

ELECTRICIAN COURSE

SYLLABUS

Duration: 12 Months

Comprehensive Technical Training & Maintenance Program

Course Overview

This comprehensive 12-month technical certification program is designed to equip students with fundamental to advanced skills in electrical installation, structural wiring, apparatus maintenance, and safety protocols. Balancing deep theoretical knowledge with extensive hands-on practical training, this course prepares candidates for industrial, commercial, and residential electrical roles.

Category:	Technical & Vocational Course	Core Focus:	Wiring, Motors, Safety & Maintenance
Duration:	12 Months	Training Mode:	Theory + Rigorous Practical Lab Work

Curriculum Breakdown

Module 1: Occupational Safety & Fundamental Concepts (Months 1 - 3)

- **Safety Protocols:** Personal Protective Equipment (PPE), first-aid response, electrical shock treatment, and fire safety regulations.
- **Hand Tools & Equipment:** Proper utilization and maintenance of pliers, wire strippers, testers, multimeters, and soldering irons.
- **Basic Electricity:** Fundamental properties of AC/DC supply, Ohms law, Kirchhoff's laws, resistance, voltage, current, and circuit networks.
- **Earthing & Grounding:** Principles of earthing, installation of pipe and plate earthing systems, and moisture maintenance.

Module 2: Domestic Wiring & Circuit Installation (Months 4 - 6)

- **Wiring Systems:** Detailed study of Cleat, Casing-Capping, CTS/TRS, and Conduit wiring methods (surface & concealed).
- **Electrical Accessories:** Switches, fuses, MCBs, ELCBs, RCCBs, sockets, and distribution boards routing.
- **Blueprint Reading:** Interpreting residential electrical layouts, circuit diagrams, and symbol configurations.
- **Practical Application:** Full execution of a multi-room house wiring system loop, staircase lighting, and inverter connectivity.

Module 3: Electrical Machinery & Motors (Months 7 - 9)

- **DC Machines:** Working principles, construction, and troubleshooting of DC generators and DC motors.
- **AC Machinery:** Detailed training on Single-phase and Three-phase induction motors, alternators, and synchronous motors.
- **Motor Starters:** Installation, wiring, and maintenance of DOL (Direct-On-Line) starters, Star-Delta starters, and auto-transformers.
- **Transformers:** Core assembly, winding techniques, cooling systems, insulation testing, and open/short-circuit diagnostics.

Module 4: Industrial Control, Appliances & Troubleshooting (Months 10 - 12)

- **Industrial Control Panels:** Layout design, bus-bar installation, control accessories, and relay indicators.
- **Domestic Appliances:** Maintenance and repair of electric irons, geysers, mixers, washing machines, and ceiling fans.
- **Illumination Systems:** Wiring and installation of modern LED panels, sodium vapor lamps, neon signs, and decorative lighting.
- **Final Evaluation & Project Work:** Comprehensive testing, live panel diagnostic project, and industry field placement assessment.

Key Learning Outcomes & Practical Features

- Complete mastery over industrial and domestic circuit wiring with real-world lab drills.
- Hands-on familiarity with handling advanced diagnostic equipment including digital multimeters, megger insulation testers, and clamp meters.
- Industry-recognized certification enabling eligibility for authorized Electrician Licensure examinations.