

Postgraduate Certificate Civil Engineering for Wind Farms





Postgraduate Certificate Civil Engineering for Wind Farms

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

Website: www.techtitude.com/us/engineering/postgraduate-certificate/civil-engineering-wind-farms

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01

Introduction to the Program

Civil Engineering in the context of wind farms is experiencing significant advancements due to new methodologies and technologies. As a result, the industry has seen remarkable growth in the construction of wind farms in the European Union, which set a record by adding 17 GW of new wind energy capacity, highlighting the importance of this sector in the global transition to renewable energy. In this context, TECH Global University has launched a fully online program that only requires an electronic device with an internet connection to access all educational resources. Furthermore, it is based on the Relearning methodology, which is pioneering at this institution.





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Through this 100% online program, you will gain specialized and up-to-date training in the wind farm sector, increasing your professional value in a market that increasingly values Renewable Energy”

It is estimated that the installed capacity of Wind Energy worldwide will exceed 900 gigawatts, representing a significant increase compared to previous years. This growth has driven the demand for engineers specialized in the design and construction of critical infrastructures, such as access roads, foundations, and platforms for wind turbines.

As such, this study was created, focusing on the fundamental principles of Civil Engineering, with an emphasis on the particularities of wind energy projects. In this context, engineers will explore the current regulations and standards governing this sector, as well as the specific characteristics of the infrastructures required for the efficient operation of wind farms.

Additionally, disciplines such as geotechnics, hydraulics, urban planning, and structural design will be examined, which are essential for ensuring the viability and performance of these projects. Furthermore, students will be equipped to apply a planning process in the early stages of design, allowing them to develop effective strategies for project execution, from site selection to the development of schedules and budgets.

Finally, professionals will be trained to design each of the disciplines involved in the Civil Engineering of wind farms and substations, providing them with the skills to address technical challenges that arise during the design and calculation of the different components. Problem-solving abilities will also be developed, enabling students to face unforeseen situations and optimize the performance of the designed infrastructures.

In this way, TECH has created a comprehensive, 100% online, and flexible program, allowing graduates to avoid inconveniences such as commuting to a physical location and adhering to a fixed schedule. Additionally, students will benefit from the revolutionary Relearning methodology, which is based on the repetition of key concepts to ensure optimal and natural content assimilation.

This **Postgraduate Certificate in Civil Engineering for Wind Farms** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in engineering focused on Wind Energy
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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



You will acquire technical and practical skills in the design and construction of complex infrastructures, resulting in more efficient and sustainable projects, thanks to an extensive library of multimedia resources”

“

You will apply planning processes from the initial design stage, including site evaluation, resource identification, and the development of construction plans. With all the quality guarantees from TECH!”

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 learn 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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

You will address the principles of structural design, geotechnics, and construction, which are essential to ensuring the safety and effectiveness of these installations, through the best educational materials available in the academic market.

You will delve into disciplines such as surveying, hydraulic engineering, and environmental engineering, understanding how each contributes to the successful development of a wind farm. What are you waiting for to enroll?



02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.



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*Study at the world's largest online university
and guarantee your professional success.
The future starts at TECH”*

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



03

Syllabus

Among the core topics of the program, the principles of structural design and calculation of infrastructures related to wind farms, such as foundations and platforms for wind turbines, will be included. Aspects of geotechnics, surveying, and construction planning will also be examined, delving into site conditions and how they influence civil design. In addition, relevant regulations and quality standards will be addressed, along with environmental management and the impact of wind installations on the surrounding environment. Project planning and management methodologies will also be applied, ensuring the ability to tackle challenges during the design and construction process.

