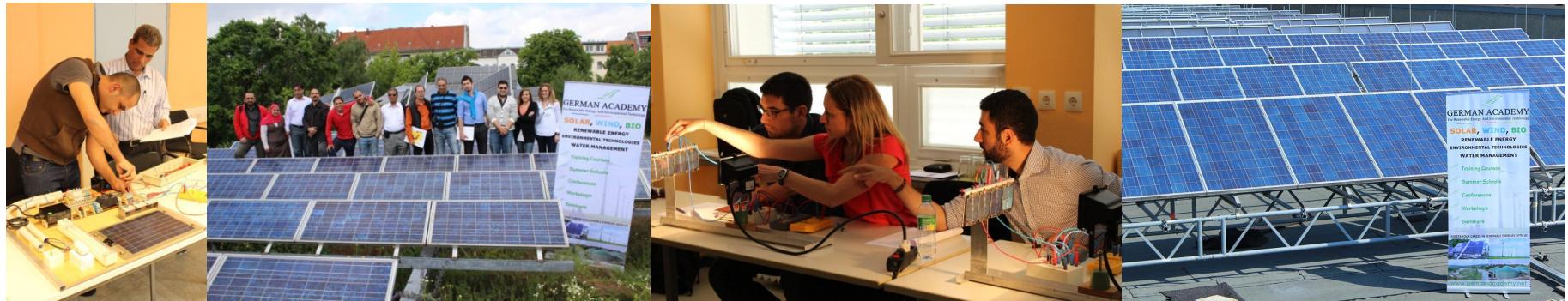


## Course: " Photovoltaic Tech (Solar Electric)"

April 25<sup>th</sup> – 30<sup>th</sup>, 2016 – Berlin, Germany

### Content

This 5 day seminar offers an in-depth insight into "Photovoltaic (Solar Electric)" and provides lectures on the design and functioning of Grid-connected and off-grid Photovoltaics, solar cells and inverters, planning of photovoltaic systems, and location and shading of panels, as well as the Storage Types and characteristics. Storage Technology is one of the most important aspects for the development of renewable energy, especially in developing countries. During the practical part of the seminar, participants will learn how to install a photovoltaic system. Finally, participants will have the opportunity to visit a PV-solar plant and take part in a sightseeing tour through Berlin.





## Schedule:

Sun, 24 April	Arrival: Hotel / Accommodation & Welcome and kick-off meeting	
*Mon, 25 April	<b>Solar energy fundamentals</b> <ul style="list-style-type: none"> <li>The Solar Resource</li> <li>Performance parameters of Photovoltaics, irradiance, spectrum, temperature, location and shadowing</li> <li>PV Markets</li> </ul>	
Tue, 26 April	<b>Photovoltaic technologies</b> <ul style="list-style-type: none"> <li>Solar Cell-Technologies</li> <li>Function of solar cells, characteristic data</li> <li>From cell to module</li> <li>Related electrical circuitry</li> <li>Energy output of solar PV systems</li> </ul>	
Wed, 27 April	<b>Types of Solar Energy Systems and components</b> <ul style="list-style-type: none"> <li>Standalone system</li> <li>Grid-tied systems</li> <li>Planning, design and installation of PV System</li> </ul> <b>Properties and technique of modules characteristic curves.</b> <ul style="list-style-type: none"> <li>I-V-Curve characteristics of PV-Modules (Theory)</li> <li>I-V-Curve characteristics of PV-Modules (Exercise)</li> </ul>	
Thu, 28 April	<b>PV-System installation practice</b>	
Fri, 29 April	<b>Excursion to a PV power plant and interview with the operator/or visit to solar company</b> <b>- Certificates -</b>	
Sat, 30 April	<b>Optional: sight-seeing tour of Berlin</b> Visit the breath-taking attractions of the German capital and enjoy its multicultural environment.	
Sun, 01 May	<b>Departure</b>	

## What you'll learn

- The course will teach participants the technologies that convert solar energy into electricity
- The physical working principles of photovoltaic conversion in solar cells
- How to recognize and describe the various solar cell technologies, their current status and future technological challenges
- How to analyze the performance of solar cells and modules
- How to design a complete PV system

## Venue

German Academy's classroom at Charlottenburg Town Hall (Rathaus Charlottenburg)

## Target Group

Professionals, engineers, technicians and students with a background in power, mechanical engineering or related areas, as well as investors and educators in the field of renewable energies or public and academic sectors who wish to get a comprehensive introduction to PV technologies and those who wish to install PV systems in both urban and rural areas.

## Certificate

A certificate will be awarded to participants upon completion (participants must have attended at least 90% of the programme).

