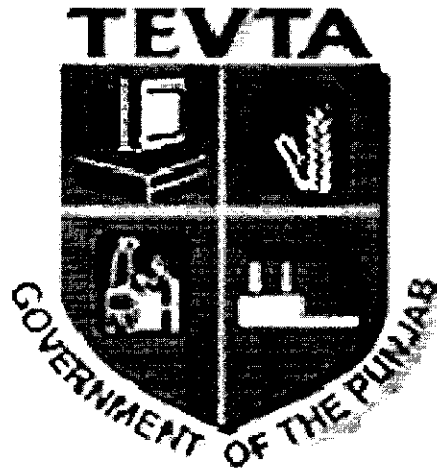
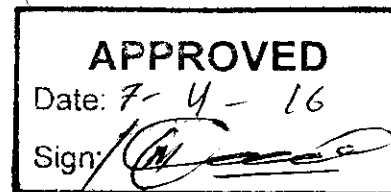


GOVERNMENT OF THE PUNJAB
TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY



CURRICULUM FOR
HOME APPLIANCES REPAIR
(6 – Months Course)
Revised April 2016



CURRICULUM SECTION
ACADEMICS DEPARTMENT
96-H, GULBERG-II, LAHORE
Ph # 042-99263055-59, 99263064,
gm.acad@tevta.gop.pk, manager.cur@tevta.gop.pk

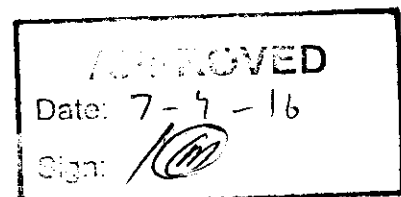
TRAINING OBJECTIVES

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 to be maintained / kept up and repair such appliances.

This curriculum covers the major topics of 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 ethical values.

CURRICULUM SALIENTS

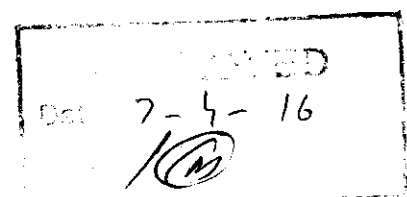
Entry Level	:	Middle
Duration of Course	:	6-Months
Total training hours.	:	800 Contact Hours
Training Methodology	:	Practical 80%
	:	Theory 20%
Medium of instructions	:	Urdu/English



SKILL PROFICIENCY DETAILS:

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

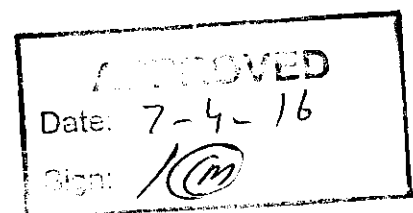
1. Adopt/Apply the electrical safety rules, personal safety precautions of instruments/equipment and tools.
2. Carryout the first aid treatment in case of electric shock.
3. Diagnose the faults and remedy of fluorescent tube light.
4. Diagnose the faults and remedy of electric Iron.
5. Diagnose the faults and remedy of electric fans.
6. Diagnose the faults and remedy of washing machine.
7. Diagnose the faults and remedy of electric heater.
8. Diagnose the faults and remedy of electric kettle.
9. Use the basic laws of electricity for calculation.
10. Use the hand tools like pliers, hacksaw, hammer, screwdriver, hand
11. Use the suitable types and sizes of cables as per electrical load.
12. Interpret the electrical wiring diagram.
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.



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. Define the working of fluorescent tube light (construction, function of parts and circuit diagram explanation)
5. Describe the working of an electric iron (construction, function of parts and circuit diagram)
6. Describe the working of fan (different kinds of fans, Construction, function of parts and circuit diagram)
7. Explain the working of washing machine (kinds of washing machine, function of different parts and circuit diagram).
8. Explain the working of electric heater (different kinds of Heaters, function of different parts and circuit diagram)
9. Express the working of electric kettle (construction, function of different parts and circuit diagram)
10. Express the working of Toaster (construction, function of different parts and circuit diagram)
11. Express the working of sandwich (construction, function of different parts and circuit diagram)
12. Express the working of blender / juicer (construction, function of different parts and circuit diagram)
13. Express the electrical wiring circuit diagram.
14. Explicate the single phase electric motors, types and their applications.
15. Explicate the types and sizes of cables as per electrical load.



