requisite skills to the trainees to Install Satellite Dish. It will enable the participants to meet the challenges in the field of Satellite Dish industry. Further, to improve the skill level of the technician and prepare them for the Electronics industry to meet the market competition nationally and internationally.</p> <p>The core purpose of this qualification is to produce employable Satellite Dish Installer who could Install Satellite Dish according to national and international standards. In addition this qualification will prepare unemployable youth to employee in this sector.</p>	

Module	Learning Unit	Duration
Module 1: Maintain Tools and Equipment Aim: The objective of this module is to provide skills and knowledge required to Arrange Tools & Equipment, Maintain Tool Kit, Insulate Tools and Equipment, calibrate measuring instruments and Manage Inventory of tools and equipment.	LU1: Arrange Tools & Equipment LU2: Maintain Tool Kit LU3: Insulate tools and equipment LU4: Calibrate measuring instruments LU5: Manage inventory of tools and equipment	100 hours

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 as follow.</p> <ul style="list-style-type: none"> • Middle (Grade 8) for level-1 • Level-1 for level-2 • Level-2 for level-3 • Level-3 for level-4
<p>4. How can I progress in my educational career after attaining this certificate?</p>	<p>You shall be able to progress further to National Vocational Certificate Level-4 in satellite Dish Installer; 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>

6. What is the entry requirement for Recognition of Prior Learning program (RPL)?	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.
7. Is there any age restriction for entry in this course or Recognition of Prior Learning program (RPL)?	There are no age restrictions to enter this course or take up the Recognition of Prior Learning program
8. What is the duration of this course?	The duration of the course work is
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 criteria for equivalence and 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?	<p>You shall be able to take up jobs in the Satellite Dish Installation industry with the following designations</p> <ul style="list-style-type: none"> • Domestic Satellite Dish Installer • Industrial Satellite Dish Installer • Satellite dish Technician • Satellite dish supervisor • Satellite installation technician • Satellite dish Trainer • Cable distributor,

	<ul style="list-style-type: none"> • Internet Service Provider • TV Network distributor, • TV Technician • work in Telecommunication.
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.
17. Are there any alternative certificates which I can take up?	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.
18. What is the teaching language of this course?	The teaching language of this course is Urdu and English.
19. Is it possible to switch to other certificate programs during the course?	Partially no, but if you have covered the Generic and functional competencies of this course and you want to switch to other certificate or want to enroll in other course, then you will take exemptions from the generic and functional competencies of the same level.
20. What is the examination / assessment system in this program?	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.
21. Does this certificate enable me to work as freelancer?	Yes! You can start your small business of Installation of satellite dish or other telecom equipment. You may need additional skills on entrepreneurship to support your initiative.

Test Yourself (Multiple Choice Questions)

MODULE 1

- Question 1** Barometer is a scientific instrument used to measure _____ , which most of the time used in weather forecast and analysis.
- A Atmospheric pressure
 - B Azimuth
 - C Direction
 - D Altitude
- Question 2** _____ is an instrument used for navigational and to find directions also use to perfectly position antenna direction.
- A Barometer
 - B Coaxial cable cutter
 - C Compass
 - D Volt Meter

Question 3 Cable handling tool which allows its user to install highest quality connectors on cables and uses mainly on installation of TV connectors.

- A Cable ties
- B Cable compression tool
- C Cable cutter tool
- D Cable joining tool

Question 4 Cable testing tool used to measure several physical parameters of a cable which helps in_____.

- A Measure length of cable
- B Check cable faults
- C Check bandwidth of cable
- D Signal Attenuation

Question 5 Which tool is useful for tightening screws?

A Socket wrench set

B Power screwdriver

C Barometer

D Hammer

