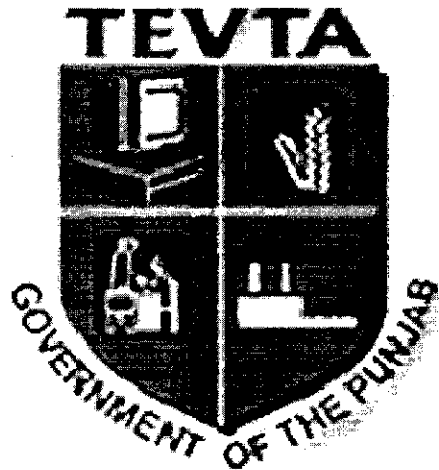
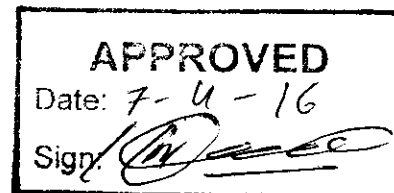


GOVERNMENT OF THE PUNJAB
TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY



CURRICULUM FOR
MOBILE PHONE REPAIRING

(3 – Month Course)
Revised April 2016



CURRICULUM SECTION
ACADEMICS DEPARTMENT
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TRAINING OBJECTIVES

This is an age of communication and the older methods of communication are becoming obsolete and newer & modern ones are continuously replacing them. One of such a modern communiqué is mobile communication. It has now become a necessity & has been enthusiastically adopted by the people throughout the world. The modern mass cannot think of life without this facility to connect with their family and friends at any time from any venue.

As a sequel of it being a necessity, it is absorbing more people into it than any other field of life these days. Now keeping in mind this fact, it is felt imperative to introduce some courses about mobiles.

Repairing of mobiles is one of such course, to produce skilled manpower, who will be able to carry out repair of the mobiles to enhance their life & to make them more useful. This curriculum of three months duration covers the usage of common hand tools, measuring instruments, usage of communication systems, faultfinding of mobile phones & their rectification, troubleshooting of software problems and upgrading of software version of handset independently to meet the need of job market.

CURRICULUM SALIENTS

Name of the Course
Entry Level

Mobile Phone Repairing

▪ Diploma of Associate Engineer in
Electronics / IT / CIT /
Telecommunication

OR

▪ G – II Level Course in Electrician /
Radio TV Electronics / Industrial
Electronics / Industrial Instrumentation &
Control

Duration of Course
Total Training Hours
Training Methodology

3 – Months (12 weeks)

400 Hours

Practical 80%


Theory 20%

Medium of Instruction

Urdu / English

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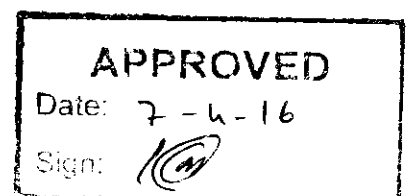
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SKILL PROFICIENCY DETAILS:

On successful completion of this course, the trainee should be able to:-

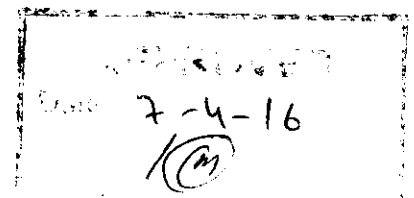
1. Apply the safety rules & precautions.
2. Describe the communication systems.
3. Explain the basic information about computer applications.
4. Define the basic concepts of wireless communication systems.
5. Define the wireless standards.
6. Describe the information about multiple access & GSM.
7. Express the concepts about basic networks like traffic / signaling, s. m card function & GSM channel types etc.
8. Express the repair of the mobiles.
9. Describe the troubleshooting of the hardware & software.
10. Describe the IMEI, unlock, sp lock, etc.



KNOWLEDGE PROFICIENCY DETAILS:


On successful completion of this course, the trainee should be able to:-

1. Work according to general workshop rules & regulations.
2. Use measuring instruments.
3. Use different communication systems like radio transmitter, radio receiver & wireless communication etc.
4. Operate the computers.
5. Operate different instruments like microscope, hot air gun & soldering station etc.
6. Find out faults in mobiles & to repair them.
7. Read the block diagrams of mobile sets.
8. Troubleshoot of different mobiles.
9. Troubleshooting of software problems.
10. Repair of IMEI.
11. Unlock the sp lock.
12. Upgrade software version of handsets.



