राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान, चेन्नई
National Institute of Electronics & Information Technology, Chennai

Ministry of Electronics & Information Technology
Government of India

नेशनल इंस्टीट्यूट ऑफ इलेक्ट्रॉनिक्स एंड इंफॉर्मेशन टेक्नोलॉजी, चेन्नई
National Institute of Electronics and Information Technology, Chennai

Autonomous Scientific Society of Ministry of Electronics & Information Technology (MeitY), Govt. of India

ISTE Complex, 25, Gandhi Mandapam Road, Chennai - 600025

Course Prospectus

Online Certificate Course on Solar Power Installation, Operation and Maintenance

(NSQF Level-4)

Mode: ONLINE (Blended)

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Course Prospectus

Name of the Group: Embedded System

Course Name: Online Certificate course on Solar Power Installation, Operation &

Maintenance (Blended)

Course Code: AE200

NCVET Code: 2021/EHW/NIELIT/04218

NSQF Level: 04

Duration: 80 Hours, 2 Weeks

Last Date of Registration: 30-11-2021

Course Start Date: 06-12-2021

Fee Details:

Registration Fee- Rs. 1,000/- (Refundable for SC/ST*)

Tuition Fee- Rs.3,900/-(No Fee for SC/ST*)

Preamble:

Solar energy is one of the best forms of alternative energy sources as it is pollution free and available in abundance in nature. It can cater for various power supply requirements upto a great extent and it is the need of the hour. Solar panel which is the basic building block for obtaining power supply through solar cells has a wide range of applications.

Increase in the environmental pollution need of solar energy market also increased, the demand for parabolic troughs and solar power towers in electricity generation is expected to boost the demand for concentrated solar power systems. The reports indicating the market size and future growth potential of the market across different segments, such as solutions, services, applications, verticals, and regions. With the increasing adoption of green energy and smart cities initiatives, the demand for smart solar solutions has grown tremendously across all the countries.

Increasing the global solar energy market, the need of professional to install solar systems, electrical wiring, battery and inverters is increased the need of PV installers / Technician. So this course is focusing on the skills need for solar power Installation, Operation and Maintenance.

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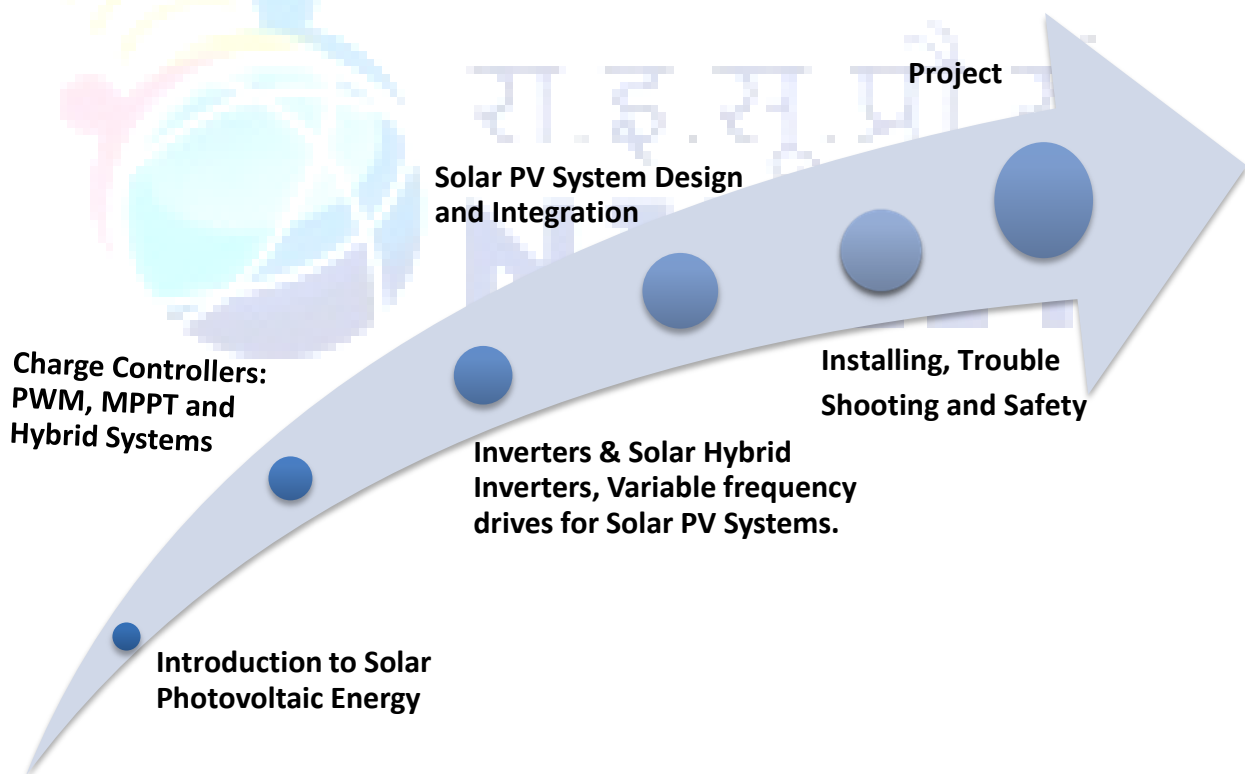
Objective of the Course:

