

Postgraduate Certificate Electric Power Transmission



Postgraduate Certificate Electric Power Transmission

Course Modality: **Online**

Duration: **2 months.**

Certificate: **TECH - Technological University**

6 ECTS Credits

Teaching Hours: **150 hours.**

Website: www.techtitute.com/us/engineering/postgraduate-certificate/electric-power-transmission

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01

Introduction

This Postgraduate Certificate will cover in depth the Electric Power Transmission and the infrastructure used for it, namely High Voltage Lines. There will be a practical training, which will allow you to better acquire this knowledge, but without forgetting an interesting technical-economic aspect closely related to the business of the electricity market. It is a specialization that will enable the professional to carry out their daily work with rigor.





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Engineering professionals must continue their training during their career to adapt to new developments in the field”

In this course we will cover in depth the Electric Power Transmission and the infrastructure used for it, namely High Voltage Lines.

The first step is to introduce the student to legislative framework that affects High Voltage Lines, focusing rigorously on the Easements and Safety Distances to private properties or other types of infrastructures. In some Autonomous Communities, special attention is paid to the Protection of Avifauna, so it is necessary to define the necessary material and install it without failing to comply with these requirements. This is of vital importance, as it , may cause the corresponding local authorities to stop the work or not to authorize its Start-up.

Likewise, it is important for professionals to know the composition of a High Voltage Lines, the characteristics and performance that the associated wiring must have; the location and dimensions of the supports and the corresponding foundations; the protections that it must have for potential ground deviations, and lightning protections for potential atmospheric discharges.

We will deal with the existing technologies in the assembly of High Voltage Lines in all its aspects: conduits, transmission towers, splices, connections, lightning conductors and the different variants in the grounding systems.

We will learn everything related to supporting calculations, both electrical and mechanical, and their correct processing from the data collection phase.

We will break down the construction phase of High Voltage Lines in its overhead and subterranean forms. The coordination of the Civil Works, the Reinforcement, the Wiring, the Lifting of the Transmission Towers... as well as the Tests and Practical exams that are associated with all of them.

Due to the large amount of machinery and workers that are necessary in the construction of High Voltage Lines, an in-depth study of the associated Occupational Risks will be carried out.

Finally, we will learn how to interpret and select the characteristics of overhead lines according to specific needs together with the interpretation of the conductor and wiring tables. This will allow us to analyze projects and preliminary projects in order to be able to accurately break down and undertake the bidding process for the construction of High Voltage Lines.

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

- ◆ The development of case studies presented by experts in Computing Engineering
- ◆ The graphic, schematic, and eminently 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
- ◆ Special emphasis on innovative methodologies in Electric Power Transmission
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Access to content from any fixed or portable device with an Internet connection.



Do not miss the opportunity to complete with us this Postgraduate Certificate in Electrical Power Transmission It's the perfect opportunity to advance your career"

“ *This course is the best investment you can make in selecting a refresher program to bring your knowledge of Electric Power Transmission up to date*”

