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MOBILE PHONE TECHNICIAN

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LEARNER GUIDE
National Vocational Certificate Level 4

Version 1 - November, 2019

NAVTTC

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MOBILE PHONE TECHNICIAN

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Contents

Introduction

Welcome to your Learner's Guide for the **Mobile Phone Technician** Program. It will lead you towards successful completion of the program and to keep on further study or go straight into employment.

The **Mobile Phone Technician** program is to engage young people with a program of development that will provide them with the knowledge, skills and ability to start their career in Pakistan or seek their job across the borders. The program 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/Tasks 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:**

    The summary of modules contains all the modules ,clustered together in the qualification level (level 1—4), along with their learning units ,aims and time frame

  Frequently asked questions:
  - These have been added to provide further explanation and clarity on some of the difficult concepts and areas and general information regarding the nature, duration, way of assessment, vertical and horizontal progression and future prospects of the training. 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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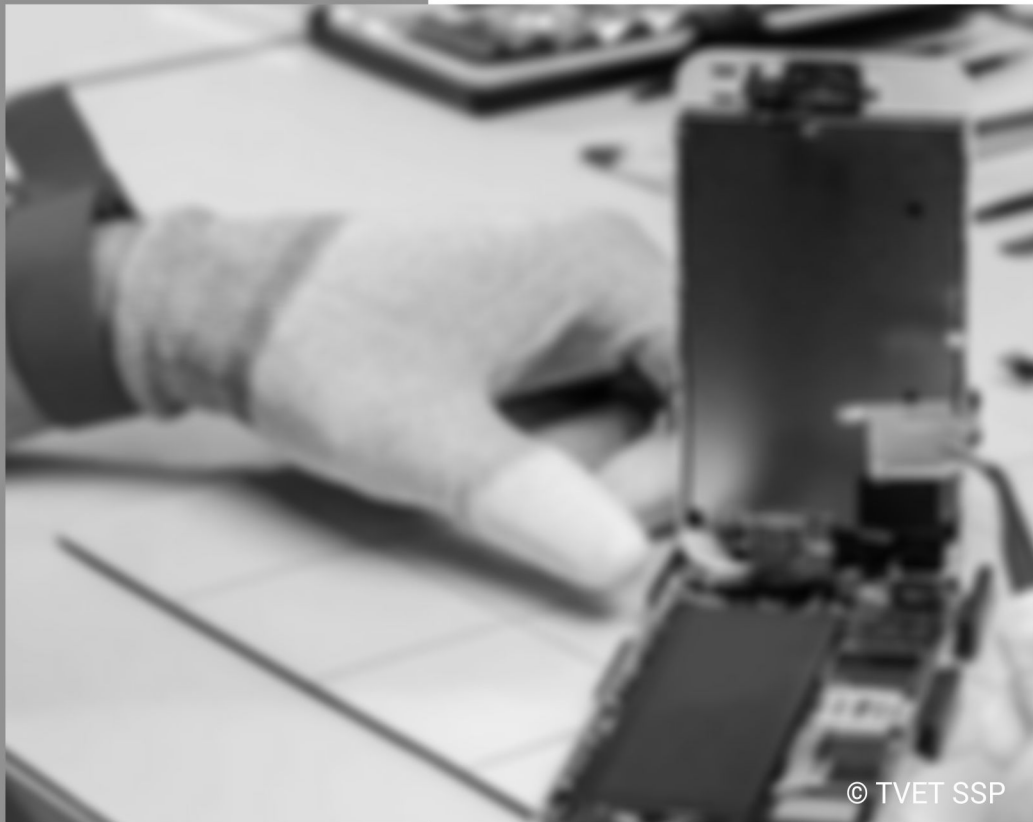
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Module-L
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Module L: Develop basic computer operating skills

Objective: This module covers the skills and knowledge required to Operate MS word, Operate MS Excel, Operate MS Power Point, Perform Browsing and Print Document.

Duration: 100 Hours   **Theory: 20 Hours**   **Practice: 80 Hours**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required

LU1. Operate MS word	**The trainee will be able to:**
	• Perform Microsoft basic commands in MS word
	• Open File
	• Format a file
	  i. Font (Type/size/bold/Italic)
	  ii. Header Footer
	  iii. Page number
	  iv. Insert pics / table/hyperlink
	• Save a File
	• Save a folder
		• Define Basic parts of computers
		
		The basic parts of a computer system are:
		
		• Input devices (Keyboard, Mouse)
		• Out put Devices (Monitor, Speakers, Printer)
		• CPU (Central Processing Unit)
		• Memory
		
		Compact disc: It stores information many times more than a floppy disk.
		
		CPU: The processing device in a computer.
		
		Data: It is the information given to the computer.
		
		Electronic machine: It is the machine that runs with the help of electricity.
		
		Floppy disk: It stores a small amount of information.
		
		Hard disk: It stores a large amount of
			• Windows CD
			• MS office CD

		information.	
		Headphones: The device for listening to the recorded sounds without disturbing others.	
		Input devices: These help us put date into the computer.	
		Joystick: It is used for playing computer games.	
		Keyboard: This is used to enter data into the computer system.	
		Microphone: It is used for recording sound.	
		Monitor: It shows whatever you type on the keyboard or draw with the mouse.	
		Mouse: It is pointing device.	
		Output devices: These help us to show the results of processing.	
		Processing device: Helps to store, sort, arrange and change the inputs on a computer.	
		Scanner: It copies pictures and pages and turns into images that can be saved on a computer.	
		Speakers: These are used for listening to recorded sound.	
		Storage devices: These are form the memory of the computer.	
		Wed camera: It is used for taking live photos	

and videos.

Importance of Microsoft Word

- *Microsoft Word* is an effective tool for creating all kinds of documents like letters, memos, reports, term papers, and typesetting novels and magazines, etc.
- *Microsoft Word* offers you specialized tools for formatting your document in various ways; perform spelling and grammar check to produce standard and error-free documents; in-built thesaurus for finding appropriate synonyms to replace repetitive words/phrases; word count feature for a statistical report of your document; drawing and graphics editing tools to add a touch of graphics or images to go with your documents; sounds and video handling tools to add multimedia feature to a document; numerous wizards and tools for creating and distributing merged faxes, form letters, labels and envelopes, etc.
- *Microsoft Word* is highly useful for creating text of large volume.
- You can easily create and maintain mailing lists, create personalized documents and create newsletters in *Word*.
- It also helps you send documents to a group of people for feedback.
  - *Word* provides customized assistance in many ways.