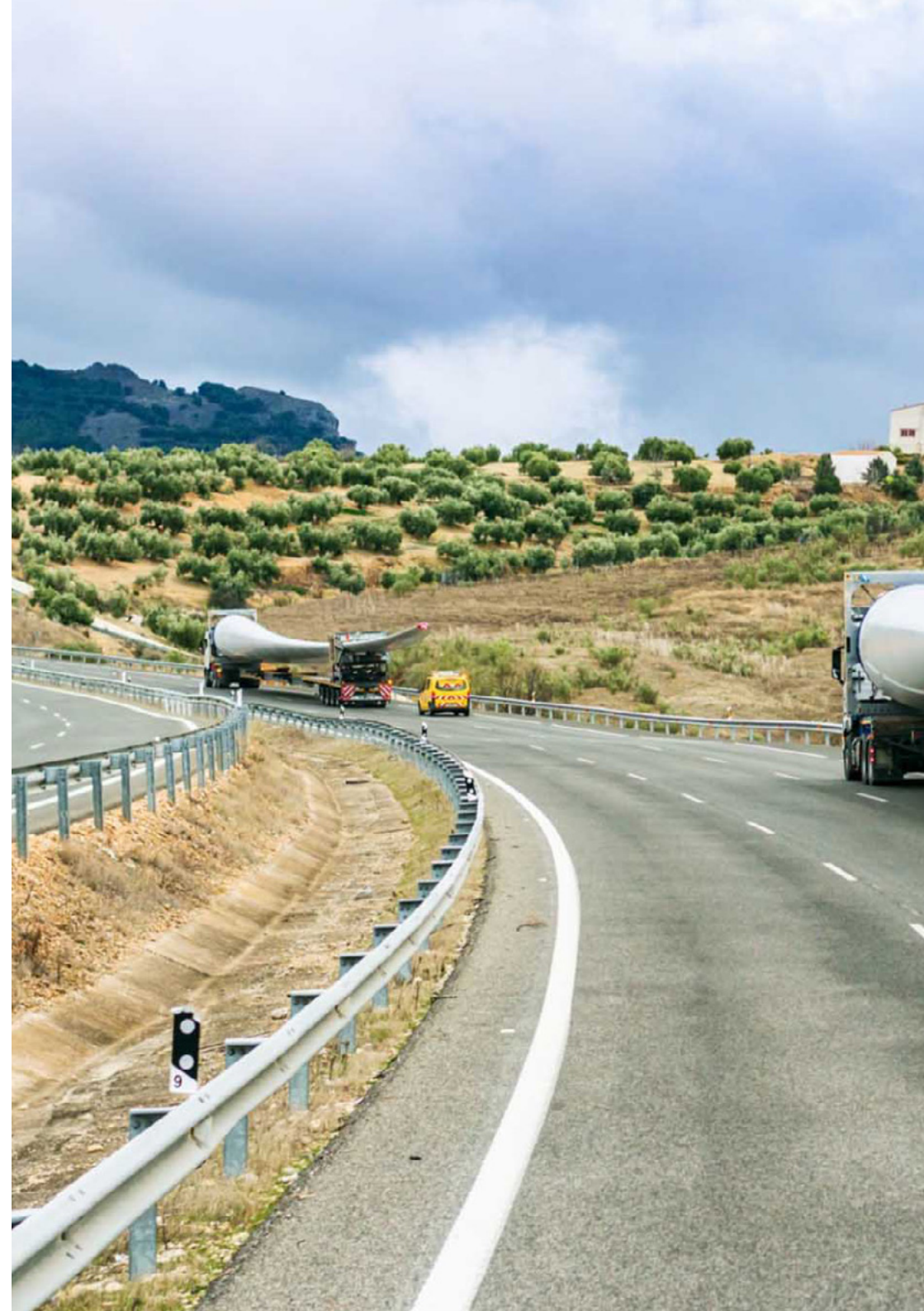


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The Civil Engineering program for Wind Farms will cover a wide range of topics, designed to equip engineers with the skills necessary for this constantly growing sector”