       To develop the skillset required for the students/professionals to work in solar power Installation, Operation and Maintenance.

Outcome of the Course:

After successful completion of this Course, students will be able to:

- Understand the construction & working of solar panel
- learn to plan or sizing the panel according to the load
- Understand the working of inverter and charge controller
- learn to connect the various Components involved in the solar home system
- Hands on exposure in solar panel installation

Full Flow of Course

Project

Solar PV System Design and Integration

Charge Controllers: PWM, MPPT and Hybrid Systems

Installing, Trouble Shooting and Safety

Inverters & Solar Hybrid Inverters, Variable frequency drives for Solar PV Systems.

Introduction to Solar Photovoltaic Energy

Course Structure

This course contains totally six modules. After completing the first five modules, the students have to do 15Hrs of project using any of the topics studied to earn the Solar Power Installation, Operation and Maintenance certificate; you can find the detailed syllabus by viewing the following URL (Solar Power Installation syllabus.pdf)

Module Code	Module Name	Duration(in Hours)
AE 201	Introduction to Solar Photovoltaic Energy	08
AE 202	Charge Controllers: PWM, MPPT and Hybrid Systems	14
AE 203	Inverters & Solar Hybrid Inverters, Variable frequency drives for Solar PV Systems.	06
AE 204	Solar PV System Design and Integration	16
AE 205	Installing, Trouble Shooting and Safety	21
AE 206	Project Work	15
Total Duration		80

Course Fees:

Registration Fee- Rs.1000/- (Refundable for SC/ST*)

Tuition Fee- Rs.3,900/- (No Fee for SC/ST*)

Course fee is Rs. 4,900/- Including GST.

Registration Fee	Rs. 1000/- for SC-ST (refundable *)	Rs. 1000/- for others (Adjustable with Total fee)	
Instalment No.	SC-ST Candidates (Fee including GST in Rs.)	General Candidates (Fee including GST in Rs.)	Last Date
1	*	3,900.00	03-12-21
Total	*	4,900.00	
* Registration fee is refundable and Tuition Fees are waived for eligible SC/ST students who are successfully completing the course with NSQF certification under SCSP/TSP scheme			

GST is Applicable as per Govt. Norms GST (currently it is 18%).

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Apart from above fee, following fee to be paid by all selected candidates (excluding SC-ST candidates) directly while applying for NSQF registration and NSQF examination:

1. *NSQF Examination fee of Rs.800/- while registering for examination*

Registration Fee- Refund policy.

(**Non-Refundable if candidate is selected for admission but did not join and if a candidate has applied but not eligible.**)

However, the above registration fee shall be refunded on few special cases as given below

- ✓ Candidates are eligible but not selected for admission.
- ✓ Course postponed and new date is not convenient for the student.
- ✓ Course cancelled.

Eligibility

- ✓ 10 +2, Diploma/Any Graduates, Minimum age -18 years

Number of Seats: 30 – Total

Category	No. of Seats
SC (15%)	4
ST (7.5%)	2
GENERAL	24
Total	**30**

Note: Seats are allocated based on the merit of the Qualification.

How to Apply?

Candidates can apply online in our website http://reg.nielitchennai.edu.in. Payment towards non-refundable registration fee can be paid through any of the following modes:

- ✓ Online transaction: Account Name: NIELIT CHENNAI, Account No: 31185720641, Bank name: State Bank of India (SBI), Branch: Kottur (Chennai), IFSC Code: SBIN0001669.
- ✓ Pay through UPI Mobile Apps

Note: *The Institute will not be responsible for any mistakes done by either the bank concerned or by the depositor while remitting the amount into our account*

Last date of Registration: 30th November, 2021

Registration Procedure

All interested candidates are required to fill the Registration form online with registration fees before **30th November, 2021** all the necessary information.