		• With *Word*, you can import files or objects from other programs and use them in your documents. • **Word** also offers facilities for exporting documents to other packages, e.g. Lotus Notes, WordPerfect, etc.	
LU2. Operate MS Excel	**The trainee will be able to:** • Perform basic commands in Microsoft MS Excel • Open a worksheet. • Sum functions • If functions • Basic calculations • Table and graphs • Save a worksheet/folder	• Originally released in 1985, Microsoft Excel has become the most-used spreadsheet program in the world. Excel can perform formula-based calculations and many other mathematical functions. The program also serves as a programming platform for Visual Basic for Applications. Because of its utility, Excel has become a staple in many enterprises. **Accounting and Finance** Excel is often used in accounting and finance because of its ability to automate calculations and its support for complex formulas. Excel spreadsheets can calculate the accrual of compound interest and net income after adjusting the gross for expenses, for example. Once formulas have	• MS office CD •

been entered in a table, you simply plug in numbers where necessary and Excel does the rest, populating cells with the results of the calculations. This makes Excel an indispensable tool for business accounting.

Data Organization

Even non-financial businesses employ Excel spreadsheets. The ability to organize data in Excel tables and set up tools for updating, organizing, and displaying the data makes the program popular for administrative purposes. Comprehensive, easy-to-reference Excel tables allow administrators to check a single statistic in a process, such as service fault issues in a product, against a report of trends for the same service faults. Through these comparisons, issues can be identified and solutions developed.

Programming

Excel supports Microsoft's Visual Basic for Applications programming language for creating macros that increase efficiency and ease of use by automating or simplifying complex functions. People who are proficient at creating Excel macros are much in demand at organizations of all types.

Graphing

Excel also produces a variety of charts and graphs for representing income statements and other statistical data visually. You save

		time by making the charts in the spreadsheet where the data resides. Visual presentation of the data drives home your points more effectively than columns of numbers. Being able to graph within Excel also frees up some capital that otherwise would have to be invested in another graphing program. **Proficiency** Basic proficiency in Excel is becoming mandatory in some organizations. The person who has a greater level of competence with Excel often has an advantage when competing for an open position.	
LU3. Operate MS Power Point	**The trainee will be able to:** • Prepare Microsoft power point presentation with basic commands • Make a power point file • Insert pics/table/hyperlink • Design a theme for slides • Save a power point file	Microsoft PowerPoint is an easy program to use and a powerful tool for giving a presentation. Whether your presentation needs a visual kick, tools for collaboration, easy access or the ability to share information beyond the initial meeting, PowerPoint is a good option. It can even help reduce speaking anxiety by drawing eyes away from the speaker and towards a screen. Just do not expect this technology to substitute for sound and dynamic speaking skills. **Visual Impact** Making your presentation more interesting through the use of multimedia can help to improve the audience's focus. PowerPoint allows you to use images, audio and video to have a greater visual impact. These visual and audio cues may also help a presenter be more improvisational and interactive with the	• MS office CD

audience. However, try not to overly rely on these sources as your message might get lost in the clutter.

Collaboration

PowerPoint allows you to work with other people in a collaborative manner. This is especially useful in office settings where teamwork is key. Multiple people can collaborate on and contribute to a presentation. By going to the "Review" tab at the top of the program and clicking the "New Comment" button, you can leave notes and reposition them on the screen for other team members to view. Comments can be an especially beneficial tool for clarification.

Content Sharing

Share your PowerPoint presentation with the world. Did someone miss your presentation? Have them view it online at a time that is convenient for them. You can upload your presentation to websites such as YouTube with everything featured in your work including all of the slides, commentary and transitions. All you have to do is go to "File," "Save and Send" and "Create a Video." The file will be saved in WMV format, which is capable of playback on Windows Media Player and can be uploaded to most video sites.

		Flexibility PowerPoint can be used in a number of different effective ways to communicate with your audience. Slides are completely customizable to fit your needs. Depending on your approach, you may want to have a presentation that is text-heavy, image-heavy or some combination of both. Text-heavy presentations are generally good if you are giving a lecture to a group within your company and want them to take notes. Image-heavy presentations can help to make your presentation more conversational in style since there only visual cues. Combining the two approaches gives listeners the benefits of both visual aids and notes. •	
LU4. Perform Browsing	**The trainee will be able to:** • Perform browsing on the internet as per needs • Perform search online on new trends in the market with the help of internet	The role of Internet in modern society cannot be understated. Most of us hardly remember the times when there was no Internet. Some did not even experience life before Internet. But what exactly is Internet? What do we use it for? Why has it become so important the Internet is a network that connects hundreds of millions of electronic devices, like computers, smartphones, tablets, laptops etc. through TCP/IP, or Internet protocol. It provides access to millions of terabytes of information on any topic imaginable. There is a common misconception that the Internet is synonymous with the World Wide Web (Web or WWW for short). Actually, the Internet gives you access to the WWW. The	•

latter can be considered the Internet's graphical user interface

use of internet

❶ Communication. Of course, the first thing that comes to mind when you thing about Internet is communication. If you thought of something else, then please do not voice it, we are trying to keep it PG here. As the Internet connects millions, or even billions of devices, it allows people to communicate with each other across the globe. You no longer have to send letters and wait for weeks, sometimes months for a response. Nowadays, in a matter of milliseconds, you can connect with whomever you want

❷ Education. Back in the 'old days', you had to physically go to school or a university and listen to boring lectures. These days, you often still have to do that. However, now you have an alternative! There are many uses of Internet in education. Many educational institutions practice online lessons, either for the full class, or for the person who cannot attend the lesson. In addition, there are plenty of online courses, if you do not want to commit to a university or college.

❸ Research. Every student knows the struggle of writing an essay or any other kind of scientific paper. You have to master a topic in a matter of days (if you are lucky) or several hours (if you are procrastinating). Reading through tons of books is tedious and time-consuming. That is when the Internet comes to the rescue. With its help,

you can find everything you need on the topic of your choice. However, you need to know where and how to look. The word research in this instance is not limited to the actual serious scientific research. When you google how old your favourite music artist is, it also counts as research. Basically, if you are looking for information via the Internet, you are researching stuff, no matter how serious or important.

❺ Work. Some people go to work every day, sit in a stuffy office until the day is over and then go back home to rest and repeat the whole thing in the morning. On their jobs, they are most likely using the Internet, be it for actual work, or for browsing cat memes on the company time. At the same time, some people lie on their couches in their with the laptops on their stomachs and also work thanks to the magic of Internet. Some jobs do not require physical presence in the work place, so why waste time and money on transportation, when you have the Internet at your mercy? Internet made browsing cat memes at work even more comfortable!

