

GOVERNMENT OF THE PUNJAB
TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY



CURRICULUM FOR
HOME APPLIANCES REPAIR

(3 – Month Course)

Revised April 2016

APPROVED

Date: 7-4-16

Sign: 

CURRICULUM SECTION
ACADEMICS DEPARTMENT
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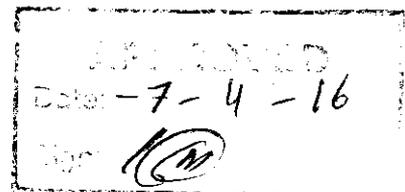
TRAINING OBJECTIVES

The objective of this course is to produce semi-skilled labour through imparting technical training to fresh entrants by more focusing on practical along with necessarily required theoretical knowledge about electrical home appliances being used by the people enabling the pass outs to maintain / keep up and repair such appliances.

This curriculum covers common hand tools, measuring instruments, maintain, diagnose and rectify faults in domestic appliances like electrical Iron, electric fans, kettle, florescent tube light, heaters and washing machine, single phase electric motors etc. by observing safety rules along with Functional English and Information Technology.

CURRICULUM SALIENTS

Entry Level	:	Middle
Duration of Course	:	3-Months
Total training hours.	:	400 Contact Hours
Training Methodology	:	Practical 80%
	:	Theory 20%
Medium of instructions	:	Urdu/English



SKILL PROFICIENCY DETAILS:

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

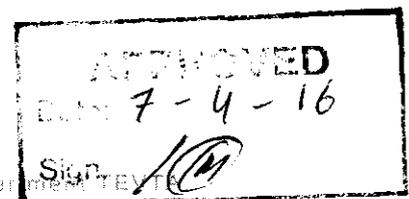
1. Adopt/Apply the electrical safety rules, personal safety precautions of instruments/equipment and tools.
2. Carryout the first aid treatment in case of electric shock.
3. Use the hand tools like pliers, hacksaw, hammer, screwdriver, hand
4. Use the suitable types and sizes of cables as per electrical load.
5. Interpret the electrical wiring and circuit diagram.
6. Interpret the circuit diagram of Home Appliances
7. Diagnose the faults and remedy of fluorescent tube light.
8. Diagnose the faults and remedy of electric Iron.
9. Diagnose the faults and remedy of electric fans.
10. Diagnose the faults and remedy of washing machine.
11. Diagnose the faults and remedy of electric heater.
12. Diagnose the faults and remedy of electric kettle.
13. Diagnose the faults and remedy of Toaster/sandwich maker
14. Diagnose the faults and remedy of Blender juicer/grinder.
15. Disassemble and assemble the single phase AC motors and remove their faults.
16. Diagnose the faults and remedy of Microwave Oven
17. Diagnose the faults and remedy of Vacuum Cleaner

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KNOWLEDGE PROFICIENCY DETAILS:

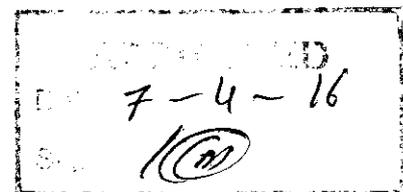
On successful completion of this course, the trainee should be able to:-

1. Explain the safety precautions and first aid treatment.
2. Explain the basic electrical theory.
3. Define the name and identification of electrical instruments/ equipment and tools (combination pliers, cutter pliers, star kit set, multi meter, volt meter ampere meter, tong tester, screw wrench, screw driver set, hammer, rubber hammer, testing board, leads, wire stripper, lock pliers pulley puller, soldering iron etc.)
4. Express the electrical wiring circuit diagram
5. Define the working of fluorescent tube light (construction, function of parts and circuit diagram explanation)
6. Describe the working of an electric iron (construction, function of parts and circuit diagram)
7. Describe the working of Electric fan (different kinds of fans, Construction, function of parts and circuit diagram)
8. Explain the working of washing machine (kinds of washing machine, function of different parts and circuit diagram).
9. Explain the working of electric heater (different kinds of Heaters, function of different parts and circuit diagram)
10. Express the working of electric kettle (construction, function of different parts and circuit diagram)
11. Express the working of Toaster (construction, function of different parts and circuit diagram)
12. Express the working of sandwich (construction, function of different parts and circuit diagram)
13. Express the working of blender / juicer (construction, function of different parts and circuit diagram)
14. Explain the working of Vacuum Cleaner(construction, function of different parts and circuit diagram)
15. Explain the working of Microwave Oven (construction, function of different parts and circuit diagram)
16. Define the single phase electric motors, types and their applications.