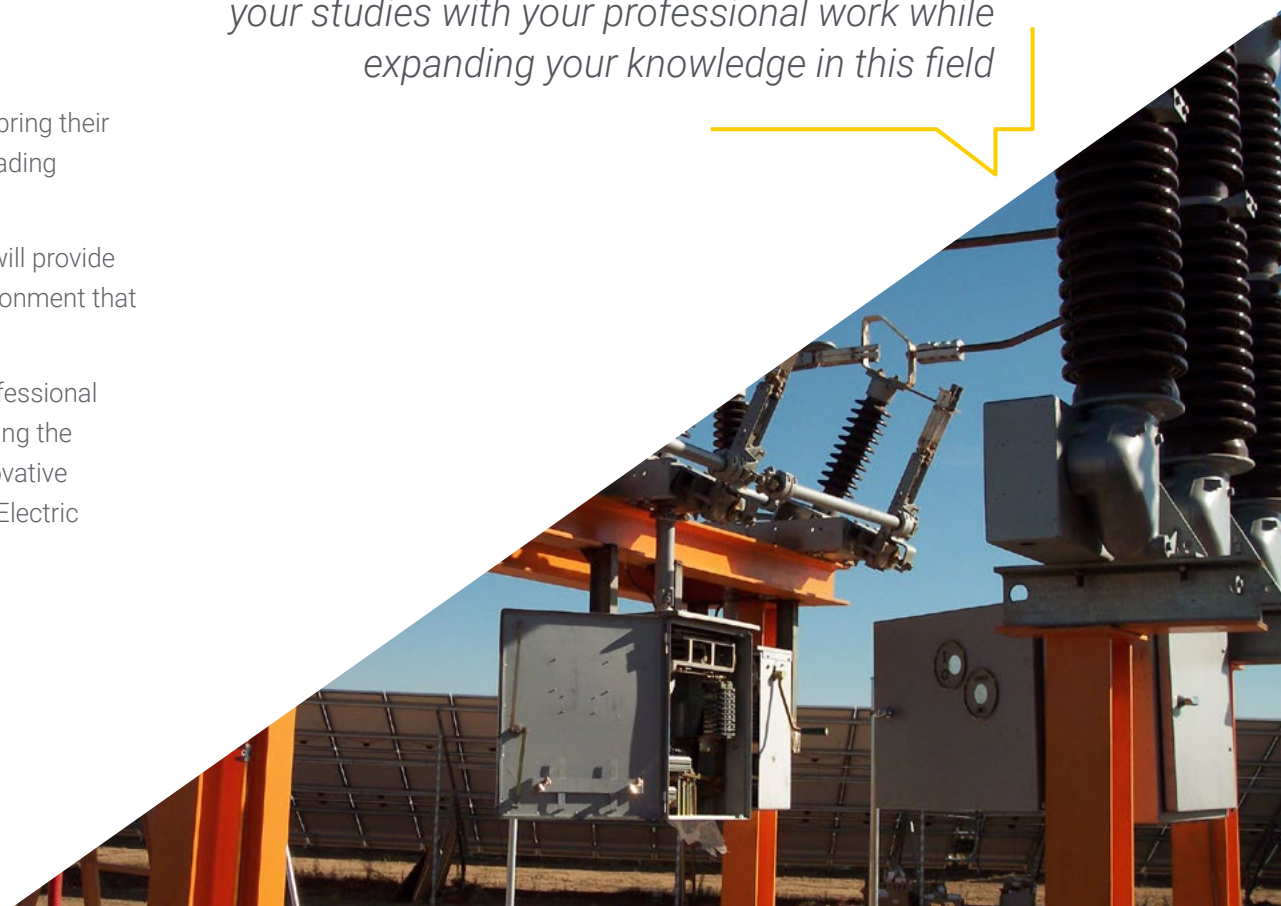
The teaching staff includes professionals from the engineering sector, who bring their experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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 training programmed to train in 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 academic year. For this purpose, the professional will be assisted by an innovative Interactive Video System, developed by well-known experts in High Voltage Electric Infrastructures and Substations

This training comes with the best didactic material, providing you with a contextual approach that will facilitate your learning

This 100% online course will allow you to combine your studies with your professional work while expanding your knowledge in this field



02

Objectives

The Postgraduate Certificate in Electrical Power Transmission is designed to facilitate the performance of the professional in this field to acquire and be familiar with the main developments in this field of engineering





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It is the best option to learn about the latest advances in Electric Power Transmission”



General Objectives

- ◆ Interpret the regulatory framework of electric power distribution and transmission infrastructures
- ◆ Discover the potential business opportunities offered by high voltage infrastructures in the generation and sale of electric energy
- ◆ Addressing the issues involved in the correct management of the design, project, construction and execution of high voltage installations and electrical substations: human and material resources, quality and environmental management, and the financing of this type of constructions and installations.
- ◆ Bidding and preparing tenders for high voltage infrastructure and/or electrical substation construction projects.
- ◆ Define the rules and regulations in force, together with the necessary procedures and permits from the Public Administration, to successfully undertake the project, construction and start-up phases of this type of infrastructure
- ◆ Learn the latest trends, technologies and techniques in high voltage Infrastructures and electrical substations
- ◆ Identify the components necessary for the correct operation of the installations
- ◆ Select the corresponding subcontractors and professionals to carry out the various and complex works that interact in a High Voltage Infrastructure and/or Electrical Substation