❼ Shopping. Online shopping is great. You can get anything (and we mean anything) on the Internet, and it will be sent to your doorstep. If you are lazy, antisocial or have limited use of your legs, you can order everything your heart desires online. Even if it is illegal. You can even open up your own shop and sell things to people from across the world. From arts and crafts projects to old childhood toys, if you need some cash, use the Internet to sell your stuff and get

		paid!	
LU5. Print Document	**The trainee will be able to:** • Select Printer • Select page setup • Print relevant pages	**Make sure that your printer is connected and turned on.** If your printer connects over Wi-Fi, this will mean making sure that you're on the same Internet network as your printer; otherwise, you'll need to plug your printer's USB cable into your computer. • Check your printer's manual to confirm how to set it up if you haven't already done so. pen Start ■■ Click the Windows logo in the bottom-left corner of the screen. **Open File Explorer** • **.** Click the folder-shaped icon in the • bottom-left side of the Start window **Go to the document that you want to print.** Click the folder that contains the document on the left side of the File Explorer window. Common documents that you can print include the following: • Word, Excel, or PowerPoint documents • PDF files	• Printing • papers (A4 and Legal size)

- Photos
- **Select the document.** Click the document that you want to print.

- **Click the** Share **tab.** It's in the upper-left corner of the window. Doing so prompts a toolbar to appear below the **Share** section.

Click Print**.** You'll find this in the "Send" section of the toolbar. The Print window will open.

- If **Print** is greyed out, your selected document can't be printed. You'll see this for things like Notepad Next documents.
- **Select your printer.** Click the "Printer" drop-down box, then click your printer's name.

Select a number of copies. In the "Copies" box, type in the number of copies of the document that you'd like to print.

- This is different than the number of pages.

Edit other print settings if need be. The menu for each document type will vary, but you'll have the following options for most documents:

- **Orientation** - Determine whether your document is oriented vertically or

		horizontally.	
		• **Color** - Decide between printing in black and white or including color printing. You must have colored ink in your printer to print in color. • **Number of sides** - Choose single-sided printing to print one sheet of paper per page, or choose double-sided printing to use both sides of a piece of paper. • **Click** Print. It's either at the bottom of the window or at the top of the window. Your document will begin printing..	

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Module-M
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Module M: Repair Soft ware

Objective: This module covers the skills and knowledge required to Restore Factory Setting, Update Software, recover own IMEI As per Rules, Convert File system, Install application software and Deliver Mobile phone set

Duration: 100 Hours　　　　　　　　**Theory: 20Hours**　　　　　　　　**Practice: 80 Hours**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1. Restore Factory Setting	**The trainee will be able to:** • Restore Factory settings through internal options (soft reset) • Reset factory settings through keys (Hard reset) • Reset factory setting through interface (Dongle reset)	• Enlist operating systems The first version of Android didn't adhere to a dessert name convention. This didn't start until 1.1 which was the Petit Four. Since then it has gone in alphabetical order. • Android 1.0 (2008) - **No Version Name** • Android 1.1 2009) - **Petit Four** • Android 1.5 (2009) - **Cupcake** • Android 1.6 (2009) - **Donut** • Android 2.0 - 2.1 (2009) - **Eclair** • Android 2.2 - 2.2.3 (2010) - **Froyo** • Android 2.3 - 2.3.7 (2010) - **Gingerbread**	• Nil

		• Android 3.0 - 3.2.6 (2011) - **Honeycomb** • Android 4.0 - 4.0.4 (2011) - **Ice Cream Sandwich** • Android 4.1 - 4.3.1 (2012) - **Jelly Bean** • Android 4.4 - 4.4.4 (2013) - **KitKat** • Android 5.0 - 5.1.1 (2014) - **Lollipop** • Android 6.0 - 6.0.1 (2015) - **Marshmallow** • Android 7.0 - 7.1.2 (2016) - **Nougat** • Android 8.0 - 8.1 (2017) - **Oreo** • Android 9.0 (2018) - **Pie** • Enlist Methods of data recovery and transfer	
LU2. Update Software/Flash	**The trainee will be able to:** • Update software via internal options / Over The Air (OTA) if available • Update software via dongle	• Describe Flashing procedure • for Samsung mobiles Download stockroom for your mobile • Know about CPU and flashing tool of your mobile • For example odin is use • Install necessary USB drivers of mobile • Copy and past all framwere	Nil

		files to desktop of your computer
		• Switch off mobile
		• Now press volume key down +home key+ power key at same time
		• Now the phone is an download mode
		• Enlist Latest software updates and installation methods
		• Connect your mobile to computer with the help of data cable
		• Launch odinsoftwere
		• Click PDA option to browse for frimwere/flash file
		• Click ok and start the flashing

LU3. Recover / Repair own IMEI. As per Rules	**The trainee will be able to:** • Update mobile software with the latest version • Repair own IMEI via dongle	You will need to flash IMEI Number in your Android Mobile Phone after flashing Stock ROM (Firmware). **You have to flash the Stock ROM (Firmware) in your Android Mobile Phone for any of the following reasons:**	Nil

| | | Your mobile phone gets hanged too often. Your phone gets hanged at company logo and doesn't boot. You want to update the latest software / operating system in your phone. You have forgotten the lock pattern or password and want to unlock the phone. Your Android Mobile phone or tablet is dead because of software issues.
After you Flash the Stock ROM, you will also have to Flash the IMEI Number and Restore it back. Otherwise you may get following error messages: **Invalid IMEI Number**

So, in order to fix this Invalid IMEI Problem and Restore the IMEI Number on Android Smartphone you have to Flash IMEI Number in you Android Mobile Phone.
You will need following Software and hardware to flash or Rewrite IMEI Number on Android Mobile Phone and Tablet: | |

		Hardware Needed	
		1. The Android Phone to Flash the IMEI Number. 2. A USB Data Cable to Connect Your Phone to the Computer or Laptop. **Software Needed** 1. **Stock ROM / Firmware**: of the Model of the Phone in which Flashing of IMEI Number is to be done. (*Why is this needed will be clear later in this Tutorial*) 2. **SN Write Tool**: SN Write Tool allows you to read and write IMEI on any Mediatek Feature Phone, Android Smartphone and Tablets. 3. **AP BP Base for SN Write Tool**: in .zip file (*You need this if you do not have the .zip file of the Stock ROM*) 4. **Read&Write Tool**: Read&Write Tool allows you to read and write IMEI on any Qualcomm, MTK or SpreadTrum Smartphone and Tablet 5. **AP BP Base for Read&Write Tool**: in .zip file (*You need this if you do not have the .zip file of the Stock ROM*) 6. **IMEI Number of your Phone**: You will also find the IMEI Number of your Phone	

		at the Back after you remove the Back Cover and also on the Packet of the Phone.	
		Step-1	
		Download SN Write Tool on your computer	
		Extract the .zip File. You will see following files in the Extracted Folder.	
		Step-2	
		In the Extracted Folder, you will find – **SN Writer.exe** File. Open this .exe file (*Double Click or Right Click and Run as Administrator*)	
		Step-3	
		Now you will see following screen. Click on **ComPort** and Select **USB VCOM**. In the "*Target Type*" you will get Options to Select Feature Phone, Smartphone and Other Android Devices. Select **Smartphone** if you are flashing the IMEI Number to an Android Phone.	