SCHEME OF STUDIES
Home Appliances Repair
(6-Months Course)

Sr. No.	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Work Shop Practice	20	70	90
2.	Basic Electrical Theory	30	10	40
3.	Electrical Wiring	10	50	60
4.	Florescent Tube	6	20	26
5.	Electric Fan	6	30	36
6.	Electric iron	4	20	24
7.	Washing Machine	10	50	60
8.	Electric Heater	6	30	36
9.	Hair Drier	6	20	26
10.	Electric Oven	10	30	40
11.	Electric Kettle	4	20	24
12.	Toaster & Sandwich Maker	6	40	46
13.	Blender Juicer/Grinder	6	40	46
14.	AC Electric Motor (Single Phase)	10	80	90
15.	Vacuum Cleaner	6	30	36
16.	I.T Fundamentals	8	32	40
17.	Functional English	16	64	80
Total		164	636	800


 Date 7-4-16

DETAIL OF COURSE CONTENTS**Home Appliances Repair
(6-Months Course)**

Sr. No.	Detail of Topics	Theory Hours	Practical Hours
1.	<p>Workshop Practice</p> <p>1.1. Introduction (Workshop, Work Place, Tools)</p> <p>1.1.1. Order of workplace</p> <p>1.1.2. Introduction to general tools used in the metal workshop, their care and proper use</p> <p>1.1.3. Safety precautions</p> <p>1.2. Measuring (General Introduction)</p> <p>1.2.1. Purpose of measuring and checking tools</p> <p>1.2.2. Accuracy of measuring</p> <p>1.2.3. Linear measuring (steel rules, calipers, vernier calipers)</p> <p>1.2.4. Measuring Faults</p> <p>1.2.5. Care and Maintenance of Measuring tools</p> <p>1.3. Marking</p> <p>1.3.1. Necessity of marking</p> <p>1.3.2. Common marking tools (scriber, steel rule, & centre punch)</p> <p>1.4. Filing</p> <p>1.4.1. Process of filing</p> <p>1.4.2. Types of files with regards to cut and shape</p> <p>1.5. Sawing</p> <p>1.5.1. Cutting principle (rake angle)</p> <p>1.5.2. The saw blade (pitch of teeth, setting of teeth and tightening the blade in the</p>	20	70

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	frame)		
1.6. Drilling			
1.6.1. Drilling of thought holes (effect of movements of the drill, cutting process)			
1.6.2. Main parts (their name and function)			
1.6.3. Clamping and removing of twist drills			
1.6.4. Drilling faults			
1.7. Reaming			
1.7.1. Purpose and process of reaming			
1.7.2. Types of reamers (Hand reamers, machine reamers and adjustable reamers)			
1.8. Counter Sinking and Counter boring			
1.8.1. Counter sinking tools, purpose and procedure			
1.8.2. Size / No. of Counter bore			
1.9. Filing Exercise – I			
1.9.1. Filing of Channel			
1.10. Marking Exercise			
1.10.1. Flat Filing			
1.10.2. Marking			
1.10.3. Centre Punching			
1.11. Filing Exercise – II			
1.11.1. Flat Filing			
1.11.2. Square Filing			
1.12. Sawing Exercise			
1.12.1. Sawing and Square Filing within size			
1.13. Sheet Metal Box – I			
1.13.1. Filing			
1.13.2. Marking			
1.13.3. Shearing			
1.14. Drilling Exercise			
1.14.1. Marking			
1.14.2. Center Punching			

