

Postgraduate Certificate Photovoltaic Installations





Postgraduate Certificate Photovoltaic Installations

- » Modality: Online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/engineering/postgraduate-certificate/photovoltaic-installations

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 20

06

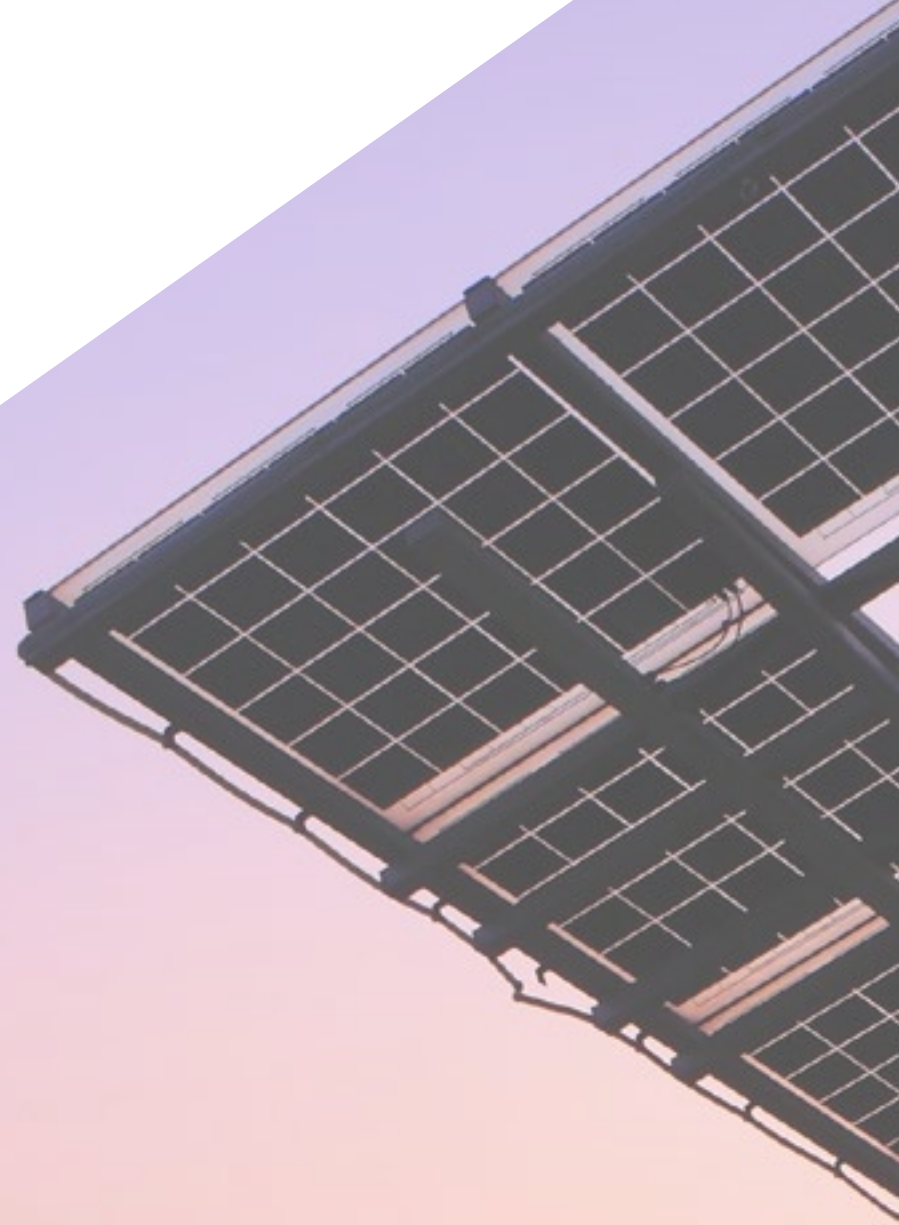
Certificate

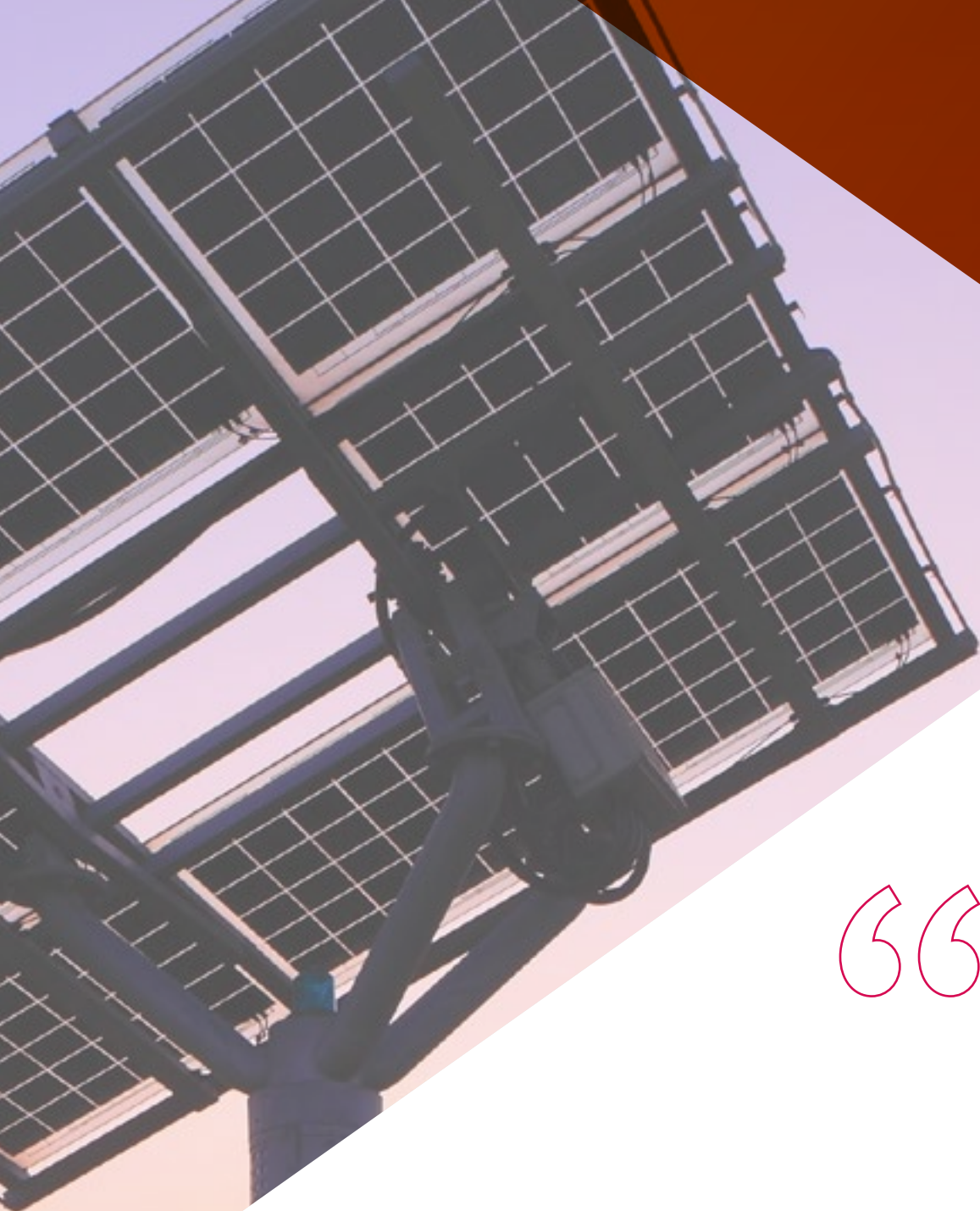
p. 28

01

Introduction

In a global context of growing concern about climate change and energy security, photovoltaic installations play a crucial role in the transition to a more sustainable energy future. Faced with this situation, companies are demanding the incorporation of engineers highly specialized in the planning, design, implementation and maintenance of photovoltaic systems. In order to take advantage of these job opportunities, professionals need to acquire a competitive advantage that differentiates them from other candidates. For this reason, TECH presents a revolutionary university program that brings together the most innovative strategies for the development of efficient Photovoltaic Installations. In addition, it is taught in a convenient online modality that allows students to plan their schedules individually according to their personal circumstances.





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With this Postgraduate Certificate based on Relearning, you will carry out an optimal dimensioning of Photovoltaic Installations to optimize energy production"

A recent report published by the International Energy Agency shows that global solar PV capacity reached 770 gigawatts last year, leading to an annual expansion of 20% on average over the last decade. Despite advances in solar PV, significant challenges remain in the effective integration of solar PV into power grids. In this context, professionals must incorporate the most innovative PV system performance optimization techniques into their procedures.

In response to this, TECH has created an avant-garde and cutting-edge Postgraduate Certificate in Photovoltaic Installations. The academic itinerary will delve into the current state of the photovoltaic market and its technological innovation. In this regard, the syllabus will delve in detail the specificities of these plants in off-grid buildings. In this way, engineers will be able to efficiently manage the available energy resources. In addition, the program will include a disruptive topic on current trends in photovoltaic technology, which will keep graduates at the forefront of innovation in this field.