		Step-4	
		Now select System Config Button.	
		Step-5	
		Once you click onto the Config Button, you will see the following Screen. Select Following Options – **IMEI, BT Address** and **WiFi Address**. You also get the Option to select Dual IMEI, 3 IMEI and 4 IMEI. Select the Required Option.	
		Under Database File Option select the Path of **MD1_DB** and **AP_DB**. Remember that BOTH these Files come with the *.zip* File of the Custom ROM Firmware.	
		Step-6	
		Now click **Start** Button on the Next Screen.	
		Step-7	
		Under Scan Data, Enter the **15 Digit IMEI Number**. You will also find the IMEI Number of your Phone at the Back after you remove the Back Cover and also on the Packet of the Phone.	
		Once you have entered all the	

		required Data, **SWITCH OFF** your Phone and Take out the Battery. If there is Non-Removable Battery then just switch OFF the Phone and Connect the Phone to your Computer with USB Data Cable. Now Click **OK**. The Process will take just few minutes. Once the IMEI Number writing is Done, you will see **Green Pass** Message. • Contact local Govt offices for Govt. Rules & Regulations regarding IMEI	
LU4. Convert File system	**The trainee will be able to:** • Install fresh stock ROM • Install Custom ROM	• For installation of fresh Stock rom first we have to Know about CPU manufacturing company of mobile then we have to download require flashing tool then we have to download require stockroom / firmwere file from internet and then we have to install it installation procedure were describe in previous modules	Nil

LU5. Install application software	**The trainee will be able to:** • Install application software from internal software options • Install application software by personal computer	**Types of apps** **Native apps** Such apps are developed for a single mobile operating system exclusively, therefore they are "native" for a particular platform or device. App built for systems like iOS, Android, Windows phone, Symbian, Blackberry can not be used on a platform other than their own. In other words, you won't be able to use Android app on iPhone. Main advantage of native apps is high performance and ensuring good user experience as developers use native device UI. Moreover, an access to wide range of APIs that puts no limitation on app usage. Native applications are distinctly accessible from app stores of their kind and have the clear tendency to reach target customers. Some cons to native apps are higher cost compared to other types of apps – due to the need of creating app duplicates for other platforms, separate support and maintenance for different types of apps resulting	Nil

in bigger product price.

Hybrid apps

They are built using multi-platform web technologies (for example HTML5, CSS and Javascript). So-called hybrid apps are mainly website applications disguised in a native wrapper. Apps possess usual pros and cons of both native and web mobile applications.

Hybrid multi-platform apps are fast and relatively easy to develop – a clear advantage. Single code base for all platforms ensures low-cost maintenance and smooth updates. Widely used APIs, like gyroscope, accelerometer, geolocation are available.

On the other hand, hybrid applications lack in performance, speed and overall optimization in comparison to native apps for instance. Also, there are certain design issues due to app inability to look in exactly same way on two or more platforms.

		Web apps	
		These are software applications that behave in a fashion similar to native applications. Web apps use a browser to run and are usually written in HTML5, JavaScript or CSS. These apps redirect a user to URL and offer "install" option by simply creating a bookmark to their page.	
		Web applications require minimum of device memory, as a rule. As all personal databases are saved on a server, users can get access from any device whenever there is internet connection. That is why the use of web apps with poor connection would result in bad user experience. The drawback is access to not that many APIs for developers, with exception of geolocation and few others.	
LU6. Deliver Mobile phone set	**The trainee will be able to:** • Perform Outgoing Quality Control (OQC) • Prepare delivery report	• First of all check invoice of customer. Check serial no of invoice and compare it with the serial number of tag and	Nil

	• Obtain confirmation from customer • Negotiate Price with customer • Prepare Invoice / Bill of quantity • Take feedback from customer	then check the mobile for problem it haven before repair verify that the problem is solve and handover to customer	

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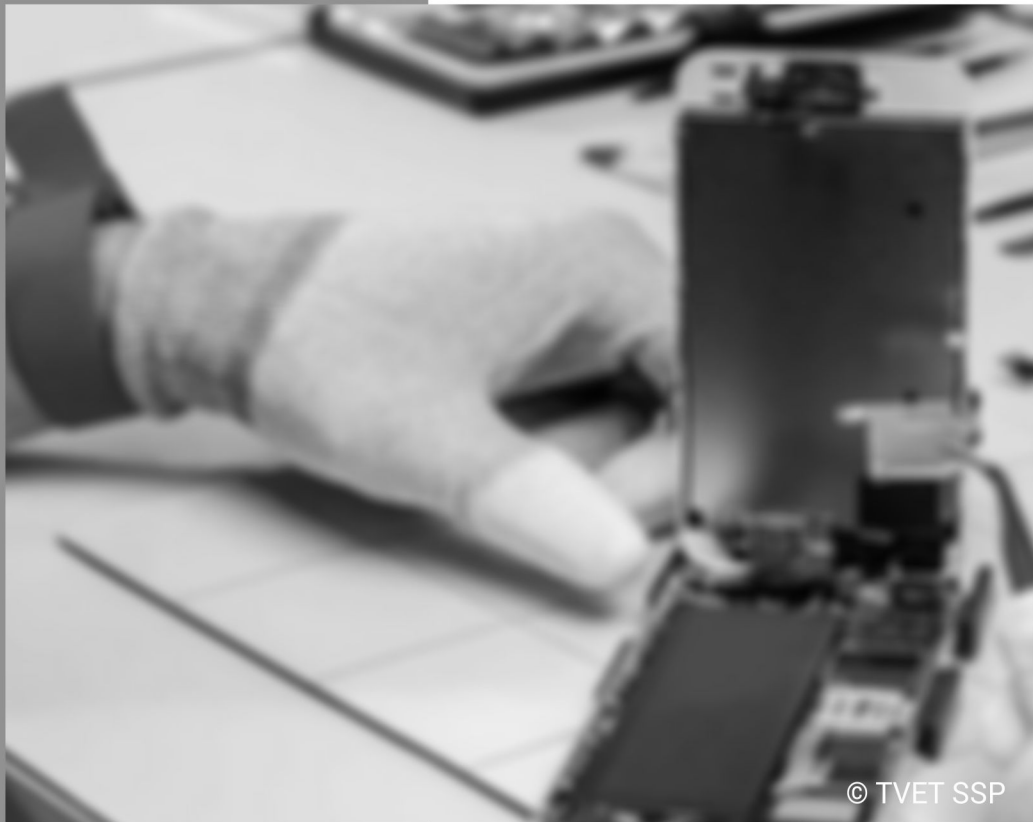
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Module-N
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Module N: Manage Mobile Phone Storage