SCHEME OF STUDIES
Mobile Phone Repairing
(3-Month Course)

S. No	Module	Theory	Practical	Total
1.	Fundamentals of Mobile Telephony	20	0	20
2.	Repair Methodology / Repair Technique	8	26	34
3.	Testing Method with Measuring Instruments	8	28	36
4.	Trouble Shooting	24	226	250
5.	I.T Fundamentals	4	16	20
6.	Functional English	15	25	40
Total		79	294	400

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DETAIL OF COURSE CONTENTS**Mobile Phone Repairing
(3-Month Course)**

Sr. No.	Details/Titles	Theory Hours	Practical Hours	Total Hours
1	Fundamentals of Mobile Telephony	0	0	0
1.1	Introduction to Wireless Communication System			0
1.1.1	Abbreviations of Communication Systems	1		1
1.1.2	Mobile Radio system Around the world	0.5		0.5
1.1.3	Examples of wireless Communication System	0.5		0.5
1.1.4	Paging	0.5		0.5
1.1.5	Cordless Telephone system	0.5		0.5
1.1.6	Cellular Telephone System	0.5		0.5
1.1.7	Comparison of Common Wireless Communication Systems	0.5		0.5
1.1.8	Problems	1		1
1.2	Multiplexing			0
1.2.1	Multiplexing Techniques Overview	0.5		0.5
1.2.2	Introduction to Multiplexing Technique	0.5		0.5
1.2.3	Frequency Division Multiplexing (FDM)	0.5		0.5
1.2.4	Time Division Multiplexing (TDM)	0.5		0.5
1.3	Multiple Access			0
1.3.1	Introduction to Multiple Access	0.5		0.5
1.3.2	Frequency Division Multiple Access (FDMA)	0.5		0.5
1.3.3	Time Division Multiple Access (TDMA)	0.5		0.5
1.3.4	Code Division Multiple Access (CDMA)	0.5		0.5
1.3.5	Advance Mobile Phones Service(AMPS) and European Total Access Communication System (ETACS) Overview	0.5		0.5
1.4	Global System for Mobile (GSM)			0
1.4.1	GSM History	0.5		0.5
1.4.2	GSM Specifications	0.5		0.5
1.4.3	GSM Band Spectrum	0.5		0.5
1.4.4	GSM Benefits	0.5		0.5
1.4.5	Growth in Wireless Data	0.5		0.5
1.4.6	Mobile Data Technology Evolution	0.5		0.5
1.4.7	GPRS (General Packet Radio Services)	0.5		0.5
1.5	Basic Network Overview			0
1.5.1	Traffic/signaling	0.5		0.5
1.5.2	Network overview	0.5		0.5
1.5.3	SIM-Card and mobile Equipment	0.5		0.5
1.5.4	SIM-Card Function	0.5		0.5
1.5.5	Mobile Identification	0.5		0.5
1.5.6	Trends in mobile Station	0.5		0.5


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	1.5.7	Services	0.5		0.5
	1.5.8	Tele services	0.5		0.5
	1.5.9	Supplementary Services	0.5		0.5
	1.5.10	Intelligent Net work Services	0.5		0.5
	1.5.11	Cellular Principles	0.5		0.5
	1.5.12	GSM Radio Subsystem	0.5		0.5
	1.5.13	GSM Channel Types	0.5		0.5
	1.5.14	Functions and Protocols	0.5		0.5
2	Repair Methodology				0
	2.1.1	Instruction to repair system for mobile phones hand set	0.5	2	2.5
	2.1.2	General Block diagram of mobile phones	0.5	2	2.5
	2.1.3	Inspection procedure	0.5	2	2.5
	2.1.4	Fault diagnoses procedure	0.5	5	5.5
	2.1.5	Trouble Shooting procedure	0.5	3	3.5
	2.1.6	Block diagram of mobile phones Nokia series	1	2	3
	2.1.7	Block diagram of mobile phones Sony – Erickson series	1	2	3
	2.1.8	Block diagram of mobile phones Siemens series	1	2	3
	2.1.9	Block diagram of mobile phones Motorola series	1	2	3
	2.1.10	Block diagram of mobile phones Samsung series	1	2	3
	2.1.11	Block diagram of mobile phones Panasonic series	0.5	2	2.5
3	Testing Method with Measuring Instruments				0
	3.1	How to operate the Microscope	1	6	7
	3.2	How to operate the Hot air gun	1	4	5
	3.3	How to operate the Soldering station	1	3	4
	3.4	How to operate the Rework station	1	2	3
	3.5	How to operate the Soldering Lead	0.5	2	2.5
	3.6	How to operate the Soldering Paste	0.5	2	2.5
	3.7	How to operate the De-Soldering wire	0.5	2	2.5
	3.8	Demonstration to Replace SMD, Exchange SMD Components	0.5	3	3.5
	3.9	Repairing steps	1	2	3
	3.1	Repairing tips	1	2	3
4	Trouble shooting				0
	4.1	Basic of Trouble Shooting			0
	4.1.1	How to Replace the Microphone	1		1
	4.1.2	How to Replace the Antenna	1		1
	4.1.3	How to Replace the Speaker	1		1
	4.1.4	How to Replace the battery terminal	1		1
	4.1.5	How to Changing Pin	1		1
	4.1.6	How to Replace the Vibrator	1		1
	4.1.7	How to Replace the Charging IC	1		1
	4.1.8	How to Replace the Filter cap	1		1