## Registration Procedure

For registration, please fill out the attached form and send it to us along with your updated CV to the address located under the *Registration and Contact Information* section. Please specify that you wish to join our *Course "Photovoltaic Tech (Solar Electric)" April 25th – April 30th 2016 – Berlin*. Within a few days you will know if your application has been accepted.

## Application and Payment Finalization Deadlines: 15.03.2016.

**Space is limited. Please register early to avoid disappointment!**



## Suggested Accommodation in Berlin (Optional):

**1- STUDENTENDORF BERLIN-SCHLACHTENSEE** offers furnished 10m<sup>2</sup> single rooms with a sun blind, a desk, a chair, wardrobe, a bed with linen, and wireless internet access. A living room with TV, an equipped kitchen, bathroom and toilet are available on the landing and are shared with other residents on the same corridor. The conditions offered are: 7 nights in a single room, check-in on April 24, 2016, check-out on May 1, 2016. Breakfast, lunch and dinner are not included. Participants have the possibility to have breakfast and lunch delivered for a reasonable price or they can cook their own meals using the shared kitchens.

<http://studentendorf-berlin.com/>



*Decoration Examples*

## 2- ECONTEL HOTEL BERLIN CHARLOTTENBURG

Centrally positioned between Tegel Airport, the Messe Berlin Exhibition Centre, Kurfürstendamm and Hauptbahnhof, the ECONTEL HOTEL is your perfect starting point when planning your stay in the capital city. The Charlottenburg Castle and the banks of the Spree can be reached on foot in just a few minutes, while the city's top sights such as the Brandenburg Gate, the Victory Column and Potsdamer Platz can be easily reached by bus or tram. The ECONTEL HOTEL is also an ideal Berlin address for a business trip, on account of the good accessibility from every direction. All 205 hotel rooms are equipped with flat-screen televisions, a room safe and a writing desk. WiFi is available free of charge throughout the entire hotel.

<http://www.amber-hotels.de/berlin-charlottenburg/en/>





## Fees

1. A fee of **EUR 1,200** covers tuition fees for the Course: "*Photovoltaic Tech (Solar Electric)*", course materials, documentation, site tours, and a programme certificate.
2. A fee of **EUR 1,450** covers tuition fees for the Course: "*Photovoltaic Tech (Solar Electric)*", course materials, documentation, excursion, site tours, a programme certificate, accommodation in a single room at the **STUDENTENDORF BERLIN-SCHLACHTENSEE (7 nights)** and a local public transportation ticket for Berlin. (Food and drinks are not included at either hostel. However, there are enough grocery shops, bakeries, restaurants and supermarkets near the class where you can enjoy breakfast and lunch for approximately 5 to 8€ per day).
- 3- A fee of **EUR 1,810** covers tuition fees for the Course: "*Photovoltaic Tech (Solar Electric)*", course materials, documentation, site tours, final certificate, accommodation in a single room with a rich breakfast buffet at **ECONTEL HOTEL BERLIN CHARLOTTEBURG (7 nights)** and public transportation in Berlin.

**Payment in instalments is possible in certain cases. Please contact us for further information!**

\* All the above prices are per person!

\*\* Group rates available for a minimum of 5 participants. Ask us for more details!

\*\*\*In all hotels the option is available to share a double room. If you book as a 2, then please specify if you would like to share a room and with which participant on your registration form. Ask us for more details!

\*\*\*\*Lunch, dinner and drinks are not included in your room price. However, they are available at either hotel at an extra cost!

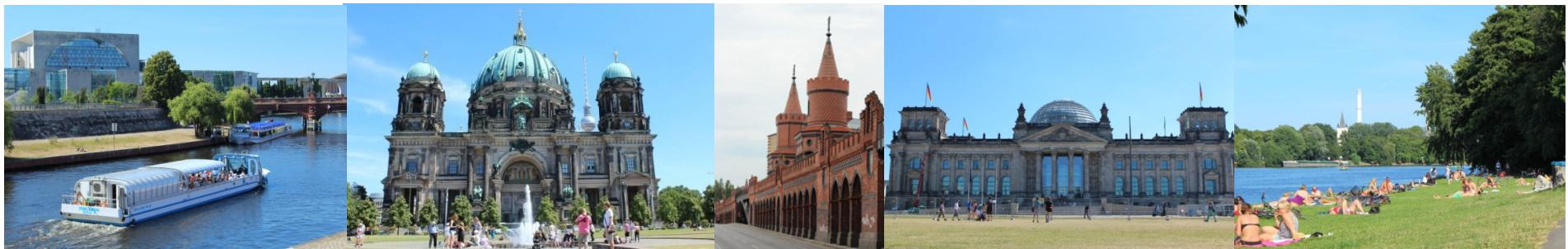
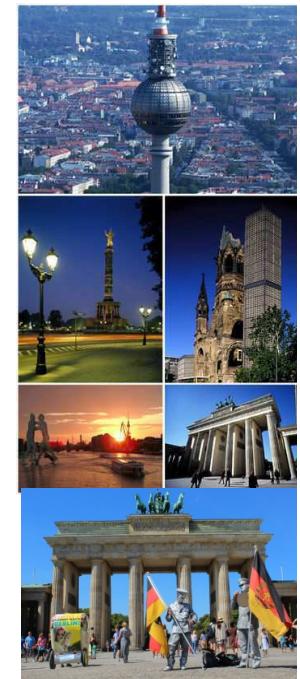