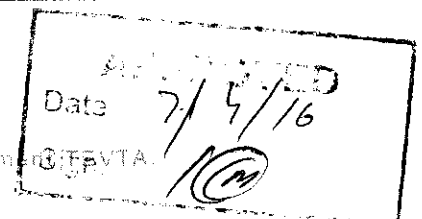
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	1.14.3. Drilling 1.14.4. De burring		
2.	Basic Electrical Theory 2.1. Introduction to electrical Theory 2.2. Basic Mathematics & Basic Electrical Units 2.3. Introduction to Electrical Instruments & Equipment 2.4. Electrical Symbols 2.5. Ohm's Law 2.6. Series circuit 2.7. Parallel circuit 2.8. Combined series and parallel circuit 2.9. Work, power and electrical energy 2.10. Earthing 2.11. Volt meter 2.12. Ampere meter 2.13. Multi-meter 2.14. Power Measurement (Direct & Indirect Method)	30	10
3	Electrical Wiring 3.1. Types of wiring 3.2. Types of symbols 3.3. Types of wiring diagram 3.4. Lay out diagram 3.5. Wiring diagram 3.6. Current path diagram 3.7. Series Board diagram 3.8. Fault diagnosis & Remedies: 3.8.1. Choice of Cable / wire 3.8.2. Selection of Power plug, switches & Sockets 3.9. Socket Circuit 3.10. Single Pole switch Circuit 3.11. Series Board Circuit	10	50

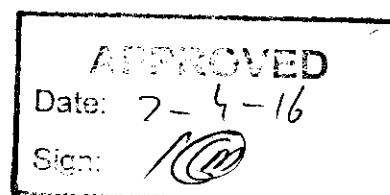
4.	Fluorescent Tube 4.1. Construction 4.2. Function of Parts 4.3. Circuit Diagram 4.4. Fault diagnosis & Remedies 4.4.1. Choke resistance is dead 4.4.2. Tube Rod is weak 4.4.3. Starter is dead 4.4.4. Circuit problem 4.5. Identification of faults 4.6. Tube does not work with on/off switch 4.7. Delay in on condition 4.8. Blinking 4.9. Light is only on the ends of rod 4.9.1. Light is dim	06	20
5	Electric Fan 5.1. Construction of Fans 5.2. Kinds of Fans 5.3. Functions of Parts 5.4. Circuit Diagram 5.5. Fault diagnosis & Remedies 5.5.1. Bearing is damaged 5.5.2. Bush is Loose 5.5.3. Capacitor is burnt 5.5.4. Winding burnt 5.5.5. Revolving System problem 5.5.6. Fan is Becoming Heated 5.5.7. Fan is giving High sound 5.5.8. Connection problem 5.6. Fan does not work 5.7. Fan speed is slow 5.8. Fan does not start without push 5.9. Fan gives sound while running	06	30

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	5.10. Short circuit		
6	Electric Iron 6.1. Types of electric iron 6.2. Construction of Electric Iron 6.3. Functions of Parts 6.4. Circuit Diagram 6.4.1. Fault diagnosis & Remedies 6.4.2. Element is Dead 6.4.3. Thermostat is not controlling the Temperature 6.4.4. Selector Pointer is damaged 6.4.5. Heatproof cap is damaged 6.5. Fuse burns when electric iron is on 6.6. Body is short circuited 6.7. Indication light does not work 6.7.1. Iron does not give heat properly	04	20
7	Washing Machine 7.1. Construction of Washing Machine 7.2. Kinds of Washing Machine 7.3. Functions of Parts 7.4. Circuit Diagram 7.5. Fault diagnosis & Remedies 7.5.1. Rubber Seal is worn out 7.5.2. Bearing is damaged 7.5.3. Bushes are loose 7.5.4. Belt problem 7.5.5. Timer Contact Damaged 7.5.6. Fuse indicator Problem 7.5.7. Electric motor is burnt 7.5.8. Capacitor is burnt 7.5.9. Motor Winding Shortage 7.5.10. Spinning problems 7.6. Washing machine does not work	10	50