4.1.9	How to Replace the display	1		1
4.1.10	How to Replace the Transmitter	1		1
4.2	Troubleshooting of Software Problems			0
4.2.1	Introduction of Software problem of a Handset	1	1	2
4.2.2	Introduction of requirements (Basic Knowledge)	1	1	2
4.2.3	How to identify the software problem of different models of handsets	1	1	2
4.2.4	What is the cause of this problem	1	1	2
4.2.5	What is the effect of this problem	1	1	2
4.2.6	Cleaning Brush(Skills and Techniques)		1	1
4.2.7	Repairing Steps		1	1
4.2.8	Repairing Tips	1	1	2
4.2.9	Demonstration		2	2
4.2.10	How to use the appropriate equipment and software for troubleshooting	1	1	2
4.2.11	Practice		3	3
4.3	Trouble shooting of Nokia Series			0
4.3.1	Replacement of Microphone		2	2
4.3.2	Replacement of Antenna/Transmitter		2	2
4.3.3	Replacement of Speaker		2	2
4.3.4	Replacement of battery terminal		2	2
4.3.5	Changing Pin		2	2
4.3.6	Replacement of Vibrator		2	2
4.3.7	Replacement of Charging IC		2	2
4.3.8	Replacement of Filter cap		2	2
4.3.9	Replacement of display		4	4
4.4	Trouble shooting of Sony Erickson Series			0
4.4.1	Replacement of Microphone		2	2
4.4.2	Replacement of Antenna/Transmitter		2	2
4.4.3	Replacement of Speaker		2	2
4.4.4	Replacement of battery terminal		2	2
4.4.5	Changing Pin		2	2
4.4.6	Replacement of Vibrator		2	2
4.4.7	Replacement of Charging IC		2	2
4.4.8	Replacement of Filter cap		2	2
4.4.9	Replacement of display		4	4
4.5	Trouble shooting of Samsung Series			0
4.5.1	Replacement of Microphone		2	2
4.5.2	Replacement of Antenna/Transmitter		2	2
4.5.3	Replacement of Speaker		2	2
4.5.4	Replacement of battery terminal		2	2
4.5.5	Changing Pin		2	2
4.5.6	Replacement of Vibrator		2	2
4.5.7	Replacement of Charging IC		2	2
4.5.8	Replacement of Filter cap		2	2


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4.5.9	Replacement of display		4	4
4.6	Trouble shooting of Siemens Series			0
4.6.1	Replacement of Microphone		2	2
4.6.2	Replacement of Antenna/Transmitter		2	2
4.6.3	Replacement of Speaker		2	2
4.6.4	Replacement of battery terminal		2	2
4.6.5	Changing Pin		2	2
4.6.6	Replacement of Vibrator		2	2
4.6.7	Replacement of Charging IC		2	2
4.6.8	Replacement of Filter cap		2	2
4.6.9	Replacement of display		4	4
4.7	Trouble shooting of Panasonic Series			0
4.7.1	Replacement of Microphone		2	2
4.7.2	Replacement of Antenna/Transmitter		2	2
4.7.3	Replacement of Speaker		2	2
4.7.4	Replacement of battery terminal		2	2
4.7.5	Changing Pin		2	2
4.7.6	Replacement of Vibrator		2	2
4.7.7	Replacement of Charging IC		2	2
4.7.8	Replacement of Filter cap		2	2
4.7.9	Replacement of display		4	4
4.8	Trouble shooting of Motorola Series			0
4.8.1	Replacement of Microphone		2	2
4.8.2	Replacement of Antenna/Transmitter		2	2
4.8.3	Replacement of Speaker		2	2
4.8.4	Replacement of battery terminal		2	2
4.8.5	Changing Pin		2	2
4.8.6	Replacement of Vibrator		2	2
4.8.7	Replacement of Charging IC		2	2
4.8.8	Replacement of Filter cap		2	2
4.8.9	Replacement of display		4	4
4.9	Repairing IMEI,Unlock SP Lock and Up gradation of Software Version of handset			0
4.9.1	Introduction of the requirements(Basic Knowledge)	1	1	2
4.9.2	What is IMEI	1	1	2
4.9.3	What is Phone Lock	1	1	2
4.9.4	What is SIM Lock	1	1	2
4.9.5	What is the requirements to upgrade the handset?	1	1	2
4.9.6	Tools and equipment		1	1
4.9.7	Introduction of the related equipment and software to do the job	1	1	2
4.9.8	Skills and techniques		1	1
4.9.9	Repairing Steps		1	1

