

# Postgraduate Certificate Electrical Energy in Organizations





## Postgraduate Certificate Electrical Energy in Organizations

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

Website: [www.techtute.com/us/engineering/postgraduate-certificate/electrical-energy-organizations](http://www.techtute.com/us/engineering/postgraduate-certificate/electrical-energy-organizations)

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# 01

# Introduction

In order to intervene with expert level skills in the management of electrical energy in organizations, professionals must have up-to-date knowledge that incorporates the most innovative developments and mastery of the current regulations. In this program, we have created an unrivalled opportunity to grow in which the parameters that define electricity will be established, including voltage, current, and the relationships between active, reactive and capacitive powers. The processes of energy transformation and distribution will be explained in detail, and we will study the equipment required to carry out transformation and distribution, looking at how these processes affect the total energy consumed. An intensive and complete course that will prepare you to compete among the best professionals in the sector.



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*Get up to speed in electrical energy management with this highly skilled course that will provide you with the theoretical and practical knowledge you need”*

Throughout the program, the uses of electrical energy, applications and equipment that allow for more efficient energy consumption will be analyzed. We will also address the new electricity tariff system, effective as of June 2021, and how the different tariffs are modified, analyzing, in depth, the new methodologies for calculating penalties and the specifics of the new billing schedules.

Furthermore, fuel measurement systems and the transformation of volumetric measurement units into energy units will be covered. Additionally, special emphasis will be placed on the different types of consuming equipment such as boilers and their respective energy yields. There will also be special emphasis on the specifics that occur in combustion systems and how their performance is measured on the PCI, as opposed to the natural gas consumption data that are provided in PCS.

In connection with the previous point, the tariff system applied to the supply of natural gas and the terms that appear in the invoicing will be analyzed.

By completing and passing the evaluations of this program, the student will obtain sound knowledge of the rules and regulations to be applied in relation to environmental and energy management in organizations. A complete and highly-intensive program, which will allow you to incorporate the most up-to-date knowledge in this field of work into your practice. A highly interesting subject due to its current relevance and because the standards that will be studied in the program must be integrated in all organizations.

With an approach focused on efficiency, this Postgraduate Certificate in Electrical Energy in Organizations has been created to allow students to optimize their efforts and achieve the best learning results in the shortest possible time. Additionally, as it is a 100% online program, the student is not constrained by fixed timetables or the need to move to another physical location, but can access the contents at any time of the day, balancing their professional or personal life with their academic life.

This **Postgraduate Certificate in Electrical Energy in Organizations** contains the most complete and up-to-date educational program on the market. The most important features of the program include:

- ◆ Practical cases presented by experts in Environmental and Energy Management in Organizations
- ◆ 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 self-assessment can be used to improve learning
- ◆ 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



*A qualitative leap in your specialization that will mean an increase in quality and success in your professional practice"*

“*Integrate knowledge specific to fuels, their uses and ways to achieve energy efficiency in organizations into your work*”

*With comprehensive and up-to-date teaching material and the best audiovisual systems in the educational market, to provide you with an immersive learning experience*

*A 100% online Postgraduate Certificate in Electrical Energy in Organizations that will allow you to combine your studies with your professional work in a completely flexible way*

Supported by excellent multimedia content, developed with the latest educational technology, this Postgraduate Certificate in Electrical Energy in Organizations will provide the professional with situated and contextual learning, i.e., study in a simulated environment that will provide immersive learning programmed to train in real situations.

The design of this program focuses on Problem-Based Learning, which means the student must try to solve the different real-life situations that arise throughout the academic program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

# Objectives

TECH offers a first class professional and personal growth process. The Postgraduate Certificate in Energy Sources in Organizations has the general objective of enhancing the performance of professionals in this field so that they can incorporate the main advances and intervention techniques into their daily work.





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*Quickly acquire the most comprehensive and up-to-date knowledge in all aspects that an electrical energy specialist has to deal with"*