	<p>7.7. Motor of washing machine does not work and gives sound</p> <p>7.8. Rotary plate does not rotate when washing machine is on</p> <p>7.9. Motor of washing machine is heated</p> <p>7.10. Machine gives sound while running</p> <p>7.10.1. Machine gives electric shock</p>		
8	<p>Electric Heater</p> <p>8.1. Construction of Electric Heater</p> <p>8.2. Types of Electric Heater</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. Flexible Cable is short</p> <p>8.5.3. Joint is melt</p> <p>8.5.4. Wiring problem</p> <p>8.5.5. Flexible cable is short</p> <p>8.6. Electric heater does not work</p> <p>8.7. When electric heater is switched on, the fuse is burnt</p> <p>8.8. Electric heater gives electric shock</p> <p>8.9. Supply terminal has melted and the heater does not work</p>	06	30
9.	<p>Hair Drier</p> <p>9.1. Construction</p> <p>9.2. Functioning of parts</p> <p>9.3. Fault diagnoses & remedies</p> <p>9.1. It does not work</p> <p>9.2. Fuse is burnt when it is switched on</p> <p>9.4. It does not work automatically</p>	06	20



10.	Electric Oven 10.1. Construction 10.2. Functioning of parts 10.3. Fault diagnoses & remedies 10.4. It does not work 10.5. Fuse is burnt when it is switched on 10.6. It does not work automatically 10.7. Electric kettle does not work 10.8. Fuse is burnt when it is switched on 10.9. It does not work automatically	10	30
11.	Electric Kettle 11.1. Construction of Electric Kettle 11.2. Functions of Parts 11.3. Circuit Diagram 11.4. Fault diagnosis & Remedies 11.4.1. Element is Burnt 11.4.2. Thermostat is not working properly 11.1. Electric kettle does not work 11.2. Fuse is burnt when it is switched on 11.5. It does not work automatically	04	20
12.	Toaster / Sandwich maker 12.1. Construction of toaster 12.2. Types of toaster 12.3. Function of parts 12.4. Circuit diagram 12.5. Fault diagnosis & Remedies 12.6. It does not work 12.7. Fuse is burnt when it is switched on 12.8. It does not work automatically	06	40
13.	Blender juicer/Grinder 13.1. Construction 13.2. Functioning of parts 13.3. Fault diagnosis & Remedies	06	40

	13.4. It does not work 13.5. Fuse is burnt when it is switched on 13.6. It does not work automatically		
14.	AC Electric Motor (Single Phase) 14.1. Construction of AC Single phase Electric Motor 14.2. Types of Electric Motor 14.3. Function of parts 14.4. Fault diagnosis & Remedies 14.5. Assembling and disassembling the motor 14.6. Replacing the bearing & winding of motor	10	80
15	Vacuum Cleaner 15.1. Construction 15.2. Functioning of parts 15.3. Fault diagnoses & remedies 15.4. It does not work 15.5. Fuse is burnt when it is switched on 15.6. Motor does not work	06	30
Total		140	540

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LIST OF PRACTICALS

S. No.	Detail of Topics
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)
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
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
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

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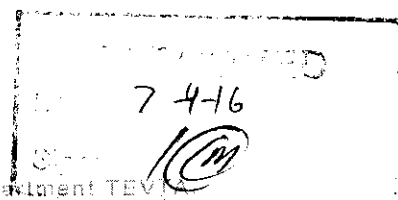
	<p>4.2.8 Connection problem</p> <p>4.2.9 Fan does not work</p> <p>4.2.10 Fan speed is slow</p> <p>4.2.11 Fan does not start without push (check and replace faulty parts)</p>
5	<p>Identification and remedies of faults in Electric Iron.</p> <p>5.1 Disassembling and Assembling of electric iron</p> <p>5.2 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 fault)</p> <p>5.2.4 Iron does not give heat properly or thermostat fault check and replace.</p>
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</p>