SCHEME OF STUDIES
Home Appliances Repair
(3-Month Course)

S. No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Basic Electrical Theory	15	10	25
2.	Electrical Wiring	10	20	30
3.	Florescent Tube	4	10	14
4.	Electric Fan	4	30	34
5.	Electric iron	3	20	23
6.	Washing Machine	6	30	36
7.	Electric Heater	2	16	18
8.	Electric Kettle	2	16	18
9.	Toaster & Sandwich Maker	4	25	29
10.	Blender Juicer/Grinder	4	25	29
11.	AC Electric Motor (Single Phase)	6	30	36
12.	Microwave Oven	4	20	24
13.	Vacuum Cleaner	4	20	24
14.	I.T Fundamentals	4	16	20
15.	Functional English	15	25	40
Total		87	313	400



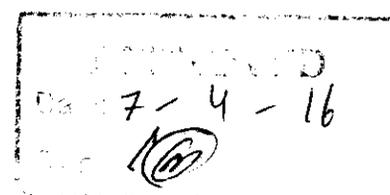
DETAIL OF COURSE CONTENTS**Home Appliances Repair
(3-Month Course)**

Sr. No.	Detail of Topics	Theory Hours
1.	Basic Electrical Theory 1.1. Introduction to electrical Theory 1.2. Basic Mathematics & Basic Electrical Units 1.3. Introduction to Electrical Instruments & Equipment 1.4. Electrical Symbols 1.5. Ohm's Law 1.6. Types of circuit 1.7. Series circuit 1.8. Parallel circuit 1.9. Combined series and parallel circuit 1.10. Work, power and electrical energy. 1.11. Earthing	15
2.	Electrical Wiring 2.1. Explanation of Circuit Diagram 2.2. Use of Tools 2.3. Precautions 2.4. Types of symbols use in wiring and Home Appliances Repair 2.5. Types of wiring diagram (Lay out diagram, Wiring diagram, Current path diagram) 2.6. Types of Electrical wiring 2.7. Fault diagnosis & Remedies: 2.8. Power Calculation of Appliances 2.8.1. Choice of Cable 2.8.2. Selection of Power plug, switches & Sockets	10
3.	Fluorescent Tube 3.1. Construction 3.2. Function of Parts 3.3. Circuit Diagram 3.4. Fault diagnosis & Remedies 3.4.1. Choke resistance is dead 3.4.2. Tube Rod is weak	04

	3.4.3. Starter is dead 3.4.4. Circuit problem	
4.	Electric Fan 4.1. Construction of Fans 4.2. Kinds of Fans 4.3. Functions of Parts 4.4. Circuit Diagram 4.5. Fault diagnosis & Remedies 4.5.1. Bearing is damaged 4.5.2. Bush is Loose 4.5.3. Capacitor is burnt 4.5.4. Winding burnt 4.5.5. Revolving System problem 4.5.6. Fan is Becoming Heated 4.5.7. Fan is giving High sound 4.5.8. Connection problem	04
5	Electric Iron 5.1. Construction of Electric Iron 5.2. Working Principle 5.3. Functions of Parts 5.4. Types of electric iron 5.5. Circuit Diagram 5.5.1. Fault diagnosis & Remedies 5.5.2. Element is Dead 5.5.3. Thermostat is not controlling the Temperature 5.5.4. Selector Pointer is damaged 5.5.5. Heatproof cap is damaged	03
6.	Washing Machine 6.1. Construction of Washing Machine with dryer 6.2. Functions of Parts (Manual / fully Automatic with dryer) 6.3. Working Principle (Manual / fully Automatic with dryer) 6.4. Kinds of Washing Machine (Manual / fully Automatic with dryer) 6.5. Fault diagnosis & Remedies to use of wiring diagram , schematic diagram and troubleshooting chart of washing	06