Module 1. Civil Engineering Design for Wind Farm Construction

- 1.1. Programming and Planning of Wind Farm Civil Works
 - 1.1.1. Civil Works for Wind Farms
 - 1.1.2. Project Analysis
 - 1.1.2. Engineering Process Scheduling and Planning
- 1.2. Wind Turbine Foundations
 - 1.2.1. International Regulatory Framework
 - 1.2.2. Types of Foundations
 - 1.2.3. Foundation Analysis Based on Ground Characteristics
- 1.3. Shallow Foundations for Wind Turbines
 - 1.3.1. Calculation Methodology
 - 1.3.2. Wind Turbine Foundation. Calculation Example
 - 1.3.3. Construction Procedure
- 1.4. Deep Foundations for Wind Turbines
 - 1.4.1. Calculation Methodology
 - 1.4.2. Wind Turbine and Wind Resource Tower Foundation. Calculation Example
 - 1.4.3. Construction Procedure
- 1.5. Roads and Access for Wind Farms
 - 1.5.1. Calculation Methodology
 - 1.5.2. Roads and Access for Wind Farms. Calculation Example
 - 1.5.3. Construction Procedure
- 1.6. Trenches for Cabling
 - 1.6.1. Trench Layout and Characterization
 - 1.6.2. Geometric Definition of Trenches
 - 1.6.3. Construction Procedure





- 1.7. Wind Turbine Assembly Platforms
 - 1.7.1. Calculation Methodology for Platform Design
 - 1.7.2. Platform Design. Calculation Example
 - 1.7.3. Wind Turbine Construction Procedure
- 1.8. Civil Works for the Substation. Power Transformer and Medium/High Voltage Equipment
 - 1.8.1. Civil Engineering Applied to the Substation
 - 1.8.2. Transformer Bank. Calculation Example
 - 1.8.3. Construction Procedure
- 1.9. Civil Works for the Substation. Control and Measurement Building
 - 1.9.1. Characterization of the Control and Measurement Building
 - 1.9.2. Floor Plan Description of a Control Building
 - 1.9.3. Construction Procedure

“You will become an agent of change, actively contributing to the fight against climate change and promoting a more sustainable future through the implementation of clean energy solutions”

04

Teaching Objectives

The objectives of the program will focus on providing engineers with comprehensive training, enabling them to become competent professionals in the design and construction of infrastructures related to Wind Energy. As such, they will be equipped with both theoretical and practical knowledge of the principles of Civil Engineering applied to wind farms and substations, as well as the regulations and standards within the sector. Additionally, skills in project planning and management will be developed, allowing students to identify and effectively address challenges that may arise during the design and execution stages.



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You will delve into the importance of sustainability and the environmental impact of wind farms, preparing you to actively contribute to the transition to Renewable Energy and the mitigation of climate change”