Objective: This module covers the skills and knowledge required to Arrange Secure Storage, Maintain conducive Environment at Store, Adopt Identification System, Manage Inventory of Phone and Keep History Record of faulty Phone

Duration: 50 Hours　　　　　　**Theory: 10 Hours**　　　　　　**Practice: 40 Hours**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1. Arrange Secure Storage	**The trainee will be able to:** • Establish locker for safe storage • Reserve each section for different stocks • Label each section of locker with tags	• For secure storage it is necessary to make a safe storage case for mobiles • labels/tags are very important in mobile business. With the help of labels and tags it is very essay to identify mobiles in mobile shop	• locks
LU2. Maintain conducive Environment at Store	**The trainee will be able to:** • Ensure constant temperature in the storage area • Ensure comfortable humidity in the storage area • Ensure dust free environment in the storage	• It is very important to maintain constant temperature and humidity in mobile shop we have also insure to make dust free environments in shop	• Silica gel • Air tight plastic bags • Plastic box Tags
LU3. Follow Identification System	**The trainee will be able to:** • Record invoice data • Develop tags for received sets /	• For keeping accurate records invoice system is very important in mobile field • more ever tags and labels are also important to past on all mobiles	• Tags

	items • Apply tags on items as per requirement		
LU4. Manage Inventory of Phone and accessories	**The trainee will be able to:** • Prepare list of items • Arrange items as per inventory list • Store tagged items	• Brinking all the necessary items in inventory form is very important this make life in mobile repairing field essay and repairing process is improve	• Record register • Lose paper
LU5. Maintain Record of repaired Phone	**The trainee will be able to:** **The trainee will be able to:** • Keep record of repaired mobile phones • Check record for the received mobile phones • Update record of the repair mobile phones	• Computerize record of all mobiles including faulty mobile make mobile business very effective and profitable	• Record register • Lose paper

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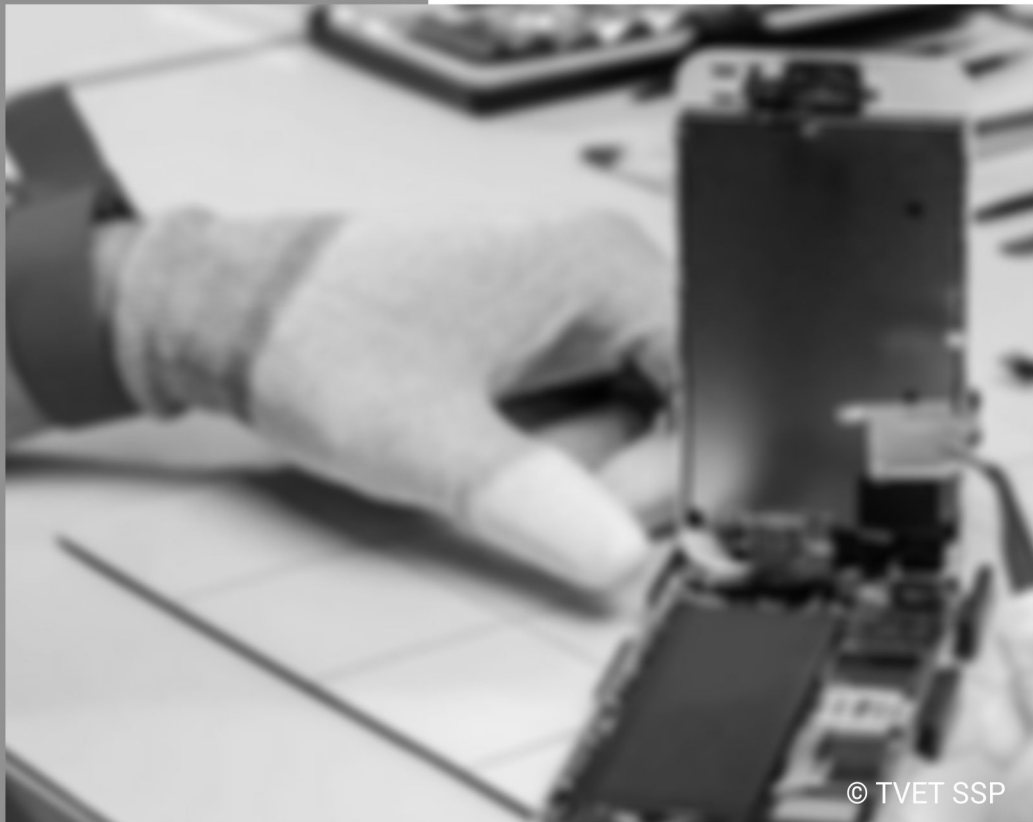
Module-O
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Module O: Develop Professionalism

Objective: This module covers the skills and knowledge required to Demonstrate work ethics, Aware of factors affecting personal health, Resolve problems or disagreements with others, Participate in professional development, Work with others, Work independently, Speak and listen effectively and   Interpret documentation.

Duration   **Theory:30 Hours**   **Practice: 120 Hours**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1. Demonstrate work ethics	**The trainee will be able to:** • Follow principles of work ethics in all situations • Adopt professional behaviour	• In its simplest definition, a system of **moral principles** is called **ethics**. ... Among staff **ethical** behavior ensures **work** is completed with integrity and honesty and staff that are **ethical** adhere to policies and rules while **working** to meet the aims of the enterprise • Describe professional knowledge, skills and attitude and how to practice	Nil
LU2. Aware of factors affecting personal health	**The trainee will be able to:** • Follow factors affecting personal health • Be aware about the situations/conditions that cause stress in professional and personal life	• Describe Own current mental, emotional, and physical state • Explain factors/situations/conditions that cause stress in professional and personal life	Nil

		Communication is a process, whereby two or more people exchange ideas/facts/feelings in a way that there can be a common understanding to each other.	Nil

LU3. Resolve problems or disagreements with others	**The trainee will be able to:**
	
	• Communicate effectively
	• Adopt peaceful approach
	• Determine cause of problem or disagreement
	• Discuss and resolve issues
		Characteristics of Communication
		
		Communication is a process in which inter-related elements work together to achieve a desired goal/outcome. As we view communication is a process, so we also perceive it to be; dynamic, ever-changing and unending.
		