	<p>machine (Manual / fully Automatic with dryer)</p> <p>6.6. Diagnosis and Troubleshooting the Fault to use of the Error codes of fully Automatic washing machine</p>	
7.	<p>Electric Heater</p> <p>7.1. Construction of Electric Heater</p> <p>7.2. Working Principle</p> <p>7.3. Types of Electric Heater</p> <p>7.4. Functions of Parts</p> <p>7.5. Circuit diagram</p> <p>7.6. Fault diagnosis & Remedies</p> <p>7.6.1. Element is burnt</p> <p>7.6.2. Flexible Cable is short</p> <p>7.6.3. Joint is melt</p> <p>7.6.4. Wiring problem</p>	02
8	<p>Electric Kettle</p> <p>8.1. Construction of Electric Kettle</p> <p>8.2. Working Principle</p> <p>8.3. Functions of Parts</p> <p>8.4. Circuit Diagram</p> <p>8.5. Fault diagnosis & Remedies</p> <p>8.5.1. Element is Burnt</p> <p>8.5.2. Thermostat is not working properly</p> <p>8.5.3. Flexible cable is short</p>	02
9.	<p>Toaster / Sandwich maker</p> <p>9.1. Construction of toaster</p> <p>9.2. Working Principle</p> <p>9.3. Types of toaster</p> <p>9.4. Function of parts</p> <p>9.5. Circuit diagram</p> <p>9.6. Fault diagnosis & Remedies</p>	04
10.	<p>Blender juicer/Grinder</p> <p>10.1. Construction</p> <p>10.2. Working Principle</p> <p>10.3. Functioning of parts</p> <p>10.4. Circuit diagram of Blender juicer/Grinder</p>	04

	10.5. Fault diagnosis & Remedies	
11.	AC Electric Motor (Single Phase) 11.1. Construction of AC Single phase Electric Motor 11.2. Working Principle 11.3. Types of Electric Motor 11.4. Function of parts 11.5. Fault diagnosis & Remedies	06
12	Microwave Oven 12.1. Construction 12.2. Working Principle 12.3. Types of Microwave Oven 12.4. Functioning of parts Microwave Oven 12.5. Circuit diagram of Microwave Oven 12.6. Fault diagnosis & Remedies to use of wiring diagram , schematic diagram and troubleshooting chart Microwave Oven 12.7. Diagnosis and Troubleshooting the Fault to use of the Error codes of Microwave Oven	04
13	Vacuum Cleaner 13.1. Construction 13.2. Working Principle 13.3. Types of Vacuum Cleaner 13.4. Functioning of parts 13.5. Circuit diagram of Electric Oven 13.6. Fault diagnoses & remedies	04
Total		68



PRACTICALS

Sr. No.	Detail of Topics	Practical Hours
1.	Basic Electrical theory & Use of measuring instruments 1.1. Volt meter 1.2. Ampere meter 1.3. Multi-meter 1.4. Power Measurement (Direct & Indirect Method)	10
2	Electrical wiring & Identification of circuits 2.1. Making of single pole switch circuit 2.2. Making of two way switch circuit 2.3. Making of series/ testing board 2.4. Making of two lamps with multi switch circuit	20
3	Identification and remedies of faults in fluorescent tube light. 3.1. Disassembling and Assembling of fluorescent tube light. 3.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of fluorescent tube light. 3.2.1. Tube does not work with on/off switch 3.2.2. Delay in on condition 3.2.3. Blinking 3.2.4. Light is only on the ends of rod 3.2.5. Light is dim	10
4	Identification and remedies of faults in Electric Fan. 4.1. Disassembling and Assembling of Electric Fan. 4.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Electric Fan. 4.2.1. Bearing is damaged 4.2.2. Bush is Loose 4.2.3. Capacitor is burnt 4.2.4. Winding burnt 4.2.5. Revolving System problem 4.2.6. Fan is Becoming Heated 4.2.7. Fan is giving High sound 4.2.8. Connection problem	30

	<p>4.2.9. Fan does not work</p> <p>4.2.10. Fan speed is slow</p> <p>4.2.11. Fan does not start without push (check and replace faulty parts)</p>	
5	<p>Identification and remedies of faults in Electric Iron.</p> <p>5.1. Disassembling and Assembling of electric iron</p> <p>5.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of electric iron</p> <p>5.2.1. Fuse burns when electric iron is on</p> <p>5.2.2. Body is short circuited</p> <p>5.2.3. Indication light does not work (check and replace faulty)</p> <p>5.2.4. Iron does not give heat properly or thermostat fault check and replace.</p>	20
6	<p>Identification and remedies of faults in Washing Machine</p> <p>6.1. Disassembling and Assembling of Washing machine</p> <p>6.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Manual Washing machine</p> <p>6.2.1. Diagnosis and Troubleshooting the Fault to use of the Error codes of fully Automatic washing machine</p> <p>6.2.2. Rotary plate does not rotate when washing machine is on</p> <p>6.2.3. Motor of washing machine is heated</p> <p>6.2.4. Machine motor gives sound while running</p> <p>6.2.5. Washing machine inlet and outlet value not work</p> <p>6.3. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Manual Washing machine</p> <p>6.3.1. Washing machine does not work</p> <p>6.3.2. Motor of washing machine does not work and gives sound.</p> <p>6.3.3. Rotary plate does not rotate when washing machine is on</p> <p>6.3.4. Motor of washing machine is heated</p> <p>6.3.5. Machine gives sound while running</p>	30