	4.9.10	Repairing Tips	1	1	2
	4.9.11	Demonstration		1	1
	4.9.12	How to use the appropriate equipment & software for repairing		1	1
	4.1	Practice Handset Circuit Analysis and Troubleshooting for Nokia			0
	4.10.1	Identification of Location of major components mounted on the PCB		2	2
	4.10.2	Identification of Major Circuits on the PCB		2	2
	4.10.3	Common faults symptoms analysis		2	2
	4.10.4	Repair Flow		2	2
	4.10.5	Repair Tips		1	1
	4.10.6	Demonstration		2	2
	4.10.7	Troubleshooting on both software and hardware problems		4	4
	4.11	Practice Handset Circuit Analysis and Troubleshooting for Sony-Ericsson			0
	4.11.1	Identification of Location of major components mounted on the PCB		2	2
	4.11.2	Identification of Major Circuits on the PCB		2	2
	4.11.3	Common faults symptoms analysis		2	2
	4.11.2	Repair Flow		2	2
	4.11.3	Repair Tips		1	1
	4.11.4	Demonstration		2	2
	4.11.5	Troubleshooting on both software and hardware problems		4	4
	4.12	Practice Handset Circuit Analysis and Troubleshooting for Samsung			0
	4.12.1	Identification of Location of major components mounted on the PCB		2	2
	4.12.2	Identification of Major Circuits on the PCB		2	2
	4.12.3	Common faults symptoms analysis		2	2
	4.12.4	Repair Flow		2	2
	4.12.5	Repair Tips		1	1
	4.12.6	Demonstration		2	2
	4.12.7	Troubleshooting on both software and hardware problems		4	4
	4.13	Practice Handset Circuit Analysis and Troubleshooting for Siemens			0
	4.13.1	Identification of Location of major components mounted on the PCB		1	1
	4.13.2	Identification of Major Circuits on the PCB		1	1
	4.13.3	Common faults symptoms analysis		1	1
	4.13.4	Repair Flow		1	1
	4.13.5	Repair Tips		1	1
	4.13.6	Demonstration		1	1

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4.13.7	Troubleshooting on both software and hardware problems		4	4
4.14	Practice Handset Circuit Analysis and Troubleshooting for Motorola			0
4.14.1	Identification of Location of major components mounted on the PCB		2	2
4.14.2	Identification of Major Circuits on the PCB		2	2
4.14.3	Common faults symptoms analysis		2	2
4.14.4	Repair Flow		2	2
4.14.5	Repair Tips		2	2
4.14.6	Demonstration		2	2
4.14.7	Troubleshooting on both software and hardware problems		4	4
4.15	Practice Handset Circuit Analysis and Troubleshooting for Panasonic			0
4.15.1	Identification of Location of major components mounted on the PCB		1	1
4.15.2	Identification of Major Circuits on the PCB		1	1
4.15.3	Common faults symptoms analysis		1	1
4.15.4	Repair Flow		1	1
4.15.5	Repair Tips		1	1
4.15.5	Demonstration		1	1
4.15.6	Troubleshooting on both software and hardware problems	0	3	3
Total				

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LIST OF PRACTICALS

- Interpreting schematic drawing of simple electrical circuit.
- Practice of loose wiring on the following circuit.
- Identify inductor, capacitor, transformers, vacuum tubes, transistors and their symbols. Drawing of simple circuits using the symbols.
- Introduction of ammeter, voltmeter, wattmeter and multi-meter
- Measurement of current using ammeter
- Measurement of voltage using voltmeter
- Measurement of current, voltage and resistance using multi-meter
- Verification of Ohm's law.
 - I. Keeping the voltage constant.
 - II. Keeping the resistance constant.
- Verification of the laws of series and parallel combination of resistance by
 - I. Ohmmeter method.
 - II. Voltmeter – ammeter method.
- Verify kirchoff's laws.
- Measurement of power.
 - I. Voltmeter / Ammeter method.
 - II. Wattmeter.
- Practice of resistor color-coding.
- Identification of various types of capacitors and their color-coding.
- Determine the capacitance by using digital LCR meter
- Verify laws of combination of capacitor.
- Observe capacitor charging and discharging.
- Determine the inductance of a choke coil using LCR meter
- Familiarization with various type of transformers used in electric field
- Determine voltage and current ratio of a transformer
- Identification of diodes, transistors (BJT & FET) and their electrodes.
- Identification of various diodes, transistors and ICs (number system and terminals).
- Checking of junction diode and constructing a bridge rectifier.
- Study number system of diode and transistor using data books.
- Assembling a full wave diode rectifier with a filter.
- Demonstrate diode as a switch with LED as a load.