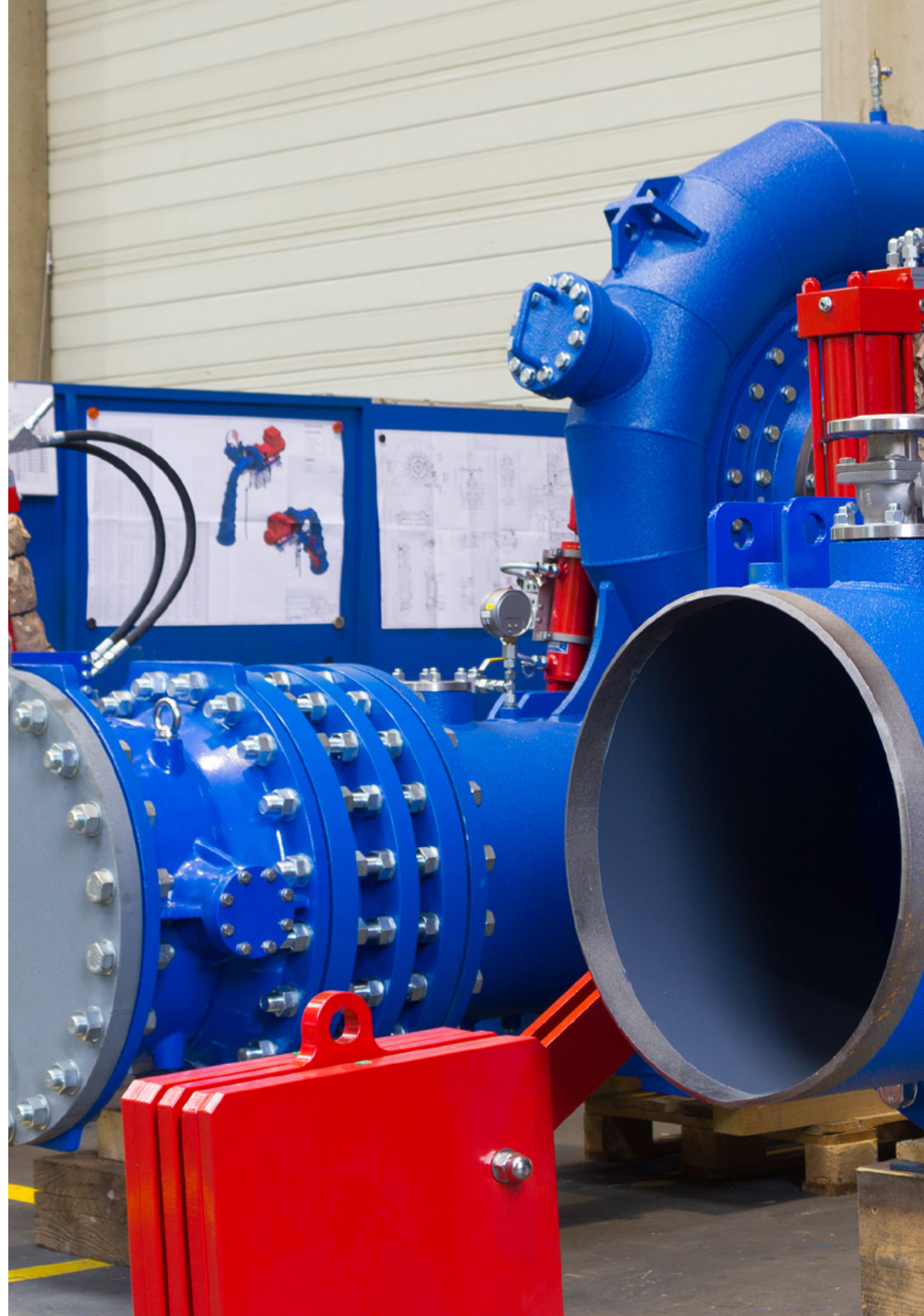
## General Objectives

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- ◆ Gain an in-depth understanding of electrical energy, breaking down the main consuming equipment and its applications
- ◆ Master the most commonly used fuels and fuel consuming equipment

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*The up-to-date program you've been looking for, with the quality guarantee of TECH"*





## Specific Objectives

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- ◆ Have in-depth knowledge of all aspects related to the generation and consumption of electrical energy
- ◆ Analyze the main characteristics of electrical energy consuming equipment
- ◆ Identify the most important aspects of energy billing
- ◆ Perform an in-depth breakdown of all aspects related to the generation and consumption of energy generated from combustion
- ◆ Establish the main characteristics of combustion systems and fuels in detail

03

# Course Management

An exceptional opportunity to study with a multidisciplinary team of teachers who will offer you the most up-to-date and comprehensive knowledge in this field, accompanying you during the learning process and providing you with their experience and real vision of the profession. A unique opportunity to learn directly from experts in this field of work.



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*You will learn from experts in this sector, who will provide you with a specific and direct vision of the reality of this field of work”*

## International Guest Director

With an exceptional professional career, Sarah Carson has focused her research on environmental compliance and sustainability in higher education. For more than 3 decades, she has been part of Cornell University's research team charged with implementing and analyzing the impact of policies for the care of natural resources. Thanks to her experience in this area of expertise, she has been chosen to lead the Office of Campus Sustainability at Cornell University.