		Additionally, thousands of information, ideas, opinions, that you process, evaluate and store each day also change you to some extent. So every next moment you are a changed person. Another key concept of communication – communication events don't occur in isolation from one another. Each interaction/communication that you have affects, each one that follows is not always in simple and direct manner. 70% of communication is non-verbal and 30% is verbal.
		
		DimensionsofCommunication
		
		Communication is more than one person speaking and another listening. This section willexplainsomeofthecomplexitiesofcommunicationbylookingatthedimensionof:
		
		    o Verbalandnon-verbal communication.
		    o Oral and writtencommunication.
		    o Formalandinformalcommunication.
		    o Intentional&unintentionalinformation.
		
		• **Conflict resolution** is the process by which two or more parties engaged in a disagreement, **dispute**, or debate reach an agreement resolving it. Several skills are needed for you to **resolve conflicts** in the workplace effectively.
		
		1. Seek to understand. People tend to disagree when they don't understand each other. When one party is so busy wanting to be heard and doesn't spend any time trying to understand, disagreement is right around the corner. When you come to an understanding that most of us are more alike then we are different, you can begin to tolerate and accommodate--even appreciate--a	

different point of view. So first, seek to understand and appreciate. That does not mean you have to agree, just that you're open to hearing them out.

2. Look beyond your own triggers. Many disagreements stem from someone being triggered by something that's been said. What's triggered is usually fear and awareness of one's limitations. Whatever may have happened in your past, you have to find a way to get past your triggers and see that you're in a new situation with a person who doesn't mean you harm.

3. Look for similarities, not differences. From working with my clients, I've found that the best way to begin resolving a disagreement is to look for common ground. When you concentrate on differences the space grows wider, but when you seek out what you have in common it helps bridge the gap. The next time you find yourself in a disagreement, look for a point of agreement--even if you have to stretch.

4. Be a good listener. In any disagreement, it's important for both parties to be heard. And that means it's important to be a good listener-- curious, open minded and nonjudgmental. A good listener gives their full attention, asks for clarification when necessary, and can listen to different opinions without becoming defensive or argumentative. The best way to listen is to be silent. That's when you can learn.

5. Take responsibility for your own feelings. Especially in heated disagreements, it's easy to start making accusations, laying blame and making excuses. To work through it, you have to be honest with yourself and take full responsibility for your own feelings, and for your interpretations that may have contributed to the breakdown.

6. Make a commitment. In times of intense disagreement, it's not uncommon for one or both parties to have one foot out the door. If you want to truly get to the heart of the matter, make sure the other person understands your commitment to the relationship. Even if you have an issue with the behavior, you have to keep that separate.

		7. Use positive language. No one wants to be called names or to be called out in a negative way, or to hear all the bad things they have done in the past. If you are speak in negatives, you will hurt the person and shut them down. if you can bring positivity to what you are trying to say, it's far more likely that you'll be heard, and that the disagreement can be resolved more quickly and easily. Disagreements are a way of life, but they don't have to cause havoc. Try these techniques and work it out--faster, better and quicker.	
LU4. Participate in professional development	**The trainee will be able to:** • Assess own knowledge and skills • Acquire information about training opportunities • Learn through various methods, such as on job training, reading, courses and co-workers	• Explain own role and responsibilities • Explain work assignment, location, and working conditions • Describe methods of learning such as on job training, reading, courses and co-workers	Nil
LU5. Work in team	**The trainee will be able to:**	• The ability to simultaneously perform as an individual and together with your colleagues or employees in effective **teamwork** is key to attaining growth and success. ... In effect, **teamwork** is **important** and essential in	Nil

	• Work as a team member to achieve common goals • Keep open mind • Participate in work place meetings • Communicate accurately and clearly • Co-ordinate job related activities • Cooperate with others	order to **accomplish** the overall **objectives** and **goals** of an organization. • Define Roles of individuals on job site, such as supervisor, inspector, other trades people • Effective communication, collaboration, and coordination are the main contributing factorsfor success in agile methods. Communication is defined as imparting or interchangingthoughts, opinions, or information by speech, writing, or signs. Collaboration is definedas working together to accomplish a task and discussing with each other to solve difficultproblems. Effective collaboration includes both individually focused tasks and interactivegroup work. Coordination is defined as the harmonious adjustment or interaction of differentpeople or things to achieve a goal or effect.	
LU6. Work independently	**The trainee will be able to:** • Confirm and clarify assignment • Take initiative, anticipate and prepare for next steps in job • Identify and resolve potential and actual problems • Communicate with other site personnel • Complete	• Describe the assignment very clearly and responsibilities of each individual • Describe the importance of initiative, anticipate and prepare for next steps in job • Describe work place problems and how to resolve them • Describe clarity in communication	Nil

		assignment		
LU7. Interpret documentation	**The trainee will be able to:** • Access and maintain documents • Provide complete, legible and accurate information in documents • Interpret equipment inspection documentation from previous shifts before conducting pre-operational inspection		• Describe types of documentation required, such as log books, safety reports, maintenance reports, inspection reports, time cards • Describe Importance of complete, legible, and accurate documentation	Nil
LU8. Interpret rules and regulation of regulatory authorities	**The trainee will be able to:**		• Describe Health and Safety Rules • Define environmental safety	

	• Follow Health and Safety Rules • Ensure environmental safety • Ensure compliance of IMEI Rules. • Ensure workplace safety by following safety standards • Ensure safety while operating electricity.	• Describe PTA rules aboutIMEI. • Define workplace safety standards • Define safety while operating electricity.	
LU9. Develop Entrepreneurial skills	**The trainee will be able to:** • Start a Business. • Manage a business • Perform Marketing. • Adopt Financial Concepts • Apply Financial Concepts.	**ENTREPRENEURSHIP** To some economists, the entrepreneur is one who is willing to bear the risk of a new venture if there is a significant chance for profit. Others emphasize the entrepreneur's role as an innovator who markets his innovation. Still other economists say that entrepreneurs develop new goods or processes that the market demands and are not currently being supplied. Entrepreneurship is the art of starting a business, basically a startup company offering creative product, process or service. We can say that it is an activity full of creativity. An entrepreneur perceives everything as a chance and displays bias in taking decision to exploit the chance. An entrepreneur is a creator or a designer who designs new ideasand business processes according to the market requirements and his/her own passion. To be a successful entrepreneur, it is very important to have managerial skill and strong team building abilities. Leadership attributes	

are a sign of successful entrepreneurs. Some political economists regard leadership, management ability, and team building skills to be the essential qualities of an entrepreneur.

