

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

SKILL DEVELOPMENT CENTRE

“Certificate Course in Maintenance and Repairing of Domestic

Electric and Electronic Appliances”

Syllabus

Duration of course: 6 Month

Need of Course:

1. To improve your performance in each career
2. To acquire more advanced and better skills
3. It develops confidence along with basic information
4. Course feeds continuous need to upgrade the skills
5. You are exposed to not only the new and fresh ideas but it also keeps you updated with everything that is going in the area of interest

Employment and Entrepreneurship Opportunities from Course:

1. Can use the acquired skill to repair household appliances
2. Use his skill wherever he/she works
3. Can go for self-employment after experience
4. Can work as electrician
5. After sufficient experience, can work as supervisor

Tentative Fees: 1000/-

Minimum Admission Eligibility for Student: Studying in B. Sc. III (PHYSICS) Class

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SKILL DEVELOPMENT CENTRE

Syllabus Structure

Course Title: “Certificate Course in Maintenance and Repairing of Domestic Electric and Electronic Appliances”

Course Duration: 6 Months

Name of Skill Course	Duration	Name of Paper	Paper	Hours Per Paper	Th.	Int.	Pract.	Credits
Certificate Course in Maintenance and Repairing of Domestic Electric and Electronic Appliances	6 Months	BASICS OF ELECTRIC APPLIANCES	I	45	80	20	0	3 Credits
		ELECTRICAL APPLIANCES	II	45	80	20	0	3 Credits
		PRACTICALS ON TESTING AND REPAIRING OF DOMESTIC ELECTRIC AND ELECTRONIC APPLIANCES	III	45	0	0	100	3 Credits
		PROJECT ON TESTING AND REPAIRS OF ELECTRIC APPLIANCES	IV	45	0	0	100	3 Credits
Total				180	160	40	200	12 Credits

Abbreviations:

Th.- Theory Evaluation,

Int.- Internal Evaluation,

Pract.- Practical evaluation.

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Course Title: Certificate Course in Maintenance and Repairing of Domestic

Electric and Electronic Appliances

SYLLABUS Details

1)	Paper Title	BASICS OF ELECTRIC APPLIANCES	
2)	Paper No	I	
3)	Objectives of Paper	1. Understand basic knowledge about electric appliances	
		2. Gain skill of Choosing wires for installations	
		3. Study insulating materials	
		4. Know the winding wires	
		5. Basic electrical testing	
4)	Expected out comes from Paper	1. knowledge about basics of insulating materials	
		2. choice of insulating material and wires	
		3. winding of electric appliances	
		4. type of winding	
		5. skill of electrical testing	
5)	Content		
	Unit-1 INSULATING MATERIALS	A ELECTRICAL PROPERTIES B CLASSIFICATION OF INSULATING MATERIALS C CHARACTERISTICS OF A GOOD INSULATING MATERIAL D INSULATION MATERIALS E PLASTICS F INSULATING VARNISHES	9 Hour

	Unit-2 WINDING WIRE	A PROPERTIES OF CONDUCTORS B THE CHOICE OF A CONDUCTOR MATERIAL C ENAMELLED WIRE D GRADES OF COPPER ENAMELLED WINDING WIRES E PROPERTIES OF ENAMELLED WIRES F TYPES AND SHAPES OF WINDING WIRES G GAUGE PLATE	9 Hour
	Unit-3 WIRE WINDING	A DETAILS OF WINDING B DIFFERENT SHAPE OF SLOTS C SLOT INSULATION D COIL FORMATION E DIFFERENT TYPES OF WINDINGS	9 Hour
	Unit-4 REWINDING AND TESTING OF ELECTRIC MOTORS	A METHOD OF REWINDING B WINDING METHODS C TESTING OF ARMATURE D INSULATION RESISTANCE TEST E DROP TEST	9 Hour
	Unit-5 INSTRUMENTS AND TESTING	A VOLTAGE TESTER SCREW DRIVER B CONTINUITY TEST C INSULATION TESTING D MEASUREMENT OF POWER	9 Hour
6)	Reference Book	1 Instrumentation – Cooper 2 Basic electrical engineering – M. L. Anwani 3 Basic electrical engineering Vol. I, II, III, IV – B. I. Theraja 4 ELECTRICAL MACHINES AND APPLIANCES VOCATIONAL EDUCATION Higher Secondary - Second Year A Publication under Government of Tamil Nādu Distribution of Free Textbook Programme TAMIL NADU TEXTBOOK CORPORATION	