- Troubleshoot a faulty diode rectifier circuit.
- Assemble Zener diode as voltage regulator
- Assemble a power supply using IC regulator
- Usage of oscilloscope
- Observing sine wave on an oscilloscope and determine its
 - peak and peak-to-peak value
 - r.m.s and average value
 - Wavelength, time period and frequency
- Draw the Circuit diagram of half / full wave rectifier
 - Procedures of Booting.
 - Booting DOS,
 - Windows 3.X Boot Process,
 - Windows 95/98/XP Booting Process.
 - Configurations of Windows & adding Device Drivers.
 - Disk scanning through Scandisk utility
 - Identification of the elements of windows start-up screen.
 - Identification of the icons, bars and elements of explorer windows.
 - Use explorer to work in files and folders.
 - Using windows help.
 - Running application programs under windows.
 - Introduction to Dos Commands.
 - Installation of other peripheral devices.
 - Identify different IC packages.
 - Identification of TTL and CMOS families.
 - Pin configuration of TTL, NOT, OR, AND, NOR, NAND gates.
 - Pin identification CMOS, NOT, OR, AND, NOR, NAND gates.
 - Verification of truth tables two input / three input OR gate.
 - Verification of truth tables two input / three input AND gate.
 - Verification of truth tables NOT gate.
 - Verification of truth tables two input / three input NOR gate.
 - Verification of truth tables two input / three input NAND gate.
 - Conversion of NAND/NOR gates into NOT, OR, AND gates.
 - Development of OR and AND gate by using discrete components.
 - Build XOR and XNOR circuits using basis gates.


SCHEME OF STUDIES
I.T Fundamentals

No	Main Topics	Theory Hours	Practical Hours	Total
1.	Introduction to Computers	1	4	5
2.	Typing - Microsoft Word	2	6	8
3.	Internet & Electronic Mail	1	6	7
Total		04	16	20

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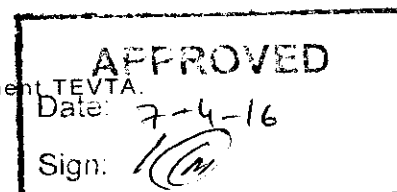
DETAIL OF COURSE CONTENTS
I.T Fundamentals

S. No	Topic	U/S	Hour
1	<p>Introduction to Computers</p> <p>1.1 What is a computer- Definition, functions and general features?</p> <p>1.2 What is Hardware – 1.2.1 Computer parts and units 1.2.1.1 Input Unit - Keyboard, Mouse etc. 1.2.1.2 Central Processing Unit 1.2.1.3 Output Unit</p> <p>1.3 What is Software – 1.3.1 Electronic Parts of a Pc it is 1.3.1.1 Software and Its types 1.3.1.2 System Software, Application Software</p> <p>1.4 Working with windows Operating System 1.4.1 How does windows desktops work?</p> <p>1.5 What are the Icons, Shortcuts and other graphic, 1.5.1 How to see computer contents on different drives etc</p>	1	4
2	<p>Typing and Word processing (MS Word)</p> <p>2.1 Proper way of typing correct and speedy - getting familiar with the keys</p> <p>2.2 Where to type in computer? How to save a file? How to get it back? Where to find your saved work?</p> <p>2.3 How to get it printed?</p>	2	6
3	<p>Emailing and Internet Surfing</p> <p>3.1 How to go to Internet, what is required for an internet connection etc.</p> <p>3.2 How to use email? How to search on web? Etc</p> <p>3.3 How to make new email account, login and logout an email account etc.?</p>	1	6
		4	16

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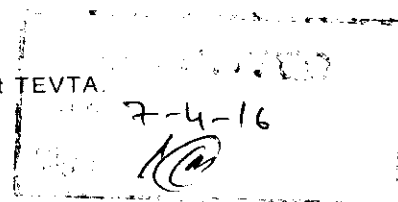
LIST OF PRACTICALS
I.T Fundamentals

S. No.	Name of Practical
1.	Turn On/Off and setting of power supply
2.	Accessing The Desktop
3.	Using of Icons and Shortcuts
4.	Setting / customizing the desktop
5.	Viewing the contents of computer – Directory
6.	Copying, Deleting and Moving Files in a folder
7.	Working with different Applications
8.	Opening MS Word for typing
9.	First lesson of Typing A S D F
10.	Second Lesson of typing J K L ;
11.	Third Lesson U I O P
12.	Fourth Lesson R E W Q
13.	Fifth Lesson N M , .
14.	Sixth Lesson V C X Z
15.	Seventh Lesson All letter using R index Finger
16.	Eighth Lesson All letter using L index Finger
17.	Formatting in MS Word Bold, Italic etc.
18.	Using Internet
19.	Opening Email, making new account
20.	Sending Receiving Emails