	<p>6.3.6. Machine gives electric shock</p> <p>6.3.7. Open, cleaning and check the parts of dryer Washing machine</p>	
7	<p>Identification and remedies of faults in Electric Heater/Fan Heater</p> <p>7.1. Disassembling and Assembling of Electric Heater/Fan Heater</p> <p>7.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Electric Heater/Fan Heater</p> <p>7.2.1. Electric heater does not work</p> <p>7.2.2. When electric heater is switched on, the fuse is burnt</p> <p>7.2.3. Wiring problem and Flexible Cable is short</p> <p>7.2.4. Element of heater is burnt</p> <p>7.2.5. Electric heater gives electric shock</p> <p>7.2.6. Supply terminal has melted and the heater does not work</p>	16
8	<p>Identification and remedies of faults in Electric Kettle</p> <p>8.1. Disassembling and Assembling of Electric Kettle</p> <p>8.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Electric Kettle</p> <p>8.2.1. Electric kettle does not work</p> <p>8.2.2. Fuse is burnt when electric kettle is switched on</p> <p>8.2.3. Electric Kettle does not work automatically (off function)</p> <p>8.2.4. Element of Electric Kettle is burnt</p>	16
9	<p>Identification and remedies of faults in Toaster& Sandwich maker</p> <p>9.1. Disassembling and Assembling of Toaster& Sandwich maker</p> <p>9.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Electric Kettle</p> <p>9.2.1. Toaster does not work</p> <p>9.2.2. Fuse is burnt when Toaster switched on</p> <p>9.2.3. Toaster does not work automatically</p> <p>9.2.4. Sandwich maker does not work</p> <p>9.2.5. Fuse is burnt when Sandwich makers switched on</p> <p>9.2.6. Sandwich maker does not work automatically</p>	25
10	<p>Identification and remedies of faults in Blender juicer/Grinder</p> <p>10.1. Disassembling and Assembling of Blender juicer/Grinder</p>	25

	<p>10.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Blender juicer /Grinder</p> <p>10.2.1. Blender juicer/Grinder does not work</p> <p>10.2.2. Wiring problem or Flexible Cable is short</p> <p>10.2.3. Fuse is burnt when Blender juicer/Grinder switched on</p> <p>10.2.4. Blender juicer/Grinder motor does not work.</p> <p>10.2.5. Blender juicer/Grinder motor does not start without push (check and replace faulty parts)</p>	
11	<p>Identification and remedies of faults in AC Electric Motor (Single Phase)</p> <p>11.1. Disassembling and Assembling of the AC Electric motor</p> <p>11.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of AC Electric motor</p> <p>11.2.1. Replacing the bearing & winding of motor</p> <p>11.2.2. AC Electric motor gives electric shock</p> <p>11.2.3. Electric motor does not start without push (check and replace faulty parts)</p> <p>11.2.4. Motor is heated</p> <p>11.2.5. Motor gives sound while running</p>	30
12	<p>Identification and remedies of faults in Microwave Oven</p> <p>12.1. Disassembling and Assembling the Microwave Oven</p> <p>12.2- Microwave Oven does not work automatically</p> <p>12.3. Diagnosis and Troubleshooting the Fault to use of the Error Codes of microwave oven</p> <p>12.4. Fault diagnosis & Remedies (Testing, alignment, adjustments And replacement) of major component of Microwave Oven. Microwave Oven does not work</p> <p>12.4.1. Fuse is burnt when it is switched on Microwave Oven</p> <p>12.4.2. Check and replacing of Door Assembly.</p> <p>12.4.3. Check and replacing of Drive Motor</p> <p>12.4.4. Check and replacing of High voltage capacitor.</p> <p>12.4.5. Check and replacing of Control Circuit Board</p> <p>12.4.6. Check and replacing of High Voltage Transformer</p>	20