Take the first step to get up to date on the latest developments in Electric Power Transmission"





Specific Objectives

- ◆ Interpret the legislative framework in the design and execution of high voltage lines, their classification and the particular conditions for the type of installation in question
- ◆ Addressing the protection of Avifauna and other species in the selection of components during the construction of a high voltage overhead lines
- ◆ Know the composition of high voltage lines in order to be able to make a correct selection of the elements that compose them during their design and project
- ◆ Acquire knowledge of the technology and current trends in the construction of high-voltage overhead lines
- ◆ Correct dimensioning of high voltage lines, taking into account the characteristics of the terrain, the area where the line is to be built and the properties of the electrical energy to be transported
- ◆ Correctly manage the construction of high voltage lines in all its phases: civil works, lifting, laying
- ◆ Draw up the health and safety plan for the high voltage power line installation project.
- ◆ Analyze projects and preliminary projects to undertake the bidding process for the execution of high voltage installations

03

Course Management

In our university we have professionals specialized in each area of knowledge, who pour their work experience into our training programs.



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Our university employs the best professionals in all areas who share their knowledge to help you”

Management



Mr. Palomino Bustos, Raúl

- ♦ Industrial Engineer, University of Carlos III in Madrid
- ♦ Industrial Technical Engineer by the EUITI of Toledo
- ♦ Master's Degree in Occupational Risk Prevention from the Francisco de Vitoria University
- ♦ Master's Degree in Quality and Environment by the Spanish Quality Association
- ♦ Technological/training expert recognized and accredited by the State Public Employment Service.
- ♦ International Consultant in Engineering, Construction and Maintenance of Energy Production Plants for the company RENOVETEC
- ♦ Director at the Institute for Technical Training and Innovation



Professors

Mr. Palomino Bustos, Raúl

- ◆ Industrial Engineer, University of Carlos III in Madrid
- ◆ Industrial Technical Engineer by the EUITI of Toledo
- ◆ Master's Degree in Occupational Risk Prevention from the Francisco de Vitoria University
- ◆ Master's Degree in Quality and Environment by the Spanish Quality Association
- ◆ Technological/training expert recognized and accredited by the State Public Employment Service

04

Structure and Content

The structure of the contents has been designed by the best professionals in the electrical infrastructure sector, with extensive experience and recognized prestige in the profession



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We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too”

Module 1. Electric Power Transmission.

- 1.1. High Voltage Lines
 - 1.1.1. Applicable Legislation
 - 1.1.2. Easements and Safety Distances
 - 1.1.3. Bird and Fauna Protection
- 1.2. Composition of High Voltage Lines
 - 1.2.1. Wiring and Conductors
 - 1.2.2. Supports and Foundations
 - 1.2.3. Grounding & Lightning Protection
- 1.3. Technology in High Voltage Lines
 - 1.3.1. Pipelines and Transmission Towers
 - 1.3.2. Accessories: Splices, Terminals and Lightning Arresters
 - 1.3.3. Grounding Systems
- 1.4. Design and Electrical Calculations
 - 1.4.1. Data Collection for Design
 - 1.4.2. Electrical Calculations
- 1.5. Design and Mechanical Calculations
 - 1.5.1. Data Collection for Design
 - 1.5.2. Mechanical Calculations
- 1.6. Aerial Line Construction
 - 1.6.1. Civil Works
 - 1.6.2. Reinforcing and Hoisting of Towers
 - 1.6.3. Laying and Stapling





- 1.7. Construction of Underground Lines
 - 1.7.1. Civil Works
 - 1.7.2. Laying
 - 1.7.3. Tests and Trials
- 1.8. Occupational Risks in Aerial Line Construction
 - 1.8.1. Safety in Relation to the Services Affected
 - 1.8.2. Risk Analysis and Their Prevention
 - 1.8.3. Preventative Organization
 - 1.8.4. Document Requirements
- 1.9. High Voltage Overhead Line Study
 - 1.9.1. Needs Assessment
 - 1.9.2. Interpretation of Wiring and Conductor Tables
 - 1.9.3. Data Processing
- 1.10. High Voltage Underground Line Study
 - 1.10.1. Needs Assessment
 - 1.10.2. Interpretation of Wiring and Conductor Tables
 - 1.10.3. Data Processing



This training will allow you to advance in your career comfortably"

05

Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

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





Discover Re-learning, 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 you a revolutionary approach to developing your skills and knowledge. Our goal is to strengthen your skills in a changing, competitive, and highly demanding environment.

