Rooftop Solar PV System

Target Students: 3rd Year [5th Semester / 6th Semester] Total Hours: 30

✓ Skill Lab Course Objectives: The learners will be able to,

- CO1. Understand and design of Solar PV system.
- CO2. Design and simulation of Balance of system
- CO3. Understand the installations and applications of Solar PV system.

✓ Collaborative Teaching - Learning Process:

- PowerPoint Presentation, Chalk & Talk, Videos and Hands-on sessions.

✓ Skill Lab Course Content:

- Module-1 (5 Hours)

  Load requirement calculations (1kw.2kw), Solar panel requirement analysis, Design of Solar PV cell, Panel and array. identification of material used in PV cell construction. (monocrystalline type and polycrystalline type)
- Module-2 (10 Hours)

  Design consideration of Inverters, Balance of Solar PV systems: Batteries for PV Systems, dc-dc converters, charge controllers. DC-AC converters, maximum power point tracking using Matlab SIMULINK
- Module-3 (15 Hours)

  Solar PV Installations: Rooftop, Standalone PV systems, design methodology of PV system , wiring sizing calculation in PV, precise sizing of PV system, grid connected PV system, life cycle costing, simple pay-back period.

✓ Skill Lab Course Assessment:

- Mini Project on Rooftop Solar PV Plant
- Report submission

✓ Skill Lab Course Instructor: Prof. Nandaraja S H, Assistant Professor, EEE Dept, JCE, Belagavi.