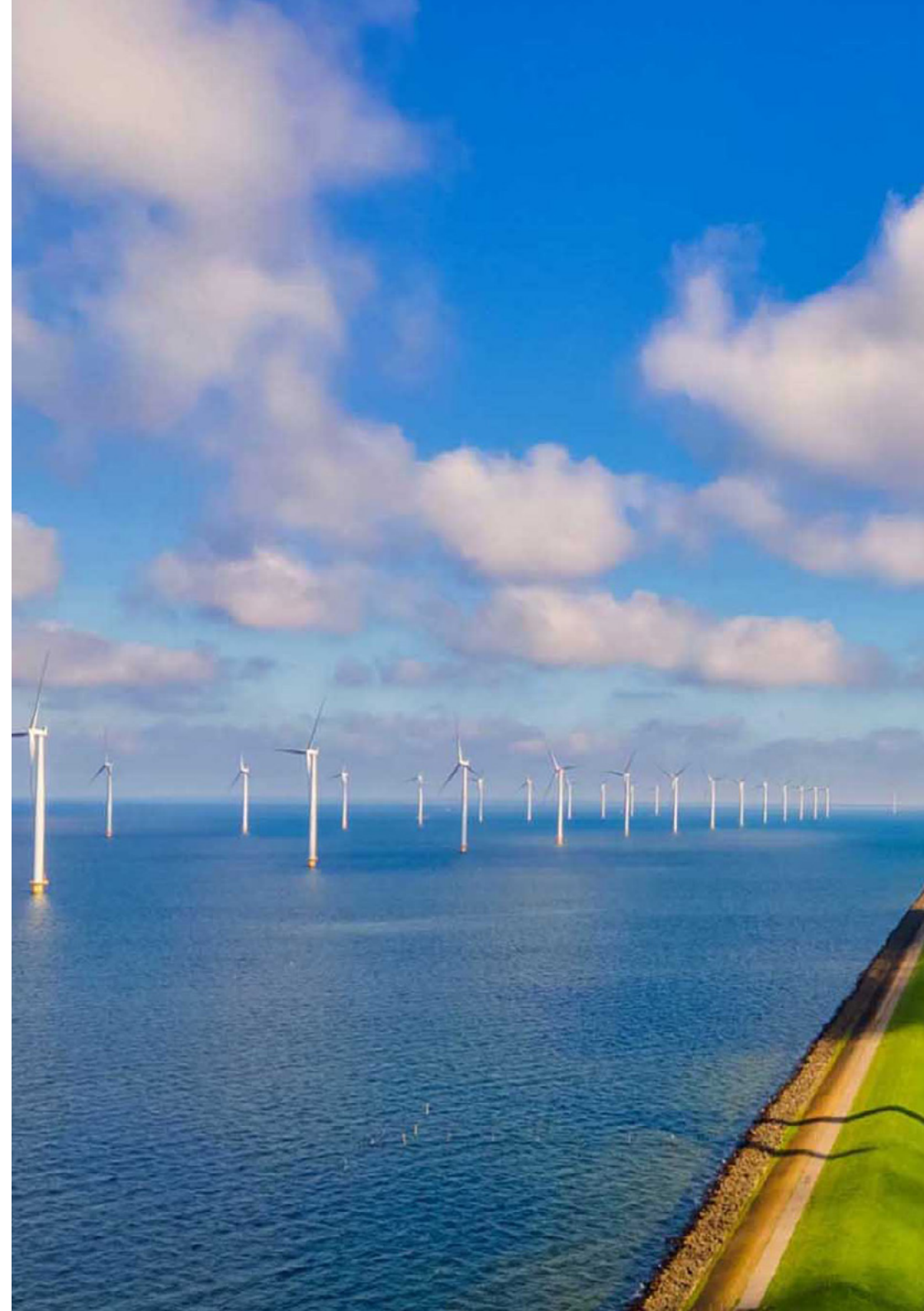


General Objectives

- ♦ Obtain theoretical and technical training on Civil Engineering for wind farms and substations
- ♦ Identify the different sectors of Civil Engineering that may be involved in wind farms and substations
- ♦ Acquire the skills to address the civil design of a wind farm and its associated substation



Develop problem-solving and strategic planning skills, highly valued in the professional field, with the guidance of the world's best digital university, according to Forbes: TECH"





Specific Objectives

- ♦ Apply a planning process in the initial stage of designing a Wind Farm and the associated substation
- ♦ Identify and design each civil engineering discipline involved in Wind Farms and substations
- ♦ Gain the ability to resolve problems that may arise during the design and calculation of the different components

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

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TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

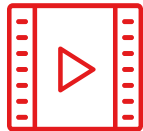
The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

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.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

