

## “GRID CONNECTED AND STAND-ALONE PHOTOVOLTAIC SYSTEMS”

UNIVERSITAT POLITÈCNICA DE VALÈNCIA – SPAIN



### COURSE DESCRIPTION:

The main objective of the online course **Grid Connected, and Stand-Alone Photovoltaic Systems** is to introduce the student in the use of photovoltaic energy in the generation of electrical energy for isolated applications (off-grid PV systems) or connected to the mains power supply (grid-tied PV systems). This course is organized as a modular course of 6 ECTS that is structured in two main parts:

- ✓ Modules 1: Grid-connected photovoltaic systems.
- ✓ Module 2: Stand-alone photovoltaic systems

**The first block** of the course begins with the description of the elements common to all photovoltaic installations (photovoltaic modules, electronic converters, solar radiation and structures). Subsequently, the following contents are developed:

- ✓ Elements and topologies of photovoltaic systems for connection to the AC power network.
- ✓ Factors that affect the energy production of the installation.

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- ✓ Grid-connected photovoltaic inverters.
- ✓ Design of photovoltaic systems with crystalline silicon modules and thin-film modules: selection of modules and inverters, wiring, protections, etc.
- ✓ Technical regulations on photovoltaic power systems.

**The second block** of the course refers to stand-alone photovoltaic installations (off-grid PV installations).

The following contents are developed in this module:

- ✓ Elements and topologies of stand-alone photovoltaic systems.
- ✓ PWM and MPPT charge controllers, batteries and photovoltaic inverters for off-grid installations.
- ✓ Design of stand-alone photovoltaic systems operating with a DC bus, including the selection of photovoltaic modules, charge controller, PV field configuration, inverter, wiring, protections, etc.
- ✓ Study of the worst month of design of a photovoltaic stand-alone system using solar radiation data in the location of the installation and energy demand of consumptions.
- ✓ Photovoltaic water pumping systems.

*Note: The training materials include Acrobat files, Excel, and Word; multimedia files; proposed and solved problems and projects to develop. All the information is in English.*



### **APPLICANT'S PROFILE:**

Engineers specialized in different fields related to photovoltaic systems (industrial, electronics, electric, mechanical, civil, environmental, etc.), architects, physics, and professionals working on the field of renewable energies.



### **DATE, PLACE, & COURSE MODALITY:**

This online course will be taught in English from **April 24 to November 30, 2023**. It will have a working load of 4 hours per week and can be completed in less than 15 weeks.

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### SCHOLARSHIP'S BENEFITS:

- ✓ Number of scholarships: **30 scholarships.**
- ✓ 100% of Course tuition fee (Cost per scholarship recipient: USD \$360)
- ✓ Study materials.
- ✓ Course Certificate issued by Universitat Politècnica de València.



### SHOLARSHIP OVERVIEW

<b>MODALITY</b>	Online
<b>DATES</b>	<b>April 24 to November 30, 2023</b>
<b>LANGUAGE OF INSTRUCTION</b>	English
<b>BENEFITS</b>	100% of Course tuition fee Study materials Course Certificate issued by Universitat Politècnica de València upon completion of the course and passing the tests and quizzes.
<b><u>DEADLINE</u> TO SUBMIT APPLICATIONS BEFORE <u>ONE</u></b>	Please contact the <a href="#">ONE</a> in your country



### ELEGIBILITY:

- ✓ Be a citizen or a legal permanent resident of any OAS Member states.
- ✓ Have a Bachelor's Degree (or higher) at the time of applying for the scholarship.
- ✓ Have a certificate of language proficiency (if your native language is not English)

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- ✓ Comply with all the steps of the scholarship application process as well as with the required documents.
- ✓ Be in good health condition to complete the course requirements.

The OAS will consider **ineligible** application submitted by:

- × Current OAS scholarship recipients.
- × OAS Staff/Consultants and immediate relatives.
- × Staff of the Permanent Missions to the OAS and their immediate relatives.