	12.4.7. Check and replacing of Magnetron Gun	
13	Identification and remedies of faults in Vacuum Cleaner 13.1. Disassembling and Assembling of Vacuum Cleaner 13.2. Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Vacuum Cleaner 13.2.1. Vacuum Cleaner does not work 13.2.2 Replacing the faulty parts of Vacuum Cleaner 13.2.3. Fuse is burnt when it is switched on Vacuum Cleaner 13.2.4. Vacuum Cleaner does not work automatically	20
Total		272

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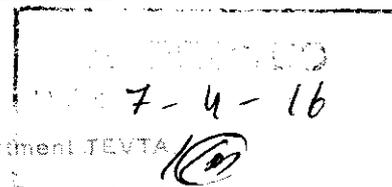
SCHEME OF STUDIES
I.T Fundamentals

S.No	Main Topics	Theory Hours	Practical Hours	Total Hours
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	Detail of Topics	Theory Hours	Practical Hours
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
Total		04	16



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

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SCHEME OF STUDIES
Functional English

S.No	Main Topics	Theory Hours	Practical Hours	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		15	25	40

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DETAIL OF COURSE CONTENTS
Functional English

S. No	Detail 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

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100

LIST OF PRACTICALS
Functional English

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

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LIST OF LABS

Home Appliances Repair

- Electrical Lab / Workshop

I.T Fundamentals

- Computer Lab

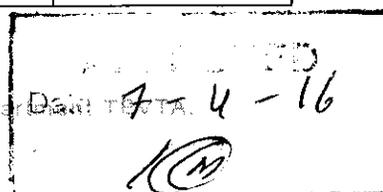
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LIST OF MACHINERY / EQUIPMENT / TOOLS

(For a class of 25 students)

Name of Trade	Home Appliances Repair
Duration of Course	3-Months

Sr. No.	Nomenclature of Equipment / Tools	Quantity (In Nos.)
1	Wire Stripper	25
2	Hammer (300 gm.)	10
3	Hammer (500 gm.)	05
4	Measuring Tape (5 m)	25
5	Screw Driver Philips types (1,2,3,4) set	05
6	Hacksaw Frame	10
7	Hacksaw Frame (Junior)	02
8	Bearing Puller (5 inch)	02
9	Bearing Puller (9 inch)	02
10	Allen Key Set (10 pieces)	02 Set
11	Star kit set	10
12	Sheet cutter (8 inch)	02
13	Rubber Hammer	02
14	Flat Chisel 12"	05
15	Masonry Drill (No.10-12)	05
16	Screw Wrench (8')	02
17	Screw Wrench (10')	02
18	Line Tester 7"	25
19	Pipe Wrench (10')	02
20	Screw Driver (4')	25
21	Screw Driver (6')	25



22	Screw Driver (8')	25
23	Ring Spanner Set 6-32mm	02 Set
24	Electric blower	02
25	Grip Pliers	02
26	Drill Set (01 to 13 mm)	02 Set
27	Line tester	25
28	Soldering Iron-150 watt	10
29	Tong Tester (Clamp Meter)	01
30	Multi Meter (AVO)	05
31	Combination Pliers Size (8')	25
32	Side Cutter Pliers (6')	25
33	Long Nose Pliers Size (7')	25
34	Flat File	10
35	Scissor 6"	05
36	High insulation rubber hand gloves	02
37	Socket Set Rechat Type 6-32mm	02 Set
38	Knife (Electric)	25
39	Soldering Iron 75 Watt	10
40	Screw Driver 12"	10
41	Megger with complete Accessories	01
42	Single Phase Energy Meter	02
43	Wire Gauge	02
44	Electric Drill Machine with chuck (0-13 mm) hammering	01
45	Crimping Tool -1.5 mm- 6mm	02
45	Pedestal Fan (24')	05
46	Ceiling Fan (56')	05
47	Exhaust Fan (18')	05

