

Solar Installation Training Syllabus

Basic Class (Duration: 3 Weeks)

Week 1: Understanding Solar Energy Fundamentals

- Why solar is the future
- How electricity is generated from sunlight
- Components of a solar system

Week 2: Types of Solar Power Systems

- Solar-only systems
- Inverter and battery systems
- Hybrid solar systems
- Grid-tied vs. off-grid systems

Week 3: Making Smart Solar Decisions

- Common misconceptions about solar
- Common mistakes people make when buying solar equipment
- Understanding the basics of solar sizing

Master Class Syllabus

Duration: 10 Weeks.

Module 1: Introduction to Solar Technology

- Renewable energy and PV principles
- Components, advantages, limitations

Module 2: Classes of Installations

- Solar system
- Solar inverter and battery system
- Inverter battery system
- Grid tied, off grid, hybrid

Module 3: Solar Panels

- Types, sizes, ratings, series/parallel connections, practical wiring.

Module 4: Solar Batteries

- Battery types, capacity, series/parallel connections, testing.

Module 5: Charge Controllers

- PWM, MPPT, sizing, wiring, programming.

Module 6: Inverters

- Types, voltage, capacity, sizing, setup.

Module 7: Changeover Connection

- Manual and ATS wiring.

Module 8: Installation Materials and Tools

- Cables, breakers, MC4, SPDs, mounting hardware, meters, tools.

Module 9: Safety Precautions

- PPE, electrical safety, battery safety, earthing, fire prevention.

Module 10: System Design and Sizing

- Load assessment, panel, battery, inverter, controller and cable sizing.

Module 11: Practical Installation

- Complete installation, and testing demo

Module 12: Troubleshooting and Maintenance

- Fault diagnosis, maintenance and customer guidance.

Assessment: Written test, practical installation, sizing exercise.

- Learning Outcomes: Design, install, commission and troubleshoot residential solar systems safely.