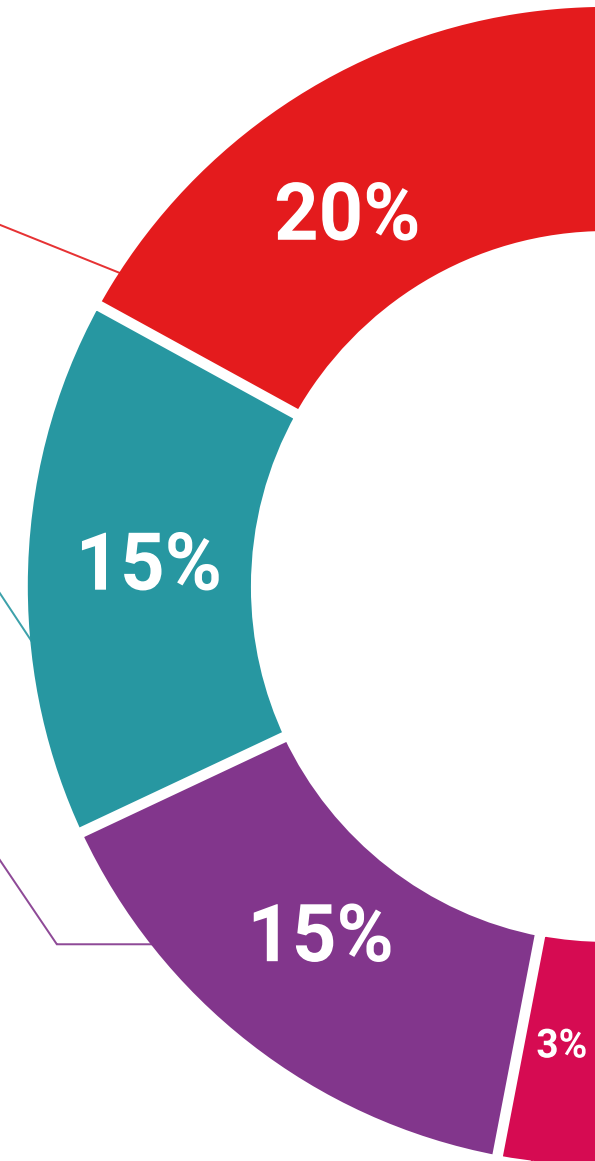
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

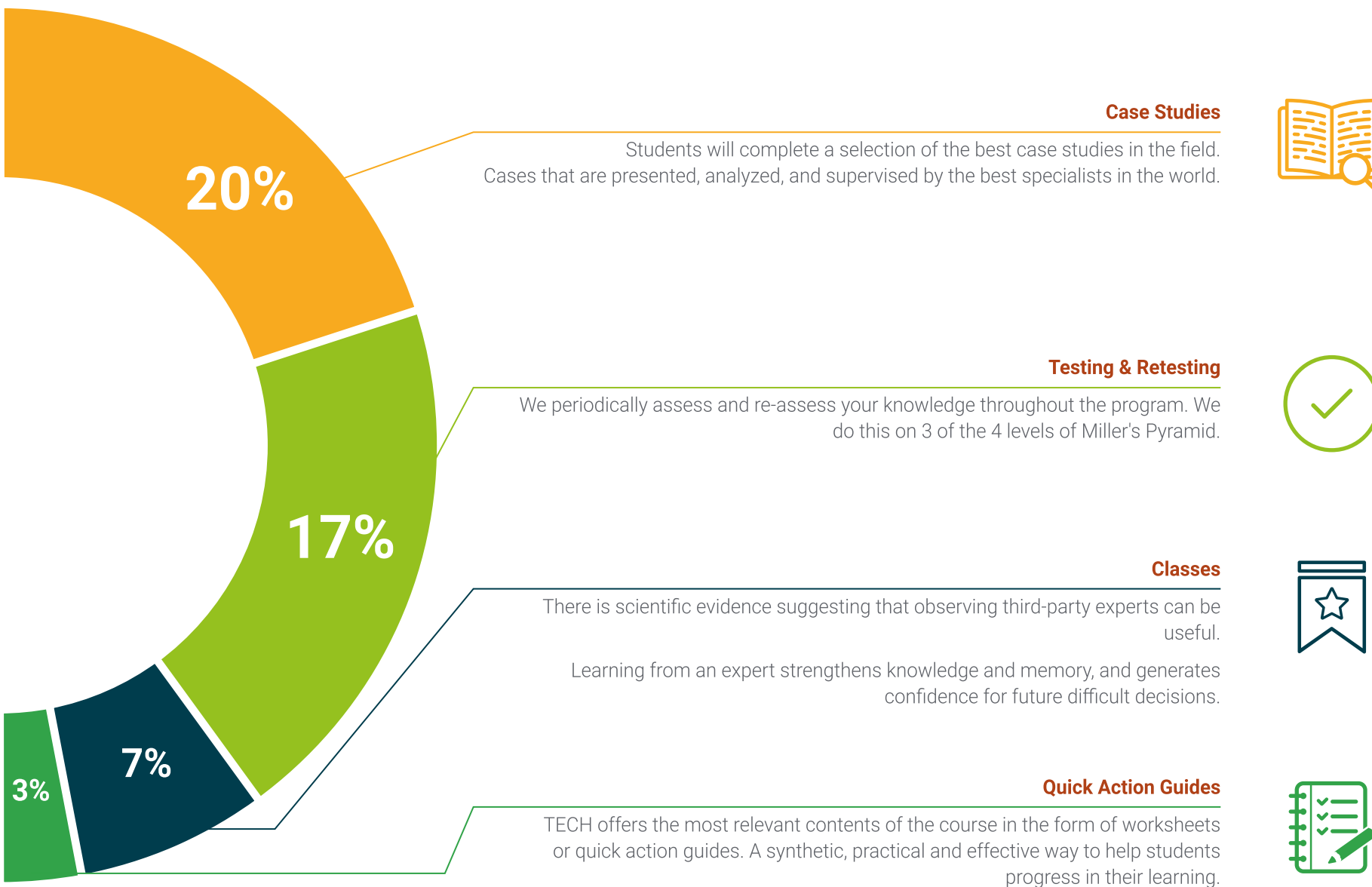
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