An entrepreneur is an innovator or a creator who introduces something new to the firm or economy. It can be a new method of production, a new product, a new source of material, a new market or any other similar innovation. Thus, an entrepreneur is an innovator, creator, borrower, purchaser, etc. Think of some famous entrepreneurs in your surroundings who started business from scratch and using their entrepreneurial skills established it on sound footings.

Running one's own business has a drift to take up entire life, so it is very important to assess whether or not the reasons are logical and practically implementable.

We have heard a million reasons not to go into business for its too risky, it might lead to debts, there will be no social life, and the list goes on. But even with all these uncertainties, people are still allured to the start-up world. There are just as many, if not more reasons to take a stand and start our own business.

Some of the reasons to start a business are:

- An entrepreneur owns his/her business, hence is his/her own boss. It gives the liberty to make decisions and implement them. It's a proven fact that most entrepreneurs never wish to go back to working for someone else.
- The thought of leaving behind a legacy, is a great motivator for many.

- It's a good option of taking over a family business and adding a new dimension to the same.
- The sense of achievement or being successful in doing something one's own way.
- To prove oneself as being self-competent, being in complete control, and making an impact on the society

Being an entrepreneur is not an easy task. It is a very big decision and one has to make efforts, has to be patient, and should work hard. Before starting an enterprise, some factors should be considered and reviewed in order to increase the probability of profitability.

The meaning of small business, however, changes in different countries according to their respective laws. The criterion depends on the number of employees, turnover, asset of the company etc.

Before starting an enterprise, some factors which should be taken care of are:

- Identification of business opportunity.
- Preparation of project.
- Selecting a business opportunity.
- Accessing the viability (technical, operational, financial marketing) of the project.
- Deciding the location for production, offices etc.
- Deciding the size of the project.
- Deciding the source of finance.
- Deciding about marketing.
- Deciding the launching of the project.
- Deciding the plan, programme& policy, strategy of the project.

Taking care of the following steps will ensure a successful start.

✓ Writing a business plan – Write all tools and resources required to create a business plan. This written guide will help in mapping out how to start and run a business successfully.
✓ Getting business assistance – There are numerous programs available to assist startups, micro businesses, and underserved or disadvantaged groups.
✓ Selecting a business location – Take suggestions on how to select a customer-friendly location and purchase/rent a suitable place.
✓ Financing own business – Search for government-backed loans, capital and research grants to help getting started.
✓ Determining the legal structure of business – Decide which form of ownership is best - like sole proprietorship, partnership, limited liability company (LLC), corporation, nonprofit or cooperative organization.
✓ Registering a business name like "Doing Business As". Register the business name with the relevant department.
✓ Getting a National Tax Number (NTN) – Learn how a NTN can be obtained.
✓ Understanding employee responsibilities – Learn the legal formalities that needs to be taken care of to hire employee(s).

TYPES OF BUSINESSES

Sole Proprietorship: In a sole proprietorship, the individual entrepreneur owns the business and is fully responsible for all its debts and legal liabilities. Majority of businesses are sole proprietorships. Examples include writers and consultants, local restaurants and shops, and home-based businesses.This is the easiest and least expensive form of business to start. In general, an entrepreneur files all required documents and opens a shop. The disadvantage is that there is unlimited personal liability — all personal and business assets owned by the entrepreneur may be at risk if the business goes into debt.

Partnership: A partnership consists of two or more people who share the assets, liabilities, and profits of a business. The greatest advantage comes from shared responsibilities. Partnerships also benefit by having more investors and a greater range of knowledge and skills.

There are two main kinds of partnerships; general partnerships and limited partnerships. In a general partnership, all partners are liable for the acts of all other partners. All also have unlimited personal liability for business debts. In contrast, a limited partnership has at least one general partner who is fully liable plus one or more limited partners who are liable only for the amount of money they invest in the partnership.

The biggest disadvantage of any partnership is the potential for disagreements, regardless of how well or how long the partners have known each other.Experts agree that a partnership agreement drawn up by an experienced lawyer is essential to a successful partnership.

Corporations: Corporations are recommended for entrepreneurs who plan to conduct a large scale enterprise. As a legal entity that has a life separate from its owners, a corporation can sue or be sued, acquire and sell property, and lend money. Corporations are divided into shares or stocks, which are owned by one, a few or many people. Ownership is based on the percentage of stock owned. Shareholders are not responsible for the debts of the corporation, unless they have personally guaranteed them. A shareholder's investment is the limit of her liability. Corporations can more easily obtain investment, raise capital by selling stock, and survive a change of ownership. They provide more protection from liability than other forms of business. Their potential for growth is unlimited.

BUSINESS PLAN

Definition: A business plan is a written summary of a proposed business. It includes information about the plans, operations and financial details, its marked opportunities and strategies, as well as the entrepreneur's personal background.

A business plan is a document used to summarize an entrepreneur's business aspirations, secure legal authority and mobilize resources to launch the business. Just as one needs a map to help find the route to an unknown destination, one needs a plan to help determine in which direction to go to get a business up and running. Written document explains an overall strategy and objectives in words and numbers. A business plan should estimate goals, expenses, and how much to charge for the services. It should also show how to attract and keep customers. After the business starts, the plan needs to be reviewed on an on-going basis. A business plan is a changing, dynamic document. There are no guarantees that the business will succeed but a well-written and well-researched business plan plays an important role in a business's success.

Why business planning is necessary?

➤ Business plans show if the business can expect to make a profit in the future. It shows what money to expect to come into and out of the business. For instance, if costs are expected to be high, there would be need to increase prices.
➤ A plan will be able to identify parts of the business that require improvement. In so doing, one will be forced to think about every part of the business. To work out a plan, one must therefore think carefully about everything that affects the business
➤ A business plan makes it possible to access a bank loan because most banks are interested in knowing the expected sales, costs and anticipated profits as well as cash flows before offering a loan.
➤ It forces one to think deeply and plan every detail properly before the start of business.
➤ It helps to determine the direction one want to move in.
➤ A business plan serves as a map against which one can determine the

process.

➢ A business plan provides details of resources required and can be given to potential investors/financiers.

➢ A business plan indicates chances for success and potential critical points.

Checklist for business plan:

➢ **The product**
   ✓ Why would customers buy the product/service?
   ✓ Are the product specifications clear and acceptable?