## **APPLICATION PROCESS:**

### **STEP 1: GATHER AND SCAN REQUIRED DOCUMENTS:**

- ✓ Bachelor's Degree (or higher) Diploma
- ✓ One (1) letter of recommendation from the employer, institution or organization to which you belong. It must be signed and addressed to the Professional Development Scholarship Program of the OAS, Department of Human Development, Education and Employment.
- ✓ Undocumented resume or curriculum vitae (Maximum 2 pages).
- ✓ Copy of ID or Passport.
- ✓ Certificate of language proficiency (if your native language is not English).

**IMPORTANT:** Scan in black and white all the required documents [see above] in one single PDF file.  
The file should not weight more than 3MB

**Incomplete Applications will not be considered by the OAS!**

### **STEP 2: SUBMIT ONLINE APPLICATION FORM**

- ✓ Complete the [ONLINE APPLICATION FORM](#)
- ✓ Upload the PDF File with all documents gathered in Step 1.
- ✓ After submitting your application form, you will receive a confirmation email and a PDF document with the application you just submitted. Please make sure to check your inbox and the junk mail tray.
- ✓ Print your application form.

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### **STEP 3: SUBMIT APPLICATION TO YOUR ONE**

- ✓ Interested applicants must apply through the [National Liaison Office \(ONE\)](#) in their respective countries. Each ONE will pre-select candidates and send a final list to the OAS.
- ✓ Submit before ONE the required documents and the online application form (See steps 1 and 2).

**IMPORTANT:** Remember to contact your country's [ONE](#) in advance to ask about the [deadline](#) to apply for this scholarship opportunity. The ONE will do a pre-selection (short-list) of candidates, therefore, make sure to send them all the documents required, both by the OAS and the ONE.

**IMPORTANT NOTE only for citizens of [United States](#), and [Venezuela](#):** the OAS serves as [ONE](#) for citizens and permanent residents of United States and Venezuela, therefore, filling out the online application and attaching the supporting documents ends the process of request. There is no need to submit paper documents.



### **SELECTION CRITERIA:**

- ✓ Academic merits and work experience related to the subject of the course.
- ✓ Essays that better describe how obtaining the scholarship will positively impact the applicant's country of origin.
- ✓ An extensive and equitable geographic distribution for the benefit of all member states and that takes into account the greater needs of the smaller and relatively less developed economies.



### **RESPONSIBILITIES OF THE SCHOLARSHIP RECIPIENT:**

- ✓ Selected Candidates must officially accept the scholarship by completing and signing the OAS

#### **Scholarship Acceptance Form.**

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- ✓ The Scholarship Recipient is required to complete the course according with standards of the host institution.
- ✓ The Scholarship Recipient shall fill in a course evaluation questionnaire which will be provided upon completion of the course.
- ✓ The Scholarship Recipient cannot abandon the Program upon formally accepting the scholarship.
- ✓ Except in those cases where, for unforeseeable reasons the Scholarship Recipient cannot start or continue the course, she/he must immediately notify the OAS in writing of the reasons for her/his resignation. It will be at the discretion of the OAS to determine the validity of the case.
- ✓ In the event that the OAS concludes that the reasons indicated by the Scholarship Recipient do not duly justify the withdrawal from the Study Program, the Scholar will reimburse directly to the OAS and / or the Institution the scholarship funds. Failure to do so, the Scholarship Recipient will be considered ineligible for future scholarships from the OAS or the Institution and it will constitute a reason for the OAS to undertake legal actions.



## RESULTS

The OAS will publish the results on its website [www.oas.org/becas](http://www.oas.org/becas) one or two weeks before the beginning of the course. The OAS will only contact candidates who have been selected.



## CONTACT INFORMATION

- ✓ For **course** information visit <https://www.cursofotovoltaica.com/introduction-to-photovoltaic/> or contact with [fotovoltaica@upv.es](mailto:fotovoltaica@upv.es)
- ✓ For **scholarship** information contact: [scholarships@oas.org](mailto:scholarships@oas.org)

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