48	Electric Iron fully Automatic	02
49	Electric Iron (Steam)	02
50	Washing Machine with dryer (manual operated)	02
51	Washing Machine Fully automatic digital control panel (With Sinner)	02
52	Fan Heater	05
53	Electric Heater	05
54	Electric Kettle-	05
55	Toaster	05
56	Sandwich maker	05
57	Blender Juicer/Grinder	02
58	Electric Motor-1/4 HP (single phase)	02
59	Electric Motor-1/2 HP (single phase)	02
60	Electric Motor-1 HP (single phase)	02
61	Microwave Oven Manual	02
62	Microwave Oven fully Automatic (Touch operated)	02
63	Vacuum Cleaner	02
64	De Soldering Pump	05
65	Soldering Gun	02
66	Needle file set	02
67	Double Open end Spanner Set 6-32mm	02 Set

FURNITURE

S. No	Name of Articles	Quantity
1.	Working bench	10
2.	Wooden stool (for students)	25
3.	Chair for teacher	02
4.	White board (4 x 8 ft) with stand	01
5.	Steel Almirah (4 x 7 ft)	04
6.	Instructor table with 3 drawers	01

COMPUTER LAB

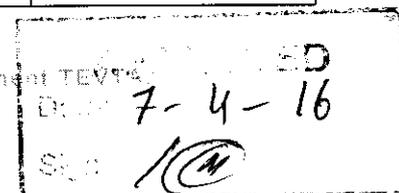
S. No.	Tools / Equipment	Quantity
1.	Desktop computer (Specifications as per notification issued by MIS Section, TEVTA)	26 (1 for each student & 1 for the teacher)
2.	Printer (Laser)	01
3.	Scanner	01
4.	Internet Connection (At least 1 MB speed)	01
5.	UPS 10 KVA	01
6.	Air Conditioner 1 ½ Ton	02
7.	Multimedia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

LIST OF CONSUMABLE MATERIAL

(For a class of 25 students)

Name of Trade	Home Appliances Repair
Duration of Course	3-Months

Sr. No.	Name of Material	Quantity (In Nos.)
1	Flexible wire (2-core) 40/0.0076	1-coil
2	Single way switch	50 -No's
3	Two way switch	50 -No's
4	Two pin socket	50 -No's
5	Lamp holder	50 -No's
6	Lamp 100 watt	10 -No's
7	Wooden Screw ($\frac{3}{4}$, 1" 1.5")	6-packet each
8	2 Pin Plug	25 -No's
9	Timer washing machine	10- No's
10	Selector switch (2-way)	10-No's
11	Heater Element-1000 watt	10- No's
12	Soldering Wire 60/40	500 gram
13	Paste for soldering (500 gram)	1- No's
14	Capacitor (2.5 ,3, 3.5 uf)	10- No's each
15	PvC wire 3/0.029	6 -coils
16	Flexible wire cotton Insulated (2-core) 40/0.0076	1-coil
17	PvC Cable Three Core 40/ .0076	1-coil
18	Connector Bar (10 A)	25- No's
19	PvC Board 4 x 4 with plate (2-hole)	100-No's
20	Socket Three Pin	25- No's
21	Light Plug	25- No's
22	Power Plug	25- No's
23	Lamp 200watt	6- No's



24	Insulation Tape	2-doz
25	Tube Rod 40 watt	25 No's
26	Tube starter 40 watt	25- No's
27	Motor capacitor (80/110 uf)	6- No's each
28	Fuse(kit kat) 10 A	25- No's
29	Fuse (cartridge types) 5A, 10 A	10 No's each
30	Fluorescent Tube complete (set) - 40 watt	25- No's
31	Fluorescent Tube complete (set)- 20 watt	25- No's
32	Thimbles (Assorted sizes)- 1.5mm- 6mm	25- No's each
33	Teflon tape	10 No's
34	Emery paper (0,1,2,3,)	10 No's each
35	Grease (tin -500gram)	1- No's
36	Kerosene oil (gallon)	1- No's
37	Bearing (62, 63 no)	6 No's each
38	Heater rod with element 1000 watt	10 No's
39	Carbon brush (assorted size / 4mm -5mm -7mm)	6 pair each
40	Insulated Sleeves (1,2,3,4 No's)	10 No's each
41	Electric iron Thermo sate automatic (1000 watt)	10 No's
42	Pvc wire flexible 40/ .0076	2-coil

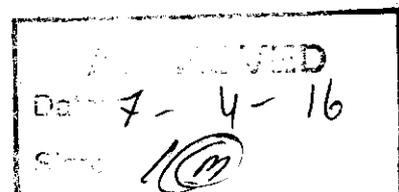
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Functional English

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

I.T Fundamentals

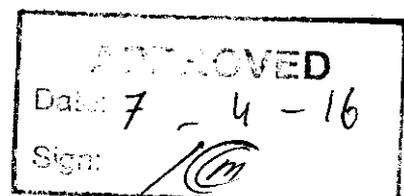
S. No.	Item	Quantity
1.	Printing Paper	As per requirement
2.	Printer Toner	As per requirement



EMPLOYABILITY OF PASS OUTS

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

1. Electric stores.
2. Electrical Appliances Repair Workshops
3. Industries
4. Hospitals.
5. Educational Institutes.
6. Offices.
7. Go downs.
8. Cinema Halls.
9. Hotels and restaurants.
10. Power Stations.
11. Railway Stations.