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With TECH you can 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



A learning method that is different and innovative.

This Engineering program at TECH Universidad Tecnológica is an intensive program that prepares you to face all the challenges in this area, 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 Technological 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.

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

The case method has been the most widely used learning system among the world's leading business schools for as long as they have existed. 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.

In a given situation, what would you do? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, you will be presented with multiple real cases. You will have to combine all your knowledge, and research, argue, and defend your ideas and decisions.

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

Re-learning Methodology

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

We enhance Harvard case studies with the best 100% online teaching method: Re-learning.

In 2019 we obtained the best learning results of all Spanish-language online universities in the world.

At TECH you will learn with an avant-garde methodology designed to train the managers of the future. This method, at the forefront of international teaching, is called Re-learning.

Our University is the only one in the world licensed to incorporate 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 Spanish online university indicators.



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

With this methodology we have 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, markets, and financial 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.

Re-learning 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 to success

Based on the latest evidence in neuroscience, not only do we know how to organize information, ideas, images, memories, but we also know that the place and context where we have learned something is crucial for us to be able to remember it and store it in the hippocampus, and 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.



In this program you will have access to the best educational material, prepared with you in mind:



Study Material

All didactic content is created by the very specialists who will teach the course, making it both specific and practical.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



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 our future difficult decisions.



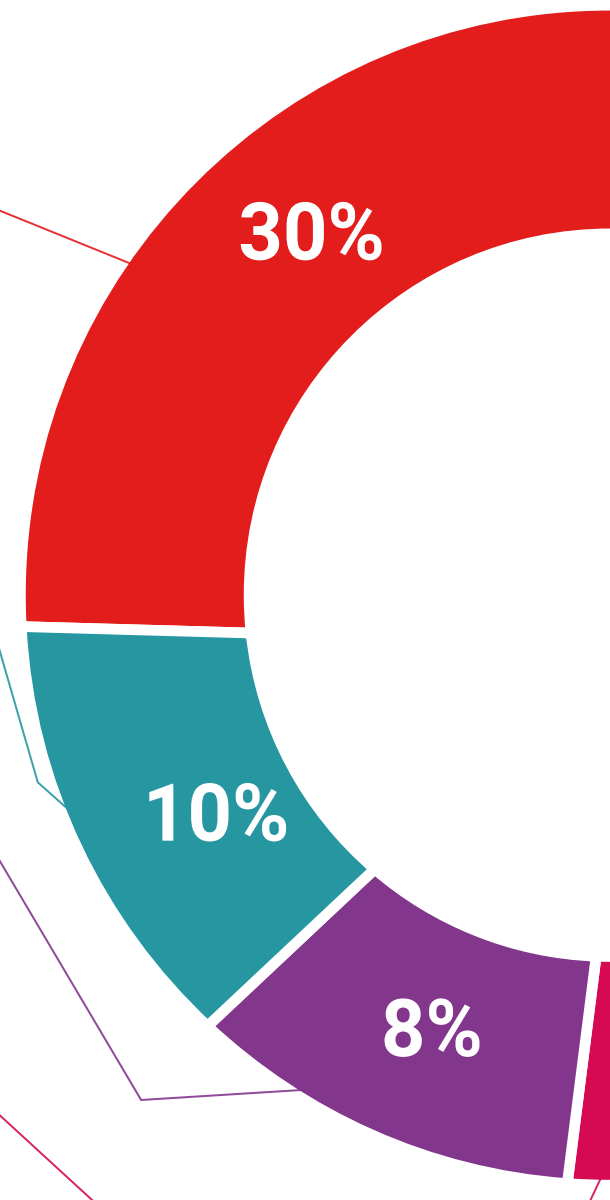
Practising Skills and Abilities

You 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 we live in.