In this way, this expert directs the electricity supply projects, aimed at reducing the carbon footprint of the higher education center. As such, she has implemented innovative technologies that help, for example, to maintain high temperatures during the winter in the educational facilities. Specifically, her team has opted to implement a renewable geothermal heat source called "ground-source heat", the beneficial results of which have already been reported in several global impact reports.

At the same time, she has actively participated in the energy policy of New York, related to the generation of renewable energy. To this end, she has collaborated in the volunteer program for the Regional Greenhouse Gas Initiative in this US state. The latter is based on the Cap and Trade model, which allows the university, the local government and other participants to claim renewable energy credits.

As for her academic life, Carson holds a degree in Natural Resources Management and Policy from North Carolina State University. She also holds a degree in Environmental Science and Policy from the School of Environmental Science and Forestry at the State University of New York.



## Ms. Carson, Sarah

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- Director, Office of Sustainability, Cornell University, New York, United States
- Head of Campus Climate Action, Cornell University, New York, USA
- Environmental Management Specialist, Cornell University
- Environmental Information Officer, Cornell University
- B.S. in Natural Resource Management and Policy from North Carolina State University
- B.S. in Environmental Science and Policy from the State University of New York

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Management



### Ms. Cubillo Sagües, María Ignacia

- ♦ Senior Mining Engineer, Polytechnic University of Madrid
- ♦ Executive MBA Academic discipline: Executive MBA from IE (Business Institute)
- ♦ Master's Degree in "The Economics of Energy Management of Buildings", Agustín Betancourt Foundation, ETSI Roads, Polytechnic University of Madrid
- ♦ CMVP (Certificate in Measurement and Verification of Energy Savings), Academic discipline IPMVP (International Measurement and Verification Protocol) from the Association of Energy Engineers (AEE)
- ♦ Chief Energy Auditor in Industry and Building, Academic discipline Energy Efficiency. Certified by the AEC (Spanish Quality Association)
- ♦ Technical Auditor for ENAC in ISO 50001 National Accreditation Entity
- ♦ Technical Auditor in ISO 17020, ISO 17021 and ISO 17024, for ENAC, in Energy Efficiency
- ♦ General Director of SinCeO2 Energy Consulting



## Professors

### Mr. Piña, David

- ◆ Technical Mining Engineer, specialized in fuels and explosives of energy resources at the Polytechnic University of Madrid.
- ◆ CEPESA Chairman on Lubricating Oils at the E.T.S.I. de Minas of Madrid
- ◆ Energy Audits Course at BESEL
- ◆ International Energy Savings Measurement and Verification Protocol Training at SinCeO2, Energy Consultancy

### Mr. Gordaliza, Daniel

- ◆ Consultant / Auditor in the energy sector within the Industry Department of SinCeO2 Energy Consulting
- ◆ Technical Mining Engineer, specialized in fuels and explosives from energy resources at the Polytechnic University of Madrid
- ◆ Certified Energy Manager from PREPA (Chapter of the Association of Energy Engineers of Spain)
- ◆ Expert in the use of technical measurement equipment at the Higher Technical School of Mining Engineers (ETSI de Minas)
- ◆ Course on Industrial Applications of Radiation and Radiation Protection given by the Nuclear Safety Council

### Mr. Royo, Eduardo Ángel

- ◆ Energy Consultant/Auditor in the tertiary sector at SinCeO2, Energy Consultancy
- ◆ Degree in Agricultural Engineering, specializing in Agricultural Operations and Horticulture and Gardening at the Polytechnic University of Madrid. r
- ◆ Specialist in Environmental Education at Imefe
- ◆ Course in Environmental Auditing at the Chamber of Commerce of Madrid
- ◆ Purchasing Manager TOGOGAS Huelva S.L.
- ◆ Installation technician TOGOGAS Huelva S.L.
- ◆ Commercial Delegate TOGOGAS Huelva S.L.

# 04

# Structure and Content

The syllabus of this Postgraduate Certificate in Electrical Energy in Organizations includes all the contents required to develop extensive and up-to-date knowledge of all the aspects involved in this field of work, with the consideration and analysis of all the existing possibilities in this field. A program specifically created to provide our students with a continuous process of skills improvement that will boost their real capacity for intervention.