Selection Criteria of candidates

Selection is based on the first come basis (subject to fulfilling the eligibility criteria).

- ✓ The first list of Provisionally Selected Candidates will be published on NIELIT Chennai website (www.nielit.gov.in/chennai) on **01-12-2021** by **5:00 PM**. In case of vacancy, an additional selection list will be prepared and the selection will be intimated by email only.
- ✓ Provisionally selected candidate has to upload their document on registration portal for online verification.

- ✓ **For SC/ST :**
  - Copies of Proof of Age, Qualifying Degree (Consolidated Mark sheet & Degree Certificate/Course Completion Certificate), 10th and 12th mark sheets.
  - Self-attested copy of community certificate.
  - AADHAR Identity proof must for SC/ST Candidates (For availing concession).
  - One passport size photograph.

- ✓ **For Others (General, OBC, EWS) :**
  - Copies of Proof of Age, Qualifying Degree (Consolidated Mark sheet & Degree Certificate/Course Completion Certificate), 10th and 12th mark sheet.
  - One passport size photograph.
  - Self-attested copy of Govt. issued photo ID card

- ✓ After document verification, selected candidates (other than SC-ST) have to pay **Rs. *3,900/-*** or as applicable on or before **03-12-2021** by payment mode mentioned above. Selected candidates are requested to upload the proof of remittance of fee on registration portal and also send the proof of remittance of fee as email to prabu@nielitchennai.edu.in.

Admission: All provisionally selected candidates whose documents are verified and paid the fees (full or first instalment) and verified by accounts section of NIELIT Chennai will get a welcome message in his/her login ID provided during registration. The Credential and URL for online portal will be shared through WhatsApp or email.

Discontinuing the course

✓ No fees (including the security deposit) under any circumstances, shall be refunded in the event of a student who have completed the process of admission or discontinuing the course in between. No certificate shall be issued for the classes attended. Only Grade Sheet will be issued.

✓ If candidates ate not uploading the assignments within assigned time their candidature will be cancelled without any notice and all fees paid will be forfeited.

✓ If candidates ate not appearing for any internal examinations/practical their candidature will be cancelled without any notice and all fees paid will be forfeited

Course Timings:

This program is a practical oriented one and hence there shall be more lab than theory classes. The cloud based online theory classes will be on forenoon and lab session will be conducted on afternoon time.

Address:

> **National of Electronics and Information Technology**
>
> **ISTE Complex, No. 25, Gandhi Mandapam Road, Chennai – 600025**
>
> **E-mail: prabu@nielitchennai.edu.in/Phone: 044-24421445**
>
> **Contact Person: Mr. K.Prabu,   Mobile: 9717611621 (Call @ 9 AM to 6 PM)**

Course enquiries

Students can enquire about the various courses either on telephone or by personal contact between 9.15 A.M. to 5.15 P.M. (Lunch time 1.00 pm to 1.30 pm) Monday to Friday.

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Important Dates

Last Date of Registration: 30-11-2021

Display of Provisional Selection List: 01-12-2021

Last Date to pay fee: 03-12-2021

Course Start Date: 06-12-2021

Examination & Certification

✓ Certification Body: Examination Section, NIELIT Head Quarter.

✓ Solar Power Installation, Operation and Maintenance Certificates will be issued after successful completion of all the modules including assignment, seminar and project.

✓ For getting Solar Power Installation, Operation and Maintenance Certificate a candidate has to pass the NSQF Exam with minimum required marks of 50%.

Grading Scheme

✓ Following Grading Scheme (on the basis of total marks) will be followed:

Grade	S	A	B	C	D	E	Fail
Marks Range (in %)	>90%	80%-89%	70%-79%	60%-69%	50%-59%	40-49%	<40%

✓ Final Grading as per above grading scheme will be given on the basis of total marks obtained in NSQF Exam. For last module (AE206) grade will be given on the basis of project demonstration.

NSQF Examination Pattern:

Theory (Each Question will carry 1 mark) Duration (in Min): 90		Practical			Internal Assessment (Marks)	Project/ Presentation/ Assignment (Marks)	Total
Papers	Marks / Paper	Papers	Durati on (in Min)	Marks/ Paper			
1	100	1	120	60	20	20	200