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





06

Teaching Staff

The teachers are highly qualified professionals with extensive experience in the fields of Engineering and Renewable Energy. In fact, the faculty includes civil engineers, renewable energy specialists, and project planning and management experts, who will provide a practical and up-to-date approach to teaching. Furthermore, thanks to their deep knowledge of current regulations, best industry practices, and emerging technologies, these mentors will offer graduates comprehensive training that combines both theory and practice.



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The teachers are actively involved in real-world wind farm development projects, allowing them to share valuable experiences and case studies that will enrich the learning process, preparing you for the job market”

Management



Mr. Melero Camarero, Jorge

- ♦ Deputy Director of Construction at Enery, Vienna
- ♦ Country Manager for Spain at Ezzing Solar
- ♦ General Manager of Environmental and Social Consulting at Natura Medioambiente
- ♦ Deputy Director of the Renewable Energy Division at Alatec Ingenieros Consultores y Arquitectos
- ♦ Director of the Renewable Energy Department at Gestionna Soluciones Energéticas
- ♦ Renewable Energy Project Director at ABO Wind Spain
- ♦ Master's Degree in Business Administration (MBA)
- ♦ Master's Degree in Renewable Energy Consulting
- ♦ Bachelor's Degree in Industrial Engineering from the Polytechnic University of Valencia



Teachers

Mr. Gea de la Torre, Francisco Javier

- ♦ Engineering Director at EOSOL
- ♦ Head of the Engineering Team in Spain at EOSOL
- ♦ Civil Supervisor of Wind Farm, in the Community of Aragon, at EOSOL
- ♦ Coordinator of the Civil Engineering Department and Project Manager at EOSOL
- ♦ Civil Engineer for Electrical Substations, Photovoltaic Plants, and Wind Farms at EOSOL
- ♦ Master in Business Administration (MBA) from the University of Barcelona
- ♦ Master's Degree in Civil Engineering from the University of Santander
- ♦ Graduate in Civil Engineering, specializing in Civil Construction, from the University of Jaén
- ♦ Bachelor's Degree in Civil Engineering from the University of Santander



Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

07

Certificate

This Postgraduate Certificate in Civil Engineering for Wind Farms guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Postgraduate Certificate issued by TECH Global University.



“

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 diploma for the **Postgraduate Certificate in Civil Engineering for Wind Farms** 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 Civil Engineering for Wind Farms**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



Postgraduate Certificate Civil Engineering for Wind Farms

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Postgraduate Certificate Civil Engineering for Wind Farms