It should be noted that the methodology of this program emphasizes its innovative nature. TECH offers a 100% online educational environment, tailored to the needs of busy professionals seeking to advance their careers. It also relies on the *Relearning* methodology, based on the repetition of key concepts to fix knowledge and facilitate learning. In this way, the combination of flexibility and a robust pedagogical approach makes it highly accessible. The only requirement is that professionals have a device with an Internet connection, including their own cell phone. In this way, they will be able to enter the Virtual Campus to enjoy an educational experience that will take their work horizons to a higher level.

This **Postgraduate Certificate in Photovoltaic Installations** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ The development of case studies presented by experts in Photovoltaic Energy
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



TECH is a university at the forefront of technology, which puts all its resources at your disposal to help you succeed as an engineer"

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You will delve into Photovoltaic Hybridization with renewable technologies and reduce maintenance costs associated with renewable energy generation”

The program’s teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to prepare for real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

Do you want to get up to date with the latest trends in Architectural Integration of Photovoltaic Installations? Achieve it with this program in only 180 hours.

TECH provides you with a 100% online methodology, based on free access to content and learning customization.



02 Objectives

Upon completion of this Postgraduate Certificate, engineers will have a holistic understanding of the principles of solar photovoltaic energy. Likewise, professionals will develop advanced skills to properly select the components of the systems, thereby optimizing both their efficiency and cost. In addition, graduates will be able to implement preventive maintenance programs with the objective of minimizing downtime. In this regard, experts will handle the most sophisticated monitoring systems.





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You will be highly qualified to size Photovoltaic Installations for a wide range of applications, including large industrial plants”



General Objectives

- ♦ Develop a specialized vision of the photovoltaic market and its lines of innovation
- ♦ Analyze the typology, components and advantages and disadvantages of all configurations and schemes of large photovoltaic plants
- ♦ Specify the typology, components and the advantages and disadvantages of all the configurations and schemes of self-consumption photovoltaic installations
- ♦ Examine the typology, components and advantages and disadvantages of all off-grid PV plant configurations and schemes
- ♦ Establish the typology, components and the advantages and disadvantages of hybridization of photovoltaic technology with other conventional and renewable generation technologies
- ♦ Establish the fundamentals of the operation of the components of the direct current part of the photovoltaic installations.
- ♦ Understand all the properties of the components
- ♦ Establish the fundamentals of the operation of the components of the direct current part of the photovoltaic installations.
- ♦ Understand all the properties of the components
- ♦ Characterize the solar resource on any site in the world
- ♦ Handle terrestrial and satellite databases
- ♦ Select optimal sites for photovoltaic systems
- ♦ Identify other factors and their influence on the photovoltaic installation
- ♦ Assess the profitability of investments, operation and maintenance activities and financing of photovoltaic projects
- ♦ Identify risks that may affect the viability of investments
- ♦ Manage PV projects
- ♦ Design and dimensioning of photovoltaic plants, including site selection, sizing of components and their coupling
- ♦ Estimate energy yields
- ♦ Monitor photovoltaic plants
- ♦ Manage health and safety
- ♦ Design and dimensioning of self-consumption photovoltaic installations, including site selection, sizing of components and their coupling
- ♦ Estimate energy yields
- ♦ Monitor photovoltaic installations
- ♦ Design and dimensioning of off-grid photovoltaic systems, including site selection, sizing of components and their coupling
- ♦ Estimate energy yields
- ♦ Monitor photovoltaic installations
- ♦ Analyze the potential of PVGIS, PVSYST and SAM software in the design and simulation of photovoltaic installations.
- ♦ Simulate, dimension and design photovoltaic installations using the following softwares: PVGIS, PVSYST and SAM.
- ♦ Acquire skills in the assembly and commissioning of installations
- ♦ Develop specialized knowledge in the operation and preventive and corrective maintenance of the facilities



Specific Objectives

- Identify the present and future possibilities of photovoltaic technology
- Differentiate the wide range of possible configurations and schemes, identifying in each case their advantages and disadvantages
- Analyze the role of each component within a photovoltaic installation
- Determine the synergies of hybridization of photovoltaic technology with other conventional and renewable generation technologies

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This program gives you the opportunity to practice in simulated environments, which provide immersive learning programmed to prepare you for real-life situations"

03

Course Management

TECH's main premise is to make available to anyone the most complete and up-to-date university programs in the academic field. To achieve this, it carries out a meticulous process to configure its teaching staff. Thanks to this effort, this Postgraduate Certificate has the participation of true references in the field of Photovoltaic Installations. These specialists have designed multiple teaching materials that stand out for their high quality and for meeting the requirements of today's labor market. In this way, engineers will be immersed in an immersive experience that will significantly raise their professional horizons.