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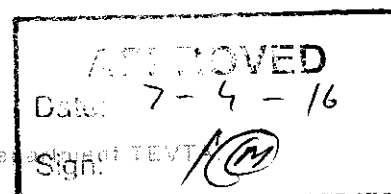
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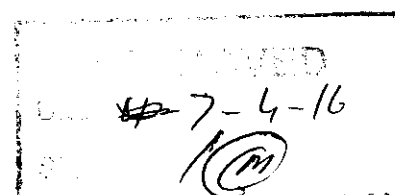
	<p>on</p> <p>6.3.4 Motor of washing machine is heated</p> <p>6.3.5 Machine gives sound while running</p> <p>6.3.6 Machine gives electric shock</p> <p>6.3.7 Open, cleaning and check the parts of dryer Washing machine</p>
7	<p>Identification and remedies of faults in Electric Heater/Fan Heater</p> <p>7.1 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>
8	<p>Identification and remedies of faults in Hair Dryer</p> <p>8.1 Disassembling and Assembling of Hair Dryer</p> <p>8.2 Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Hair Dryer</p> <p>8.2.1 Hair Dryer does not work</p> <p>8.2.2 When Hair Dryer is switched on, the fuse is burnt</p> <p>8.2.3 Wiring problem and Flexible cable is short</p> <p>8.2.4 Element of hair dryer is burnt</p> <p>8.2.5 Hair Dryer gives electric shock</p> <p>8.2.6 Supply terminals has melted and the hair dryer does not work</p>
9	<p>Identification and remedies of faults in Microwave Oven</p> <p>9.1 Disassembling and Assembling the Microwave Oven</p> <p>9.2 Microwave Oven does not work automatically</p>



	<p>9.3 Diagnosis and Troubleshooting the Fault to use of the Error Codes of microwave oven</p> <p>9.4 Fault diagnosis & Remedies (Testing, alignment, adjustments And replacement) of major component of Microwave Oven.</p> <p>9.5 Microwave Oven does not work</p> <p>9.5.1 Fuse is burnt when it is switched on Microwave Oven</p> <p>9.5.2 Check and replacing of Door Assembly.</p> <p>9.5.3 Check and replacing of Drive Motor</p> <p>9.5.4 Check and replacing of High voltage capacitor.</p> <p>9.5.5 Check and replacing of Control Circuit Board</p> <p>9.5.6 Check and replacing of High Voltage Transformer</p> <p>9.5.7 Check and replacing of Magnetron Gun</p>
10	<p>Identification and remedies of faults in Electric Kettle</p> <p>10.1 Disassembling and Assembling of Electric Kettle</p> <p>10.2 Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Electric Kettle</p> <p>10.2.1 Electric kettle does not work</p> <p>10.2.2 Fuse is burnt when electric kettle is switched on</p> <p>10.2.3 Electric Kettle does not work automatically (off function)</p> <p>10.2.4 Element of Electric Kettle is burnt</p>
11	<p>Identification and remedies of faults in Toaster & Sandwich maker</p> <p>11.1 Disassembling and Assembling of Toaster& Sandwich maker</p> <p>11.2 Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Electric Kettle</p> <p>11.2.1 Toaster does not work</p> <p>11.2.2 Fuse is burnt when Toaster switched on</p> <p>11.2.3 Toaster does not work automatically</p> <p>11.2.4 Sandwich maker does not work</p> <p>11.2.5 Fuse is burnt when Sandwich makers switched on</p> <p>11.2.6 Sandwich maker does not work automatically</p>
12	<p>Identification and remedies of faults in Blender Juicer/Grinder</p> <p>12.1 Disassembling and Assembling of Blender juicer/Grinder</p>