SCHEME OF STUDIES
Functional English

S.No	Main Topics	Theory Hours	Prac Hrs	Total Hours
1.	Introduction of English Sentence Structure	2	3	5
2.	Use of present indefinite tense	2	3	5
3.	Use of 'is' 'are' 'am' questions and negatives	2	3	5
4.	Ask questions	2	3	5
5.	Express daily routines	2	3	5
6.	Know how to address people	1	2	3
7.	Provide written feedback	1	2	3
8.	Dialogues	1	2	3
9.	Understand vocabulary	1	2	3
10.	Application/C.V.	1	2	3
Total		18	25	43



DETAIL OF COURSE CONTENTS
Functional English

S. No.	Details of Topics	Theory Hours	Practical Hours
1	Introduction of English sentence structure	2	3
2	Use of present indefinite tense with exercises	2	3
3	Use of 'is' 'are' 'am' questions and negatives	2	3
4	4.1 Ask questions 4.1.1 At work place 4.1.2 In the market 4.1.3 In classroom	2	3
5	5.1 Express daily routines 5.1.1 Before going to college 5.1.2 Dealing with colleagues 5.1.3 Going to market	2	3
6	6.1 Know how to address people 6.1.1 In Meetings 6.1.2 In class	1	2
7	7.1 Provide written feedback 7.1.1 After visiting the market 7.1.2 On some official task	1	2
8	8.1 Dialogues 8.1.1 With colleague 8.1.2 Teacher/student 8.1.3 Employer/employee 8.1.4 Booking on railway station	1	2
9	Understand vocabulary	1	2
10	Application / C.V.	1	2
Total		15	25

LIST OF PRACTICALS
Functional English

S. No.	Practical
1.	Group discussion
2.	Interviews
3.	Role play

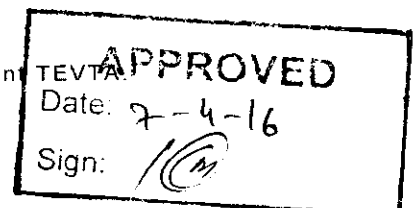
LIST OF LABS

Mobile Phone Repairing

- Mobile Repairing Lab

I.T Fundamentals

- Computer Lab



LIST OF MACHINERY / EQUIPMENT / TOOLS

(For a class of 25 students)

Name of Trade	Mobile Phone Repairing
Duration of Course	3-Months

S. No.	Nomenclature of Equipment/Tools	Quantity
1.	Surface mount device rework station	5 Nos.
2.	micro scope	2 Nos.
3.	Product specific jigs for different brands.	2 Nos.
4.	GSM test set	2 Nos.
5.	Universal antenna coupler with complete base station	2 Nos.
6.	Power supply digital	10 Nos.
7.	Storage box	200 Nos.
8.	Flash Programmer	5 Nos.
9.	Universal battery tester	10 Nos.
10.	Grounding station (EST / SMD)	5 Nos.
11.	Soldering Iron	25 Nos.
12.	BGA rework station	25 Nos.
13.	SMD rework station	10 Nos.
14.	Tool kits (for mobile repacking)	25 Nos.
15.	Computer set P-IV	10 Nos.
16.	RF Signal generator 2000 MHZ	2 Nos.
17.	Digital / Analog, Multimeter	10 Nos.
18.	Digital Oscilloscope	2 Nos.
19.	Authenticator / Nokia software downloader	25 Nos.
20.	Wood bench	25 Nos.
21.	Est chairs	2 Nos.
22.	Service station	2 Nos.
23.	Hot air gun	2 Nos.

COMPUTER LAB

S. No.	Equipment	Quantity
1.	Desktop computer (Specifications as per notification issued by MIS Section, TEVTA)	26 (1 for each student & 1 for the teacher)
2.	Printer (Laser)	01
3.	Scanner	01
4.	Internet Connection (At least 1 MB speed)	01
5.	UPS 10 KVA	01
6.	Air Conditioner 1 ½ Ton	02
7.	Multimedia Projector	01

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LIST OF CONSUMABLE MATERIAL

(For a class of 25 students)