Additional Reading

Recent articles, consensus documents, international guides, in our virtual library you will have access to everything you need to complete your training.





Case Studies

You 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 Latin America.



Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



Testing & Retesting

We periodically evaluate and re-evaluate your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



06

Certificate

Through a different and stimulating learning experience, you will be able to acquire the necessary skills to take a big step in your training. An opportunity to progress, with the support and monitoring of a modern and specialized university, which will propel you to another professional level.



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Include in your training a Postgraduate Certificate in Electric Power Transmission: a highly valued addition to any professional in this area"

This **Postgraduate Certificate in Electrical Power Transmission** contains the most complete and updated scientific program on the market.

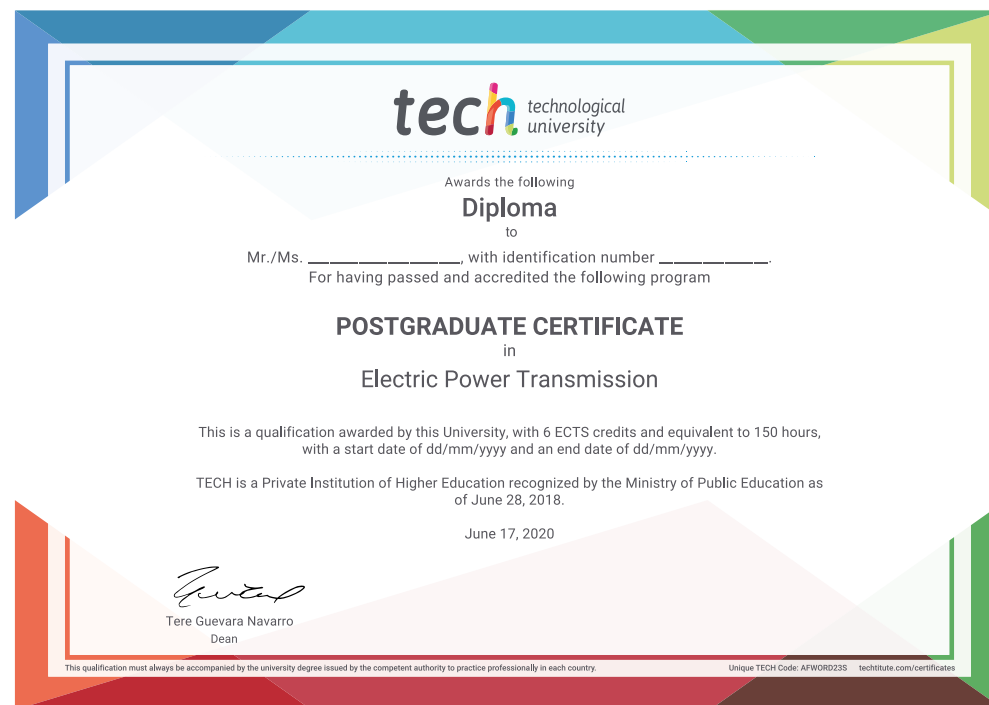
After students have passed their assessments, they will receive by certified mail their **Postgraduate Certificate** issued by **TECH - Technological University**.

The Postgraduate Certificate issued by **TECH - Technological University** will reflect the qualification obtained in the **Postgraduate Certificate**, and meets the requirements commonly demanded in the job market, competitive examinations and evaluation committees of professional courses.

Title: **Postgraduate Certificate in Electric Power Transmission**

ECTS: **6**

Official Number of Hours: **150**



*Apostille Convention. In the event that the student wishes to have their paper diploma Apostilled, TECH EDUCATION will make the necessary arrangements to obtain it at an additional cost of €140 plus shipping costs of the Apostilled diploma.

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



Postgraduate Certificate Electric Power Transmission

Course Modality: Online

Duration: 2 months.

Certificate: TECH - Technological University

6 ECTS Credits

Teaching Hours: 150 hours.

Postgraduate Certificate

Transportation of Electrical Energy