	<p>12.2 Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Blender juicer /Grinder</p> <p>12.2.1 Blender juicer/Grinder does not work</p> <p>12.2.2 Wiring problem or Flexible Cable is short</p> <p>12.2.3 Fuse is burnt when Blender juicer/Grinder switched on</p> <p>12.2.4 Blender juicer/Grinder motor does not work.</p> <p>12.2.5 Blender juicer/Grinder motor does not start without push (check and replace faulty parts)</p>
13	<p>Identification and remedies of faults in AC Electric Motor (Single Phase)</p> <p>13.1 Disassembling and Assembling of the AC Electric motor</p> <p>13.2 Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of AC Electric motor</p> <p>13.2.1 Replacing the bearing & winding of motor</p> <p>13.2.2 AC Electric motor gives electric shock</p> <p>13.2.3 Electric motor does not start without push (check and replace faulty parts)</p> <p>13.2.4 Motor is heated</p> <p>13.2.5 Motor gives sound while running</p>
14	<p>Identification and remedies of faults in Vacuum Cleaner</p> <p>14.1 Disassembling and Assembling of Vacuum Cleaner</p> <p>14.2 Fault diagnosis & Remedies (Testing, alignment, adjustments and replacement) of major component of Vacuum Cleaner</p> <p>14.2.1 Vacuum Cleaner does not work</p> <p>14.2.2 Replacing the faulty parts of Vacuum Cleaner</p> <p>14.2.3 Fuse is burnt when it is switched on Vacuum Cleaner</p> <p>14.2.4 Vacuum Cleaner does not work automatically</p>



SCHEME OF STUDIES**I.T. Fundamentals**

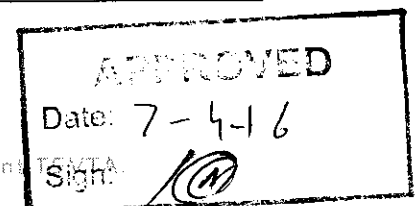
S.No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Introduction to Computers	2	6	8
2.	Typing - Microsoft Word	4	14	18
3.	Internet & Electronic Mail	2	12	14
Total		8	32	40

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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 and its functions</p> <p>1.4 Working with windows Operating System 1.4.1 How does windows desktops work? 1.4.2 Setting desktop, background and wall papers etc. 1.4.3 Viewing directories – List of files and folders different styles.</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>	2	6
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 Formatting in MS Word Bold, Italic, page setup, setting shades and colors.</p> <p>2.4 Working with saved work, opening and moving files.</p>	4	14

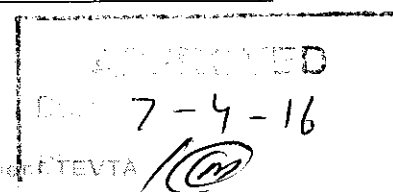


	2.5	How to get it printed?		
3	Emailing and Internet Surfing		2	12
	3.1	How to go to Internet, what is required for an internet connection etc.		
	3.2	How to use email? How to search on web? Etc		
	3.3	How to make new email account, login and logout an email account etc.?		
	3.4	Downloading and uploading attachments etc.		
Total			8	32

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Sign: 


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.	Setting the view of a folder
7.	Copying, Deleting and Moving Files in a folder
8.	Working with different Applications
9.	Opening MS Word for typing
10.	First lesson of Typing A S D F
11.	Second Lesson of typing J K L ;
12.	Third Lesson U I O P
13.	Fourth Lesson R E W Q
14.	Fifth Lesson N M , .
15.	Sixth Lesson V C X Z
16.	Seventh Lesson All letter using R index Finger
17.	Eighth Lesson All letter using L index Finger
18.	Formatting in MS Word Bold, Italic etc.
19.	Page Setting/ Page Layout
20.	Using Internet
21.	Opening Email, making new account
22.	Sending Receiving Emails
23.	Downloading and uploading attachments etc.




SCHEME OF STUDIES
Functional English

S.No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Use of past indefinite tense	2	6	8
2.	Use of 'was' 'were' ' questions and negatives	3	6	8
3.	Explaining a situations/ analysis	2	6	8
4.	Communication in writing	2	6	8
5.	Comprehension	1	6	7
6.	Application/ C.V.	1	6	7
7.	Dialogues	1	9	10
8.	Understand vocabulary	1	3	4
9.	Writing complaints/ answers to complaints	1	9	10
10.	Interviews	2	7	10
Total		16	64	80