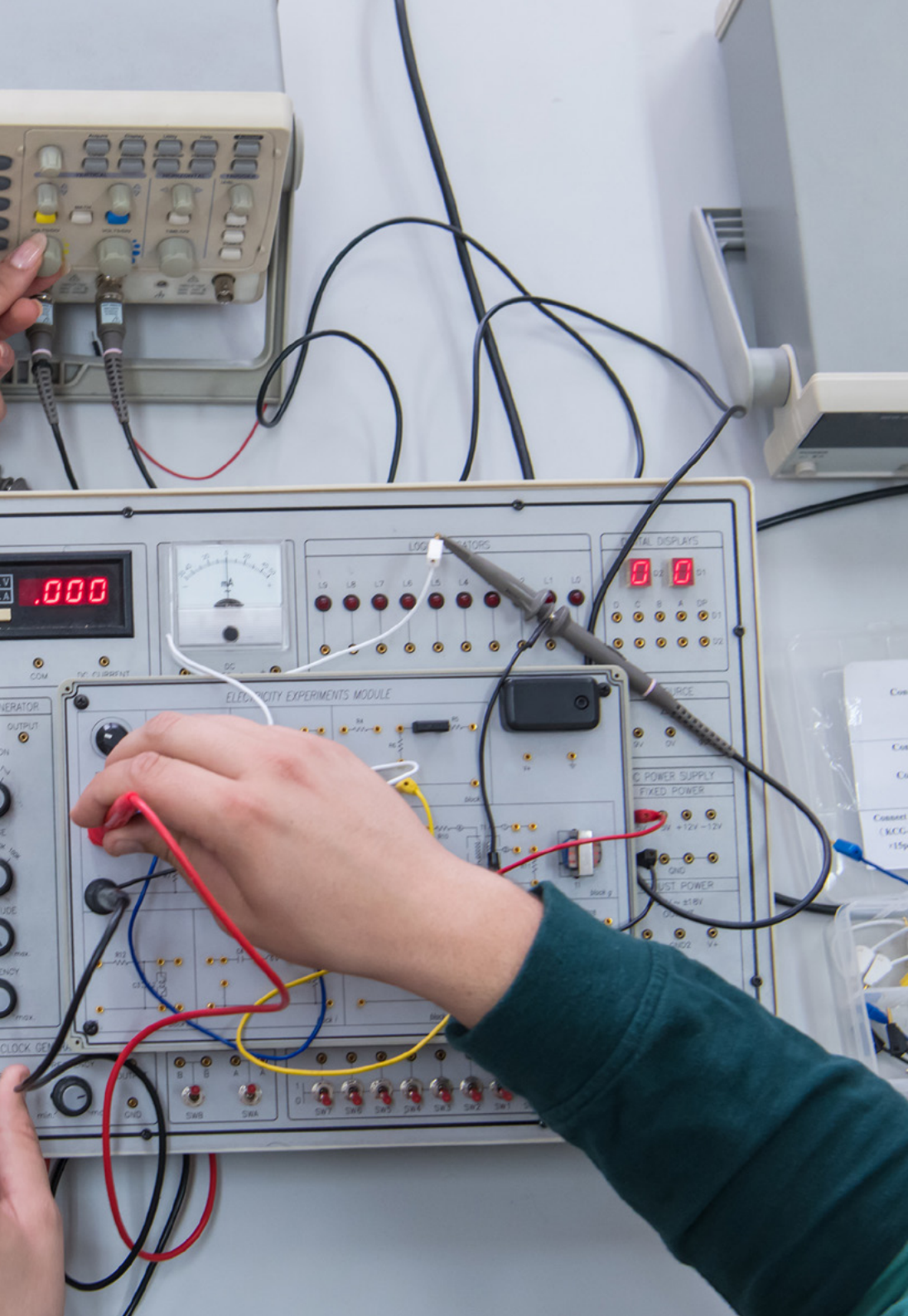
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*A high quality educational process that will allow you to learn all the areas of knowledge you need in order to intervene as an expert in this field”*