Name of Trade	Mobile Phone Repairing
Duration of Course	3-Months

S. No	Item Description	Quantity
1.	PVC Wire 3/29, 1/29 and 23/76	Each 2 coils
2.	Lamp 60w/200w	Each 6No,s
3.	Switch, show, 2 way switch, socket, Multi-pin socket, lamp holder	Each 25 No,s
4.	Copper coted Sheet 4'x4'	5 No,s
5.	PVC Board 7" x 4" with plastic plate and hole for 2switch, 1socket, 1socket multi-pin and 1 Lamp holder	25 No,s
6.	Resistor Different values	500 No,s
7.	Transformer 6v+6V, 220V input 3A	10 No,s
8.	Capacitor 1000uf /65v 100uf/35, 47uf/35V	Each 50 No,s
9.	Diode IN4004/4007	Each 100 No,s
10.	LED red, green, blue and multi colour	100 No,s Each
11.	Huck up wire (flexible)	5 coil
12.	Board marker	2 dozen
13.	Permanent Marker fine Tip	3 dozen
14.	Zener Diode 6V,9V,12V 2watt	Each 25 No,s
15.	Transistor C828,C1383,A684,2N3055	Each 25 No,s
16.	Variable Resistor 500 ohm and 1K Ω	Each 25 No,s
17.	etching material	2 Kg
18.	charging pin different model (for Available mobile in stock)	5 No,seach
19.	Antenna different model (for Available mobile in stock)	5 No,seach
20.	Microphone different model (for Available mobile in stock)	5 No,seach
21.	Speaker different model (for Available mobile in stock)	5 No,s Each
22.	Motherboard different model (for Available mobile in stock)	5 No,s Each
23.	LCD different model (for Available mobile in stock)	5 No,s Each
24.	Board Gripper OR JIGdifferent model (for Available mobile in stock)	5 No,s Each
25.	Soldering wire	5 No,s Each
26.	Car phone charger different model (for Available mobile in stock)	5 No,s Each
27.	contact cleaner	3 No,s
28.	De soldering paste (imported)	2 ten big
29.	USB Charging cable different model (for Available mobile in stock)	5 No,s Each


30.	Software with all accessories different model (for Available mobile in stock)	5 No,s Each
31.	Screen protector different model (for Available mobile in stock)	5 No,s Each
32.	Batteries different model (for Available mobile in stock)	5 No,seach
33.	Component storage box	5 No,s Each
34.	Screen protector different model (for Available mobile in stock)	5 No,s Each
35.	Computer interfacing cables different model (for Available mobile in stock)	5 No,s Each
36.	Casing different model (for Available mobile in stock)	5 No,s Each

Functional English

S.No.	Item	Quantity
1.	Stationery	As per requirement
2.	Board Markers	As per requirement

I.T Fundamentals

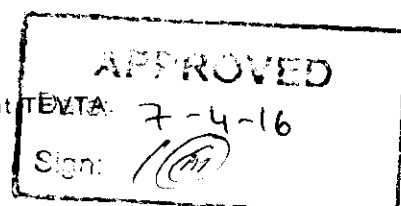
S.No.	Item	Quantity
1.	Printing Paper	As per requirement
2.	Printer Toner	As per requirement

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EMPLOYABILITY OF PASS OUTS

The pass outs of this course may find job / employment opportunities in the following sectors / areas: -

1. Mobile phone companies i.e. NOKIA, SONY ERICSSON, SAMSUNG, MOTOROLA, SIEMENS, and PANASONIC.
2. Customer service centers of NOKIA, SONY ERICSSON, SAMSUNG, MOTOROLA, SIEMENS, and PANASONIC.
3. Mobile phone repair work shops.



REFERENCE BOOKS

Mobile Phone Repairing

1. Modern digital and analog communication system By BP Lathi
2. Wireless Communication Principles and practice
3. The order Rappapost By Modern digital & analog communication system
4. Fundamentals of Electronic 3rd by Flyod
5. Electronics principles By Maluim
6. Electronics fundamentals circuits devices and applications By Floyd

Functional English

1. High School English Grammar By Wren & Martin
2. Oxford English Grammar

I.T Fundamentals

1. Introduction to Computer by Peter Norton
2. 2007 Microsoft® Office System Step by Step by Joyce Cox, Steve Lambert and Curtis Frye
3. Internet and E-mail with Windows 7 by Studio Visual Steps

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(M)

MINIMUM QUALIFICATION OF TEACHER / INSTRUCTOR

Mobile Phone Repairing

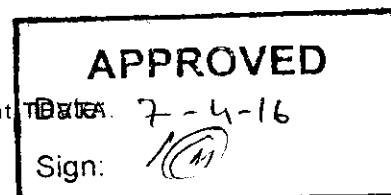
- B.Sc. Engineering in relevant field with 2 years relevant experience
OR
- DAE in relevant field with 4 years relevant experience
OR
- 2 years Proficiency Certificate with 6 years relevant experience.