1)	Paper Title	ELECTRICAL APPLIANCES	
2)	Paper No	II	
3)	Objectives of Paper	1. Understand basic working electric appliances	
		2. Gain skill of handling electric and electronic appliances	
		3. Study repairing of electric and electronic appliances	
		4. Achieve skill of maintenance of electric and electronic appliances	
		5. Basic safety practices	
4)	Expected outcomes from Paper	1. Repair maintenance of the basic electrical and electronics appliances	
		2. Repair and maintenance of the electric iron and electric fan	
		3. Repair and maintenance of the electric heater and mixer	
		4. Able to do domestic wiring and maintenance	
		5. Handling of equipment and fault finding	
5)	Content		
	Unit-1 ELECTRICAL COOKING APPLIANCES	A ELECTRIC STOVE B ELECTRIC TOASTERS C TYPES OF ELECTRIC TOASTERS	9 Hour
	Unit-2 ELECTRIC IRON	A ELECTRIC IRON B TYPES OF IRON C NON-AUTOMATIC IRON BOX D AUTOMATIC IRON BOX E DIFFERENCES BETWEEN NON-AUTOMATIC AND AUTOMATIC IRON F STEAM IRON	9 Hour
	Unit-3 WATER HEATERS AND COFFEE MAKERS	A FUNCTION OF WATER HEATERS B TYPES OF WATER HEATERS C ELECTRIC KETTLE D IMMERSION WATER HEATERS E STORAGE WATER HEATERS (GEYSERS) F REPAIRS AND REMEDIES	9 Hour

		G FUNCTION OF COFFEE MAKER H TYPES OF COFFEE MAKER	
	Unit-4 ELECTRIC MIXER AND EGG BEATERS	A FUNCTION OF MIXIE B CONSTRUCTION, BLENDER AND GRINDER, BLADES, AND SPEED CONTROL C GENERAL OPERATING INSTRUCTIONS D CAUTIONS E CLEANING F REPAIRS AND REMEDIES G FUNCTION OF EGG BEATERS H DIFFERENT TYPES AND OPERATION	9 Hour
	Unit-5 ELECTRIC FANS	A ELECTRIC FANS B TYPES OF ELECTRIC FANS C MAINTENANCE AND REPAIRING OF ELECTRIC FANS	9 Hour
6)	Reference Book	1 Instrumentation – Sahani 2 Basic electrical engineering Vol. I, II, III, IV – P. P. Shah 3 Electrical Mechanics – V. K. Mehta 4 ELECTRICAL MACHINES AND APPLIANCES VOCATIONAL EDUCATION Higher Secondary - Second Year A Publication under Government of Tamil Nādu Distribution of Free Textbook Programme TAMIL NADU TEXTBOOK CORPORATION	

1)	Paper Title	PRACTICALS ON TESTING AND REPAIRING OF DOMESTIC ELECTRIC AND ELECTRONIC APPLIANCES
2)	Paper No	III
3)	Objectives of Paper	1. Study handling of electric equipment 2. Know electrical safety precautions 3. Study maintenance of appliances 4. Get knowledge of repairing of appliances 5. Basic electrical testing
4)	Expected outcomes from Paper	1. Knowledge of handling electric and electronic appliances 2. Understand replacing ruined parts 3. Understand regular maintenance of appliances 4. Understand fault finding and repairs 5. Acquire skill of electrical testing
5)	Content	
	Expt-1	1 Prepare a test lamp and testing
	Expt-2	2 Wire continuity testing and connection according to colour coding
	Expt-3	3 Actual earthing making and testing
	Expt-4	4 Replacement of fuse
	Expt-5	5 Study of electric Iron and automatic iron
	Expt-6	6 Replacement of automatic iron (Thermostat repairing)
	Expt-7	7 Geyser -Study of circuit diagram, fault finding and repairs, fitting
	Expt-8	8 Toaster - Study of different parts, repairing and testing
	Expt-9	9 Study of electric fan – maintenance and repairs
	Expt-10	10 Use of electric tester- checking of electric points
6)	Reference Books	1 Subodh Vidyutshatra – Trambak Waghmare 2 Electrical trade theory – Prakash Popatlal Shah

1)	Paper Title	PROJECT ON TESTING AND REPAIRS OF ELECTRIC APPLIANCES
2)	Paper No	IV
3)	Objectives of Paper	1. Study applications of basic laws in electricity 2. Understand electrical circuit working 3. Take care of safety precautions 4. Get knowledge of wire ratings and gauges and use 5. Electrical testing of appliances
4)	Expected outcomes from Paper	1. Knowledge of basic principles in electricity 2. Understand installing different parts of appliances 3. Understand working of appliances 4. Identifying use and ratings of different electric and electronic parts 5. Enhance skill of electrical testing
5)	Content	
	Expt-1	1 Prepare a test lamp and testing
	Expt-2	2 Wire continuity testing and connection according to colour coding
	Expt-3	3 Actual earthing making and testing
	Expt-4	4 Replacement of fuse
	Expt-5	5 Study of electric Iron and automatic iron
	Expt-6	6 Replacement of automatic iron (Thermostat repairing)
	Expt-7	7 Geyser -Study of circuit diagram, fault finding and repairs, fitting
	Expt-8	8 Toaster - Study of different parts, repairing and testing
	Expt-9	9 Study of electric fan – maintenance and repairs
	Expt-10	10 Use of electric tester- checking of electric points
6)	Reference Books	1 Subodh Vidyutshatra – Trambak Waghmare 2 Electrical trade theory – Prakash Popatlal Shah