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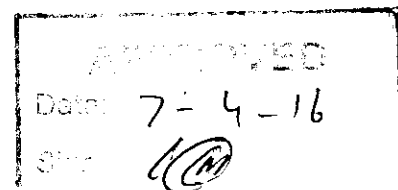
DETAIL OF COURSE CONTENTS
Functional English

S. No	Detail of Topics	Theory Hours	Practical Hours
1	Use of past indefinite tense 1.1 Describing past events	2	6
2	Use of 'was' 'were' ' questions and negatives	2	6
3	Explaining a situations/ analysis 3.1 Making a plan 3.2 Visiting factory area 3.3 Giving justifications	2	6
4	Communication in writing 4.1 Asking for list of stationery items 4.2 Submitting report of performance of team of technicians 4.3 Submitting joining report	2	6
5	Comprehension: practice sets	2	6
6	Job application/C.V.	1	6
7	Dialogues	1	9
8	Understand vocabulary	1	3
9	Writing complaints/ answers to complaints	1	9
10	Interviews	2	7
Total		16	64

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LIST OF PRACTICALS
Functional English

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



LIST OF LABS

Home Appliances Repair

- Electrical Lab / Workshop

I.T Fundamentals

- Computer Lab

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100

LIST OF MACHINERY / EQUIPMENT / TOOLS


(For a class of 25 students)

Name of Trade	Home Appliances Repair
Duration of Course	6-Months

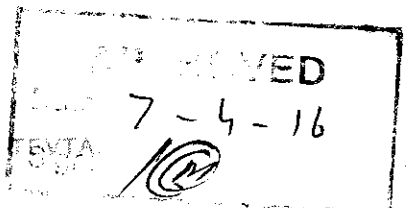
Sr. No.	Name of Tools & Equipment	Quantity (In Nos.)
1.	Combination Pliers (8")	25
2.	Wire Stripper	25
3.	Line Tester 7"	25
4.	Side Cutter Pliers (6')	25
5.	Long Nose Pliers Size (7')	25
6.	Hammer (300 gm.)	25
7.	Hammer (500 gm.)	05
8.	Measuring Tape (5 mg)	25
9.	Screw Driver Flat (8')	25
10.	Hacksaw Frame	10
11.	Hacksaw (Junior) Frame	02
12.	Bearing Puller (3 inch)	02
13.	Bearing Puller (4 inch)	02
14.	Allen Key Set (10 pieces)	2 Set
15.	Star kit set	10
16.	Sheet cutter (8 inch)	02
17.	Rubber Hammer	02
18.	Flat Chisel 12"	05
19.	Masonry Drill (No.10-12)	05

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20.	Screw Wrench (8')	02
21.	Screw Wrench (10')	02
22.	Scissor 6"	05
23.	Pipe Wrench (10')	02
24.	Screw Driver (4')	25
25.	Screw Driver (6')	25
26.	Screw Driver (12')	10
27.	Ring Spanner Set 6-32mm	02 Set
28.	Electric blower	02
29.	Grip Pliers	02
30.	Drill Set (01 to 13 mm)	02
31.	Washing Machine (Manual)	02
32.	Dryer (Manual)	02
33.	Dawlance Washing Machine (Automatic)	02
34.	Pedestal Fan (24')	05
35.	Ceiling Fan (56')	05
36.	Exhaust Fan (18') & Bracket Fan	05
37.	Electric Iron (National-Japan) (Automatic)	02
38.	Electric Iron (Steam)	02
39.	Electric Iron (National-Russian)	02
40.	Fan Heater	05
41.	Electric Heater	05
42.	Tong Tester (Clamp Meter)	01
43.	Multi Meter (AVO)	05
44.	Single Phase Energy Meter	02
45.	Wire Gauge	02