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You will access a qualification designed by a teaching staff made up of specialists in Photovoltaic Installations, which will guarantee efficient learning”

Management



Dr. Blasco Chicano, Rodrigo

- ♦ Academic in Renewable Energy, Madrid
- ♦ Energy Consultant at JCM Bluenergy, Madrid
- ♦ PhD in Electronics from the University of Alcalá
- ♦ Specialist in Renewable Energy from the Complutense University of Madrid
- ♦ Master's Degree in Energy, Complutense University of Madrid
- ♦ Degree in Physics from the Complutense University of Madrid

Professors

Dr. Gilsanz Muñoz, María Fuencisla

- ♦ Researcher at the European University of Madrid
- ♦ Technical Director of Quality Control at Coca-Cola
- ♦ Clinical Analysis Laboratory Technician at Laboratorio Ruiz-Falcó, Madrid
- ♦ PhD in Biomedicine and Health Sciences from the European University of Madrid
- ♦ Degree in Chemical Sciences, National Distance Education University (UNED)
- ♦ Diploma in Physical Sciences, National Distance Education University (UNED)

Mr. Gómez Guerrero, Pedro

- ♦ Research trainee at the Institute of Physical and Information Technologies of CSIC
- ♦ Degree in Physics from the European University of Madrid (final year student)
- ♦ Summer course Unizar Astrophysics of the Center for the Study of the Physics of the Cosmos of Aragon
- ♦ Courses in astronomy, astrophysics at AAHU and Espacio 0.42, Huesca



04

Structure and Content

Through this university program, engineers will acquire a comprehensive understanding of the fundamentals of solar photovoltaics. The syllabus will delve into the operation of photovoltaic plants by looking at factors such as grid access, storage capacity or energy communities. At the same time, the syllabus will delve into Photovoltaic Hybridization with renewable technologies. This will enable graduates to maximize energy production and ensure a constant supply. In line with this, the program will provide students with the latest trends in photovoltaic technology and encourage them to implement highly innovative solutions.





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You will handle the most advanced monitoring systems to supervise the performance of Photovoltaic Installations in real time”

Module 1. Photovoltaic Installations

- 1.1. Photovoltaic Technology
 - 1.1.1. International Evolution of Installed Power
 - 1.1.2. Cost Evolution
 - 1.1.3. Potential Markets
- 1.2. Photovoltaic Installations
 - 1.2.1. According to their Access to the Grid
 - 1.2.2. According to Network Integration Requirements
 - 1.2.3. According to their Storage Capacity
 - 1.2.4. Within Energy Communities
- 1.3. Photovoltaic Plants
 - 1.3.1. Low Voltage and High-Voltage Photovoltaic Plants
 - 1.3.2. Photovoltaic Plants according to the Type of Inverters
 - 1.3.3. Other uses of Photovoltaic Plants: Agrivoltaics
- 1.4. Photovoltaic Plants for Self-Consumption
 - 1.4.1. Individual Installations Without Storage
 - 1.4.2. Collective Installations Without Storage
 - 1.4.3. Installations with Storage
- 1.5. Photovoltaic Installations in Off-Grid Buildings: Components
 - 1.5.1. Direct Current Installations
 - 1.5.2. Alternating Current Installations
 - 1.5.3. Installations in Off-Grid Communities
- 1.6. Photovoltaic Water Pumping Systems
 - 1.6.1. Direct Current Installations
 - 1.6.2. Alternating Current Installations
 - 1.6.3. Storage Alternatives
- 1.7. Photovoltaic Hybridization with other Renewable Technologies
 - 1.7.1. Photovoltaic and Wind Installations
 - 1.7.2. Photovoltaic and Thermosolar Installations
 - 1.7.3. Other Hybridizations: Biomass, Tidal Energy



- 1.8. Photovoltaic Hybridization with other Conventional Technologies
 - 1.8.1. Photovoltaic Installations and Generating Sets
 - 1.8.2. Photovoltaic Installations and Cogeneration
 - 1.8.3. Other Hybridizations
- 1.9. Architectural Integration of Photovoltaic Installations. BIPV and BAPV
 - 1.9.1. Advantages and Disadvantages of Integration
 - 1.9.2. Integration into the Building Envelope. Roofs, Facades
 - 1.9.3. Integration in Windows
- 1.10. Technological Innovation
 - 1.10.1. Innovation as a Value
 - 1.10.2. Current Trends in Photovoltaic Technology
 - 1.10.3. Current Trends in Other Complementary Technologies



