### **Training Objectives: -**

This is a skill oriented course in the study of solar photovoltaic (PV) cells, modules, and system components; electrical circuits; PV system design and sizing for use on homes, commercial building etc., understanding energy conversion from sunlight to electricity, and working with solar conversion equipment. This Course will give students the book knowledge and hands on experience needed to become entrepreneur / self employed

Duration: 4 WEEKS

Fee : RS. 5000/- plus Service Tax

Eligibility: Diploma/Any Graduates (All Streams)

#### **Accommodation:**

Hostel accommodation is available for Male candidates only.

#### **Course Goal**

Upon completion of this course, the student will be able to:

- Demonstrate knowledge of and apply key solar electric system terms and concepts
- Size and design a photovoltaic system
- Mount, ground, position, install, wire and connect a photovoltaic system
- Test voltage generated by photovoltaic system
- Operate & Maintain of Solar Power Plant

Start Date : 15-06-2015 Finishing Date : 10-07-2015

## **Course Contents (Syllabus of Training)**

## **Basics of Electricity**

Voltage, Current, DC and AC Power. Measurement of Electrical Quantities.

#### **Introduction to Solar Photovoltaic Energy**

Solar Radiation Energy, Estimating Energy requirement Solar Photovoltaic conversion.

#### **Solar Photovoltaic**

Solar Cell, Solar PV module, Solar PV Module Arrays.

#### **Batteries**

Types of Batteries, Battery parameters, How to select Battery, Batteries for Photo voltaic System, Application of Batteries in Solar PV system.

## **Charge Controller , MPPT and Inverter**

AC to DC Converter, DC to AC Converter, DC to DC power converter, Charge controller, Maximum Power Point Tracking

# **Solar PV System Design and Integration**

Types of Solar PV System, Design methodology for SPV system., Wires & Cables, Mechanical structure Design

# **Installing, Trouble Shooting and Safety**

Installation and Trouble shooting of Standalone Solar PV System, Solar Street Light, Solar Lantern, Maintenance of Solar PV System, Safety in installation of Solar PV System, Electrical Audit.

# **Project**

Installation and Trouble shooting of 5KWp Solar Power Plant. Solar PV Plant Installation Check list

#### **CONTACT FOR INFORMATION:**

C. MOHAN,
Joint Director
mohan@nielit.gov.in

# "Solar Power Installation, Operation and Maintenance"





राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान, गोरखपुर

National Institute of Electronics and Information Technology (NIELIT) Gorakhpur

An Autonomous Scientific Society of Ministry of Communication & Information Technology,

Department of Electronics & Information Technology (DeitY)
Govt. of India

M. M. M. University of Technology, Gorakhpur U.P.– 273010, Web: <a href="https://www.nielitgkp.edu.in">www.nielitgkp.edu.in</a>