Functional English

- M.A. (English)

I.T Fundamentals

- DAE CIT/ BCS from HEC recognized university



LIST OF TRADE RELATED JARGON

Level of integration	انضمام کی سطح	Examples	مثال کے طور پر
Standards	معیارات	Paging	پیجنگ
Cause	وجہ	Basic	بنیادی
Up gradation	اپ گریڈیشن	Effect	اثر
Technique	ٹیکنالوجی	Skills	ہنر
Troubleshooting	خرابیوں کا سراغ لگانا	Problems	مسائل
Inspection	معائنہ	Methodology	طریقہ کار
Identification	شناخت	Organizer	آرگنائزر
Tele services	ٹیلی خدمات	Task	ٹاسک
Demonstration	مظاہرے	Protocol	پروٹوکول
GPRS (General Packet Radio Services)	GPRS (جنرل پیکیٹ ریڈیو سروسز)	Supplementary Services	اضافی خدمات
Safety rules	سیفٹی قوانین	Equipment	سامان
Electro Motive Force	الیکٹرو محرک	Benefits	فوائد
Measuring instrument	ماپنے آلہ	Specification	تفصیلات
S M card "Subscriber Identity Module for a mobile phone"	SM کارڈ " سبسکرائبر ایک موبائل فون کے لئے شناختی ماڈیول"	Percentage	فی صد
Modulator	ماڈیولیٹر	Around the world	دنیا کے گرد
Abbreviation	مخفف	Wireless/ Cordless	وائرلس / بے تار
Amplifier	بیمپلیفائر	Regulated	ریگولیٹ
Junction	جنکشن	Light Emitting Diode	روشنی خارج کرنے والا دو برقیہ
Sinusoidal	منحنی موج	Communication	مواصلات
Impedance	مانیادا	Mutual induction	باہمی انڈکشن
Characteristics	خصوصیات	Magnetic field	مقناطیسی میدان
Rectification	ترمیم	electromagnet	برقی مقناطیسی میدان
Bradawl	سوا	Magnitude	مقدار
Capacitance	ظرفیت	Making	بنانا
Checking	جانچنا	Measurement	پیمانہ
Components	حصے	Multiplication	ضرب
Conductance	ابصا لیت	Parallel	متوازی
Conductivity	کرنت گزارے کی صلاحیت	GSM (global System for mobile)	GSM (موبائل کے لئے عالمی نظام)
Conductor	موصل	Plier	پلاس
Connecting	جوڑنا	Power	طاقت
Consumer	صارف	Principle	اصول
Current	برقی رو	Protective Device	حفاظتی آلہ
Cutting	کاٹنا	Removing	ختم کرنا
Decimal	اعشاریہ	Resistance	مزاحمت
Diagram	شکل	Resistivity	مزاحمت کی صلاحیت
Energy	توانائی	Reversing	سمت تبدیل کرنا
Equipment	آلات	Scissor	قینچی
Faults	نقص	Screw Driver	پیچ کس
File	رہتی	Semi-Conductor	نیم موصل

First Aid	ابتدائی طبی امداد	Series	سلسلہ وار
Fixing	لگنا	Soldering	ٹنکا لگنا
Hacksaw	لوہا کاٹنے والی آری	Specific Resistance	مزاحمت مخصوصہ
Hammer	ھتوڑا	Structure	ساخت
Handling	کنٹرول	Tools	اوزار
Identification	شناخت	Tracing	تلاش کرنا
Installation	لگنا	Tri square	گتیا
Insulation	حاجز تہہ	Understanding	سمجھنا
Insulation Remover	حاجز تہہ اتارنے والا آلہ	Vermeer Caliper	ورنیر کیلیپر
Insulator	حاجز	Voltage	وولٹیج
Magnet	مقناطیس	Work	کام
Alternating Current	متغیر کرنٹ	Direct Current	یکساں کرنٹ
Assembling	جوڑنا	Flexible	لچکدار
Blender	بلینڈر	Heat Proof	حرارتی اثر سے پاک
Blinking	ٹمٹماتا	Heating Element	حرارتی ایلیمینٹ
Construction	ساخت	Remedies	علاج
Diagnose	نشاندہی کرنا	Revolving System	گھومنے والا سسٹم
Configuration	ترتیب	Communication	مواصلات
IMEI (International Mobile Equipment Identity)	IMEI (بین الاقوامی موبائل آلات شناختی)	SP lock (service provider lock)	ایس پی ٹالا (سروس فراہم کرنے والے ٹالا)
Access	رسائی	safety rule	حفاظت کی حکمرانی
Properly	مناسب طریقے سے	Gain	حاصل کرنا
Trends	رجحانات	Intelligent	ذہین

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Date: 7-4-16

Signature

Curriculum Revision Committee

1. **Muhammad Mahboob Butt,** **Convener**
Chief Instructor,
GCT Sahiwal

2. **Muhammad Yousaf Mirza,** **Member**
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