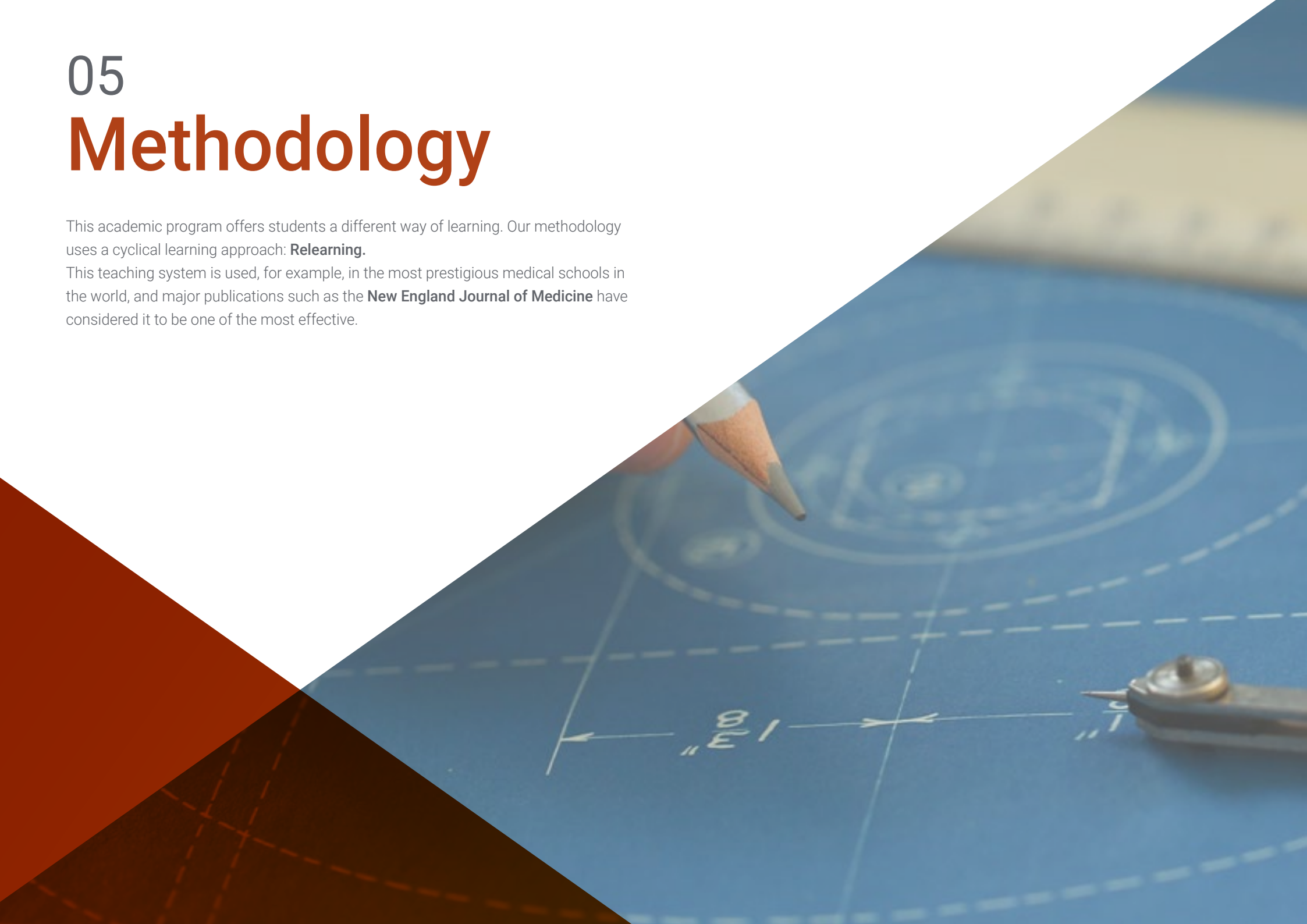
A syllabus that incorporates all the knowledge you need to take a step towards excellence as an engineer. What are you waiting for to enroll?"

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

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At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"



You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.



The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



06

Certificate

The Postgraduate in Photovoltaic Installations guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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*Successfully complete this program
and receive your university qualification
without having to travel or fill out
laborious paperwork"*

This private qualification will allow you to obtain a **Postgraduate Certificate in Photovoltaic Installations** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Photovoltaic Installations**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present quality
development languages
classroom



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