Program : **Diploma in Electrical and Electronics Engineering**	
Course Code : **4038**	Course Title: **Domestic Appliances Repair And Maintenance Workshop**
Semester : **4**	Credits: **1.5**
Course Category: **Program Core**	
Periods per week: **3 (L: 0 T: 0 P:3)**	Periods per semester: **45**

Course Objectives:

- To familiarize with the working of various domestic appliances.
- To provide hands-on experience on the repair and maintenance of domestic appliances.

Course Prerequisites:

Topic	Course code	Course name	Semester
Basic knowledge of Electrical and Electronics circuits		Fundamentals of Electrical & ElectronicsEngineering Lab	2
Knowledge of basic electrical systems		Elementary Concepts Of Electrical Systems	2
Basic knowledge of electrical measurements		Electrical & Electronics Measurements &Instrumentation	3

Course Outcomes:

On completion of the course, the students will be able to:-

COn	Description	Duration (Hours)	Cognitive Level
CO1	Identify various components and recognize possible faults of domestic electric heating appliances	12	Applying
CO2	Identify various parts of ceiling fan and grinding appliances	9	Applying
CO3	Identify various parts of washing machines and electric pump set	9	Applying

CO4	Identify the procedure for installation of SMPS, inverter and UPS	9	Applying
	Lab Exam	6	

CO – PO Mapping

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1		2		3			
CO2		2		3			
CO3				3			
CO4				3			

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

Course Outline:

Module Outcome	Description	Duration (Hours)	Cognitive Level
CO1	**Identify various components and recognize possible faults of domestic electric heating appliances.**		
M1.01	Dismantle and identify various components in electric iron (manual and Automatic -with or without steam spray). Troubleshoot the given electric iron and prepare a maintenance chart.	6	Applying
M1.02	Dismantle and identify various components in Electric kettle and geysers. Identify the faults and prepare troubleshooting chart.	3	Applying
M1.03	Identify various components of an induction cooker, including controls, trace the circuit and rectify the simulated faults.	3	Applying

CO2	**Identify various parts of ceiling fan and grinding appliances.**		
M 2.01	Dismantle and identify various parts of ceiling fan or Table fan or BLDC Fan. Identify the starting and running winding and possible faults in ceiling fan/Table fan/BLDC fan.	6	Applying
M 2.02	Dismantle and identify various parts, wiring, tracing of various controls, Electronic circuits in various types of Mixers/grinders. Identify the faults in various types of Mixers/grinders & rectify the faults.	3	Applying
	Lab Exam 1	3	
CO3	**Identify various parts of washing machines and electric pumpset**		
M3.01	Summarize the installation procedures of Installation of washing machine. Identify the internal and external parts of an ordinary washing machine or semi or fully automatic. Recognize faults leading to malfunction of control panel switches, pulsator / agitator and spin dryer of semi-automatic washing machine.	6	Understanding
M3.02	Identify various components of the electric pump set. Method to change the direction of rotation. Testing of centrifugal switch in off position and working position. Testing of capacitor. Testing of windings (open circuit test, short circuit test and earth contact test).	3	Applying
CO4	**Identify the procedure for installation of SMPS, inverter and UPS**		
M4.01	Identify the procedures for Installation of UPS and Inverters. Dismantle and assemble Inverter and trace the wiring diagram. (Maintenance of batteries/ Charging, discharging and testing of batteries/Testing of major components).	6	Applying

M4.02	Identify the installation procedure of SMPS. Dismantle and assemble SMPS and trace the wiring diagram. Measure the rated output.	3	Applying
	Lab Exam II	3	

Text /Reference:

T/R	Book Title/Author
T1	Handbook of Repair and Maintenance of Domestic Electronics Appliances by Shashi Bhushan Sinha
T2	Electronic and Electrical Servicing: Level 2 by Ian Sinclair, Geoff Lewis
T3	Basic Electrical Engineering by M. L. Anwani, Publisher: Dhanpat Rai & Co.
R1	BL Theraja. Electrical technology. Vol I- IV: S Chand & co.

Online Resources:

Sl.No	Website Link
1	https://www.youtube.com/watch?v=nddAA5IAUik
2	https://www.youtube.com/watch?v=SsPy0WAbBEk
3	https://www.youtube.com/watch?v=6fTZgg3_llY
4	https://www.youtube.com/watch?v=3OZbYypefVQ
5	https://www.youtube.com/watch?v=QPd963cCeec
6	https://www.youtube.com/watch?v=nc-hhr1CXYE

Student Activity

Suggested Open-ended Experiments:

Students can do open ended experiments as a group of 3-5. There is no duplication in experiments in between groups. This is mainly for the purpose of continuous internal evaluation and a score of 15 marks. Students should prepare a separate report on open ended experiment of their choice.

Example:

Repairing of appliances comes in the repairing workshop andprepare the maintenance chart.