REFERENCE BOOKS

Home Appliances Repair

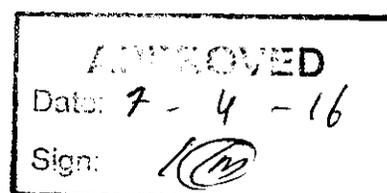
1. Trainee Manual of House Hold Appliances Repair Developed by Academics Department (Curriculum Section) - TEVTA
2. Trainee Manual of House Hold Appliances Repair Developed by Punjab Vocational Training Council.
3. TTP (book)- Ibtadi Electrical Engineering by Dittrich Volz
4. TTP-33- TRADE TRAINING –I (For Electrical)
5. Electrical Technology Volume I & II by B L THERAJA

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



MINIMUM QUALIFICATION OF TEACHER / INSTRUCTOR

Home Appliances Repair

- D.A.E in Electrical Technology with 2 years experience in the relevant field.

OR

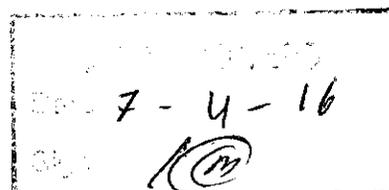
- Two years certificate of Electrician (G-II Level) with 6 years experience in the relevant field.

Functional English

- M.A. (English)

I.T Fundamentals

- DAE CIT/ BCS from HEC recognized university



LIST OF TRADE RELATED JARGON
GENERAL VOCABULARY WORDS

Bradawl	سوا	Magnitude	مقدار
Capacitance	ظرفیت	Making	بنانا
Checking	جانچنا	Measurement	پیمائش
Components	حصے	Multiplication	ضرب
Conductance	ایصالیت	Parallel	متوازی
Conductivity	کرنٹ گزارنے کی صلاحیت	Percentage	فی صد
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	قیچی
Faults	نقص	Screw Driver	پیچ کس
Files	ریتی	Semi-Conductor	نیم موصل
First Aid	ابتدائی طبی امداد	Series	سلسلہ وار
Fixing	لگانا	Soldering	ٹانکا لگانا
Hacksaw	لوہا کاٹنے والی آری	Specific Resistance	مزاحمت مخصوصہ
Hammer	ھنوزا	Structure	ساخت
Handling	کنٹرول	Tools	اوزار
Identification	شناخت	Tracing	تلاش کرنا
Installation	لگانا	Tri square	گنیا
Insulation	حاجز تہ	Understanding	سمجھنا
Insulation Remover	حاجز تہ اتارنے والا آلہ	Vernier Caliper	ورنیر کیلیپر
Insulator	حاجز	Voltage	ووٹیج
Magnet	مقناطیس	Work	کام

SPECIFIC VOCABULARY WORDS

Alternating Current	متغیر کرنٹ	Electric Iron	برقی استری
Assembling	جوڑنا	Flexible	لچکدار
Blender	بلینڈر	Heat Proof	حرارتی اثر سے پاک
Blinking	ٹمٹمانا	Heating Element	حرارتی ایلیمنٹ
Ceiling Fan	چھت والہ پنکھا	House Hold Appliances	گھریلو آلات
Commutator	کاموٹیٹر	Juicer	جوس بنانے والی مشین
Construction	ساخت	Remedies	علاج
Diagnose	نشاندہی کرنا	Revolving System	گھومنے والا سسٹم
Direct Current	یکساں کرنٹ	Sandwich Maker	سینڈ وچ بنانے والی مشین
Dis Assembling	دوبارہ جوڑنا	Washing Machine	کپڑے دھونے والی مشین

7-4-16

/C/

Curriculum Revision Committee

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

2. **Muhammad Ashraf,** **Member**
Chief Instructor (Electrical),
GTTI Mughalpura, Lahore.

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