## Module 1. Electrical Energy

- 1.1. Electrical Energy Voltage, Current, Power and Energy
  - 1.1.1. Voltage and Current
  - 1.1.2. Active, Reactive and Apparent Energy
  - 1.1.3. Electrical Power. Load Curves
- 1.2. Energy Transformation
  - 1.2.1. Power Transformers
  - 1.2.2. Electricity Transportation
  - 1.2.3. Electricity Distribution
- 1.3. Electrical Energy Consuming Systems: Electric Motors
  - 1.3.1. Applications, Pumps, Fans and Compressors
  - 1.3.2. Frequency Inverters
  - 1.3.3. Motor-Based Consumer Systems: Heat Pump Air Conditioning
- 1.4. Other Electricity Consuming Systems
  - 1.4.1. Joule Effect
  - 1.4.2. Lighting
  - 1.4.3. Direct Current Powered Systems
- 1.5. Units of Measurement of Fuel Consumption and their Transformation into Energy Units
  - 1.5.1. Energy Produced by Heat of Combustion: HHV and LLV
  - 1.5.2. Volumetric Measurements of Combustible Liquids
  - 1.5.3. Volumetric Measurements of Combustible Gases. Establishment and Calculation of Normal Conditions





- 1.6. Combustion Systems and Fuel Elements
  - 1.6.1. Combustion Efficiency
  - 1.6.2. Burners
  - 1.6.3. Heat Transfer
- 1.7. Boilers
  - 1.7.1. Calculation of Boiler Efficiency by Direct and Indirect Method
  - 1.7.2. Types of Heat Transfer Fluids
  - 1.7.3. Steam Boilers
- 1.8. Other Fuel-Consuming Equipment
  - 1.8.1. Ovens
  - 1.8.2. Engines
  - 1.8.3. Generating Sets

“ Advance your skills with the most interesting study systems on the online teaching scene”

04

# 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.



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*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"*

## At TECH we use the Case Method

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

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



*We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition*





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

### A learning method that is different and innovative

This intensive Engineering program at TECH Global University prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH Global University you will use Harvard *case studies*, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.



*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 by 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 is the first university in the world to combine Harvard University case studies with a 100% online learning system based on repetition, which combines 8 different didactic elements in each lesson.

We enhance Harvard case studies 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 university 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 learning, 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.



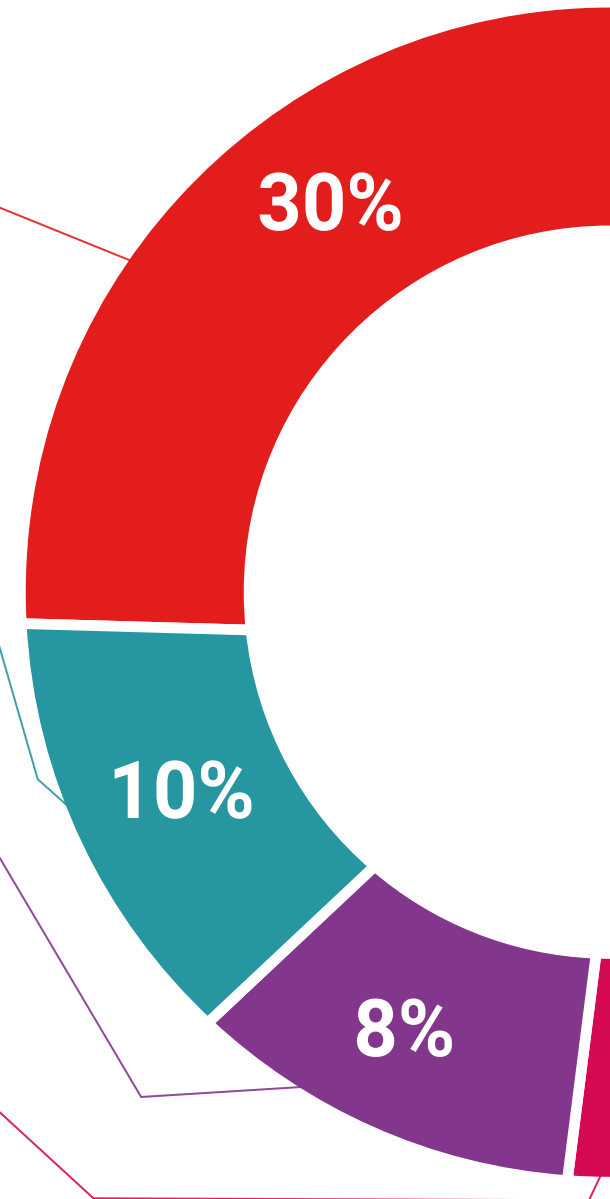
### Practising Skills and Abilities

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



### 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**

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management 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.



05

# Certificate

The Postgraduate Certificate in Electrical Energy in Organizations 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 diploma without travel or laborious paperwork”*

This program will allow you to obtain your **Postgraduate Certificate in Electrical Energy in Organizations** 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** title 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 Electrical Energy in Organizations**

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

**tech** global  
university

personalized service innovation

knowledge present  
online training

development languages

virtual classroom

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