➢ **The market**
   ✓ Geographical description of the business location.
   ✓ Is there local demand for the product and if not, how can it be created?
   ✓ Who are the big competitors, how can you counteract them and their influence?
   ✓ How many competitors does the business have? If they are many, your market share is low, which means that aggressive promotion is necessary to ensure visibility.
   ✓ Does the product need publicity and if so, what expenses would that incur?
   ✓ What is the trend in the selling price? Is there any seasonality?

➢ **Technical factors**
   ✓ Have you selected all the necessary equipment? What are the reasons for this selection?
   ✓ If buying machinery, check if a guarantee and after sales service is included.
   ✓ Who is the supplier?
   ✓ Do you have the necessary skills and if not, where can you get

them?

> **Infrastructure**
>   - ✓ Is the working/selling space adequate for your business operation to function?
>   - ✓ Are ownership/tenancy documents for the land/shop/workshop in order?
>   - ✓ If water is required for your business to operate, is it available close by?
>   - ✓ Do you have/need a supply of electricity?
>   - ✓ Is transport of raw materials or finished goods a critical factor and if so, how do you plan to handle it while minimizing costs?
>   - ✓ Do you need to register your business? What are the legal requirements?

> **Financial analysis**
>   - ✓ Have you done financial calculations of needed costs, resources, income etc.?
>   - ✓ Have all the costs of production been included in your calculations?
>   - ✓ Does the business generate enough cash from the beginning so as to meet immediate liabilities (e.g. rent, loan repayment).
>   - ✓ Check your cash flow projections. Are they realistic?
>   - ✓ Check all estimates of capital required as well as running costs.

Examples and illustrations

https://www.youtube.com/watch?v=_-3piZGMDek

https://www.youtube.com/watch?v=hrbaL0EGwN0

https://www.youtube.com/watch?v=fGVZ896zpts

https://www.youtube.com/watch?v=K4D1MaT1TPA

https://www.youtube.com/watch?v=T-MZ507K8A8

https://www.youtube.com/watch?v=FpbL_2giXqU

https://www.youtube.com/watch?v=dQ-lOX5k-sw

Summary of the Modules:

Module	Learning Unit	Duration
Module L: Develop basic computer operating skills Aim: The aim of this module is to develop basic knowledge, skills and understanding of basic mobile hardware. Students should know about the basic fault diagnosis techniques.	**LU1.** Operate MS word **LU2.** Operate MS Excel **LU3.** Operate MS Power Point **LU4.** Perform Browsing	100 hours
Module M: Repair Soft ware Aim: The aim of this module is to develop basic knowledge, skills and understanding required to restore Factory Setting,Update Software/Flash, recover / Repair own IMEI, Convert File system, Install application software and deliver Mobile phone set	**LU1.** Restore Factory Setting **LU2.** Update Software/Flash **LU3.** Recover / Repair own IMEI. As per Rules **LU4.** Convert File system **LU5.** Install application software **LU6.** Deliver Mobile phone set	100Hours
Module N: Manage Mobile Phone Storage Aim: The aim of this module is to develop basic knowledge, skills and understanding to arrange Secure Storage, Maintain constant Environment at Store, Adopt Identification System ,Manage Inventory of Phone and accessories and Keep History Record of faulty Phone.	**LU1.** Arrange Secure Storage **LU2.** Maintain constant Environment at Store **LU3.** Adopt Identification System **LU4.** Manage Inventory of Phone and accessories **LU5.** Keep History Record of faulty Phone	50 hours

Module	Learning Unit	Duration
Module O: Develop Professionalism Aim: The aim of this module is to develop basic knowledge, skills and understanding required to develop professionalism and entrepreneurial skills ass per job's demand.	**LU1.** Demonstrate work ethics **LU2.** Aware of factors affecting personal health **LU3.** Resolve problems or disagreements with others **LU4.** Participate in professional development **LU5.** Work in team **LU6.** Work independently **LU7.** Interpret documentation **LU8.** Interpret rules and regulation of regulatory authorities **LU9.** Develop Entrepreneurial skills	150 Hours

Frequently Asked Questions

1.	What is Competency Based Training (CBT) and how is it different from currently offered trainings in institutes?	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.
2.	What is the passing criterion for CBT certificate?	You shall be required to be declared "Competent" in the summative assessment to attain the certificate.
3.	What are the entry requirements for this course?	The entry requirement for this course is 10th Grade or equivalent.
4.	How can I progress in my educational career after attaining this certificate?	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).
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?	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.
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 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 (NAVTTC). These standards are also recognized worldwide as all the standards are coded using international methodology and are accessible to the employers worldwide through NAVTTC 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 (NAVTTC). 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 leaching language of this course is Urdu and English.
19. Is it possible to switch to other certificate programs during the course?	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.

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?	You can start your small business of stitching leather garments, gloves of other products. You may need additional skills on entrepreneurship to support your initiative.

Test Yourself (Multiple Choice Questions)

MODULE   1

Q.N O1: short cut to print document in Ms word is?

A. Ctrl+P   C.   Ctrl+A

B. Ctrl+D   D.   Ctrl+S

Q.NO 2: fonts panel is in _____tab of Ms word?

A. Design   C.   pageLayout

B. Home   D.   review

Q.NO 3: In Excel, Columns are labelled as ___ ?

A. A, B, C, etc   C.   1,2,3 etc

B.   1,2,3 etc   D. A1, A2, etc

Q.NO 4: **The process of arrenging the items of a column in some sequence or order is known as :**

A. Arrengin   C.   Autofill

B. Sorting   D.   Sorting

Q.NO 5: **The _____ feature of MS Excel quickly completes a series of data**

:

A. Auto Complete   C.   Auto Fill

C. Fill Handle   D.   Both A&C

Q.NO 6: How to Open a presentation in PowerPoint?

A. Ctrl + K   C.   Ctrl + O

B. Ctrl+ A   D.   None of them

Q.NO 7: Special effects used to introduce slides in a presentation are known as ?

A. transitions   C.   annotations

 B. custom animations   D.   effects

Q.NO 8: Odin is use to flash _____ mobiles?

A. Samsung   B.   Media tak

C. I phone   D.   None of them

Q.NO 9: to flash Media tak(MTK) base mobile phone_____ flashing tool is use?

a. odin   b.   Sp flash

c. SPD research   d.   None of them

Q .NO 10: CM2 is flashing_____ tools

a. box   b.   dongle.

c. Both A&B   d.   None of them

Answers Key	
Number	Correct Answer
1	A
2	B
3	A
4	B
5	C
6	C
7	A
8	A
9	B
10	B