46.	Megger with Complete Accessories	01
47.	Electric Hammering Hand Drill Machine with chuck 0-13mm	01
48.	Electric Kettle-Local (Steel Body)	02
49.	Electric Kettle-Imported	02
50.	Ampere Meter 4" x 4" Panel Type	05
51.	Volt meter 4" x 4" Panel Type	05
52.	Electric Motor-1/4 HP (single phase)	02
53.	Electric Motor-1/2 HP (single phase)	02
54.	Electric Motor-1 HP (single phase)	02
55.	Vacuum Cleaner	01
56.	Hair Drier	02
57.	Electric Oven (Manual)	01
58.	Electric Oven (Automatic) Touch System	01
59.	Needle File Set	02
60.	Soldering Gun	02
61.	De Soldering Pump	05
62.	Socket Set Rechet Type (6-32mm)	02 Set
63.	Double open end Spanner Set 6-32mm	02 Set

FURNITURE

Sr. No	Name of Articles	Quantity
1.	Working bench	10 No's
2.	Wooden stool (for students)	20 No's
3.	Chair for teacher	02 No's
4.	White board (3 ½ x 5ft) with stand	01 No.
5.	Steel Almirah (4 x 7 ft)	04 No's
6.	Instructor table with 3 drawers	01 No.

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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

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CONSUMABLE MATERIALS**Home Appliances Repair**

S. No.	Nomenclature of Equipment / Tools	Quantity
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

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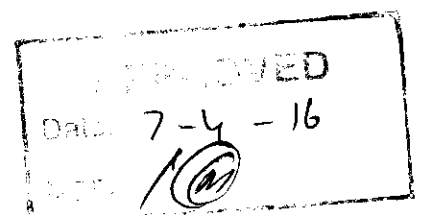
24.	Insulation Tape	2-doiz
25.	Tube Rod 40 watt	25 No's
26.	Tube Rod starter 40 watt	25- No's
27.	Motor capacitor (80/110 uf)	6- No's each
28.	Fuse(kit kat) 10 A	25- No's
29.	Fuse (cartridge types) 5A, 10 A	10 No's each
30.	Fluorescent Tube complete (set) - 40 watt	25- No's
31.	Fluorescent Tube complete (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
43.	Emery Paper (0,1,2,3)	10 Nos. Each

Functional English

S. No.	Item	Quantity
1.	Stationary	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. Electrical Appliances Repair Workshops
2. Industries
3. Hospitals.
4. Educational Institutes.
5. Offices.
6. Go downs.
7. Cinema Halls.
8. Electric stores
9. Hotels and restaurants.
10. Power Stations.
11. Railway Stations.

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REFERENCE BOOKS

Home Appliances Repair

1. Trainee Manual of House Hold Appliances Developed by;
Punjab Vocational Training Council
2. Electrical Supervisor By Mushtaq Mufti
3. Electrical Technology By Naeem Pervaiz Khokhar
4. Electrical Supervisor By Abdul Ghaffar

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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MINIMUM QUALIFICATION OF INSTRUCTOR

Home Appliances Repair

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

OR

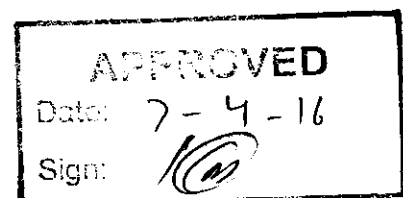
- Two years certificate of Electrician (G-II Level) with 6 years experience in the relevant field.

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	پیمانہ
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	الات	Scissor	قینچی
Faults	نقص	Screw Driver	پیچ کس
Files	رینی	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	ہتوڑا	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	ولٹیج
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	ٹٹمانا	Heating Element	حرارتی ایلیمینٹ
Ceiling Fan	چھت والہ پنکھا	House Hold Appliances	گھریلو آلات
Commutator	کاموٹیٹر	Juicer	جوس بنانے والی مشین
Construction	ساخت	Remedies	علاج
Diagnose	نشانہ می کرنا	Revolving System	گھومنے والا سسٹم
Direct Current	یکساں کرنٹ	Sandwich Maker	سینڈ وچ بنانے والی مشین
Dis Assembling	دوبارہ جوڑنا	Washing Machine	کیڑے دھونے والی مشین

APPROVED
Date: 7-4-16
Sg. (M)

Curriculum Revision Committee

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

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

7-4-16
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