## Berlin – an exciting place to study!

Berlin is a city of contrast and fusion where East meets West, history meets future, and arts meet underground. Berlin is not only a great city to learn about cultures and arts, it is also a major centre for politics, international relations and high technology. Indeed, Berlin is home to some of the leading high technology companies in Germany and in the world.

Due to its political, cultural, historical, and technological importance, thousands of students come to Berlin every year and enjoy its unique cultural vibrancy, sizzling creativity and raw charm.

With the German Academy organising various field trips and sightseeing tours, students will be able to explore the German capital and enjoy its museums, theatres, clubs as well as a range of other recreational offers. [Read more](#)





### **Letter of Invitation/VISA**

We welcome international participants worldwide to take part in our programme. If you need a visa to enter the Federal Republic of Germany, we will gladly support you through the process by sending both you and the German embassy in your home country an invitation letter to support your visa application. The invitation letter/certificate for obtaining a visa will be issued by either the German Academy or a partner organization, once the minimum number of participants has been met and payment of the course fee has been received. All costs associated with the visa process, including the cost of the invitation letter, delivery fee to participants through a courier service such as DHL or EMS, delivery fee to the German embassy, as well as all other fees associated with obtaining a visa, must be paid for by the participants themselves. Please keep in mind the time needed for the entire visa process, as it may take up to three months to obtain in some countries. Please contact us as soon as possible if you would like us to support you through the visa process.

\*\*The costs associated with obtaining a visa, are not included in the total amount stated under the fees section and are an additional cost.\*\*

### **Registration and Contact Information**

The German Academy of Renewable Energy and Environmental Technology

Kaiser-Friedrich-Str. 4a, 10585 Berlin, Germany

E-mail: [info@germanacademy.net](mailto:info@germanacademy.net)

Web: [www.germanacademy.net](http://www.germanacademy.net)

Phone: +49 (0)30 33778033

Mobile: +49 (0)152 01775675

Fax: +49 (0)30 63426227



# Education Course Registration Form

I want to book for the following Course:

- " Photovoltaic Tech (Solar Electric)"

Course Date: – 25-20 April 2016 - Berlin

Course Language: English

Accommodation Choices:

Fee (varies according to accommodations): \_\_\_\_\_



## GERMAN ACADEMY

For Renewable Energy And Environmental Technology

**Register EARLY— Attendance is limited!**

Please fill out the form clearly in capital letters. All fields must be carefully filled in and the document must be signed.

Incomplete forms will not be considered.

### Application and Payment Finalization Deadlines: 15.03.2016

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Date of Birth (day/mo/yr)(required): \_\_\_\_\_ Gender: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Country: \_\_\_\_\_

Nationality: \_\_\_\_\_ E-mail address: \_\_\_\_\_

Degree: \_\_\_\_\_ Major: \_\_\_\_\_

Institute/ Organization: \_\_\_\_\_ Work Experience: \_\_\_\_\_

Function: \_\_\_\_\_ Title: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Work Phone Number: \_\_\_\_\_

Do You need a visa for short stays in Germany?  Yes  No

I hereby confirm that arrangements for payment for the abovementioned course delegate are in place, and agree to the payment procedures and terms and conditions as outlined on: [www.germanacademy.net](http://www.germanacademy.net)

By signing this registration form, I hereby confirm my participation by agreeing to all German Academy terms and conditions.

**Signature:**

(Only handwritten signature is acceptable)

**Date:**

**Location:**

Please send the completed registration form by post/fax/e-mail to:  
German Academy of Renewable Energy and Environmental Technology  
Mr. Hossam Gamil,  
The Director of Educational Programs for Renewable Energies & Environment.  
Kaiser-Friedrich-Str. 4 A, 10585 Berlin  
Fax: +49 30 - 63426227  
Tel: +49 30 - 33778033 or +491738390318  
E-mail: [info@germanacademy.net](mailto:info@germanacademy.net)