

DEPARTMENT OF PHYSICS
HENRY BAKER COLLEGE, MELUKAVU
Certificate Programme

Programme Code : **HBC/PHY/CP01/2019-20**

Title of the Programme : **Household Wiring and Equipment Servicing**

Name of the Faculty in Charge : **Dr. Prince Thomas**

Instructional Hours : **30 Hours**

SYLLABUS

Objective: To introduce the basic theories of house wiring, plumbing and maintenance of household equipment.

Course Outcome: Students are equipped to repair their household appliances and also able to identify their career objectives.

Module 1: Concept of basic electricity: Single phase & three phase circuits, Measurement of electrical quantities - voltage, currents, resistance, impedance, power factor and energy, Measuring current, voltage and resistance of single phase and three phase load. **(5 hours)**

Module 2: Safety : Introduction: Evolution of modern safety concept- Safety policy - Safety Organization - line and staff functions for safety- Safety Committee- budgeting for safety. **(5 hours)**

Module 3: Tools: Knowledge of tools required for marking, punching, cutting, drilling, filing, stripping, crimping, socketing and fixing glands & screws etc., Knowledge of measuring tools, wire gauges measuring tape, hammer, screwdriver, pliers, chisels, hack saw, vice, centre punch, Allen keys, mallet, try square, wrenches, scribes, spanners. Angular measurements- sine bar, angle gauges, levels, clinometers, taper gauges **(5 hours)**

Module 4: Classification and identification of the electrical equipment: Cables, wires and electrical accessories used in industry, Studies of diagram and symbols used in basic electrical circuits, wiring & installations, Different types of wires and conductors, Load carrying capacity. Knowledge of bulbs, fans, tube light, heater, calling bell etc. Test and repair the given ceiling fan, table fan, electric iron & geyser, mixer, tube light etc. **(8 hours)**

Module 5: Plumbing : Different types of tools and equipment's used in plumbing work. Cutting / Threading / Bending of G.I. and PVC Pipes, Use of hand tools, knowledge of various types of pipes with colour code and selection of pipe as per work specific uses, Pipe fittings, methods of joint. Types of pipe and fittings, Handling and lifting sanitary fixtures. Working principles of water pump and foot valve. **(7 hours)**

References

1. Brian Scaddan, *Electric Wiring for Domestic Installers*. Routledge, 2019.
2. Ray C. Mullin, Phil Simmons. *Electrical Wiring Residential*, Cengage Learning, 2014
3. *Black & Decker's The Complete Guide to Plumbing*, Editor: Mark Johanson, Quarto Publishing Group, 2015,, Ansari Road, New Delhi, 110002