

# Postgraduate Certificate Energy Production



## Postgraduate Certificate Energy Production

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

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

# 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

Renewable energies are winning the battle against fossil fuels and pollutants. More and more institutions and private companies are looking for ways to produce alternative energies that reduce environmental pollution. Train with this complete program and acquire the skills you need to develop your profession in this field, following the highest quality standards.





“

*A comprehensive and multidisciplinary course that will allow you to excel in your career, following the latest advances in Energy Production"*

The current energy landscape is dominated by energy sources based on fossil fuels. However, this energy model presents problems such as the increase in greenhouse gas emissions and the existence of a limited amount of reserves, which are also concentrated in a few countries. The use of renewable energy, such as solar photovoltaic, wind or even biogas can be the solution to solve the problems presented by the current energy model.

Therefore, this program studies the use of energy, both from biogas and water, using renewable energies and hydrogen. Furthermore, the safety issues of these two gases will be addressed.

With this course, the student will learn that there are other sources of energy and technologies that can replace fossil fuels and will enable them to design systems based on biogas or hydrogen.

It should be noted that as this is a 100% online course, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Energy Production** 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 the field of energy production.
- » 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 focus on innovative methodologies in Energy Production
- » Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- » The availability of access to the contents from any fixed or portable device with internet connection.



*Don't miss the opportunity to participate in this Postgraduate Certificate in Energy Production. It's the perfect opportunity to advance your career"*

“

*This program is the best investment you can make in selecting a refresher program to bring your Energy Production knowledge up to date”*

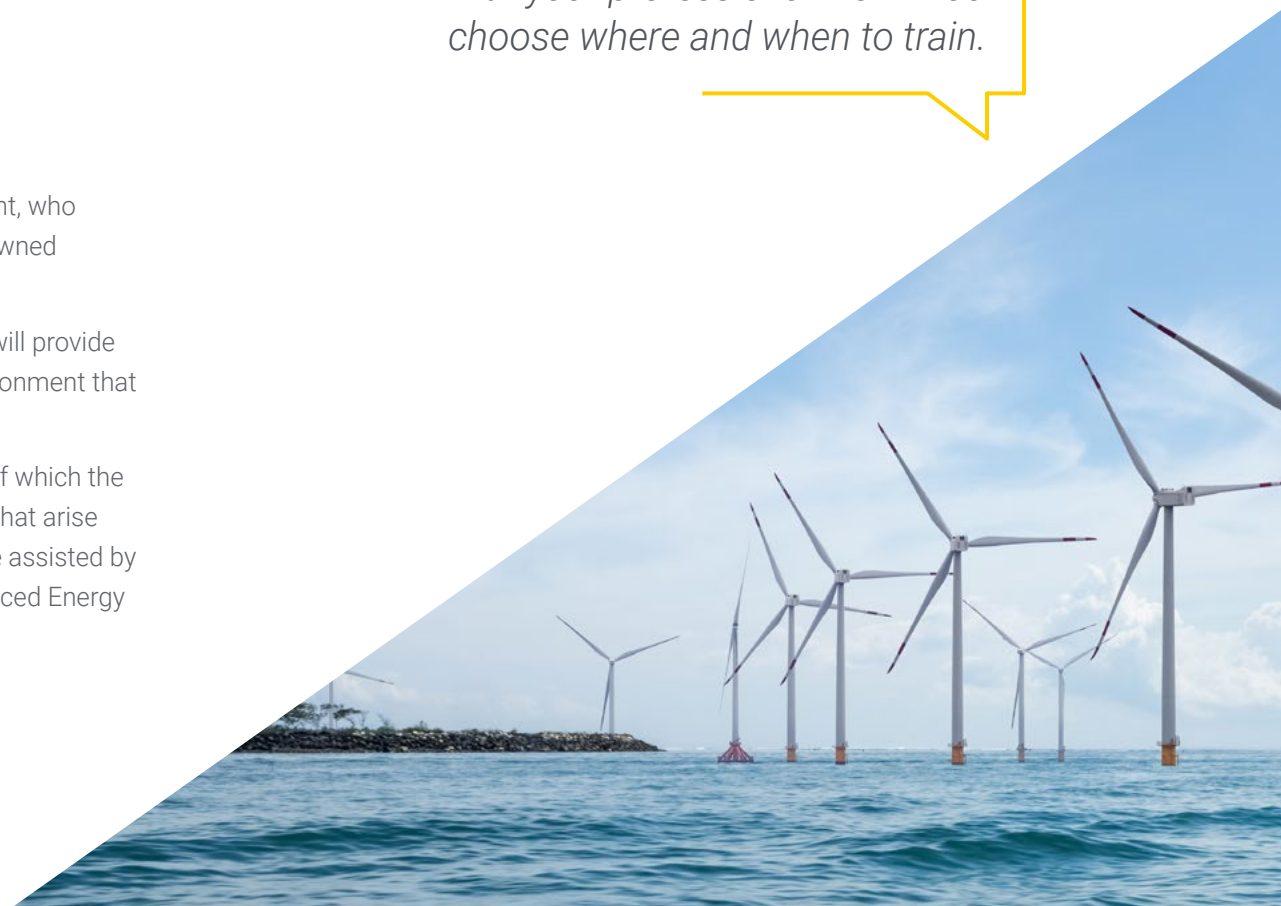
Its teaching staff includes professionals from the field of waste management, who contribute their work experience to this training program, in addition to renowned specialists from leading companies and prestigious universities.

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.

The design of this program focuses on problem-based learning, by means of which the professional must try to solve the different professional practice situations that arise throughout the academic program. For this purpose, the professional will be assisted by an innovative interactive video system developed by renowned and experienced Energy Production experts.

*This training is provided with the best didactic material, which will allow for contextual study to facilitate your learning.*

*This 100% online course will allow you to combine your studies with your professional work. You choose where and when to train.*



02

# Objectives

The Postgraduate Certificate in Energy Production program is aimed at helping the professional to acquire and learn about the main new advances in this field.





“

*Our goal is to make you the best professional in your sector. And for this we have the best methodology and content"*



## General Objectives

---

- » Deepen understanding of the different energy carriers such as biogas or hydrogen in its molecular form ( $H_2$ ) for its subsequent energy use, allowing the student to make designs based on hydrogen or biogas.

“ Take the step to get up to date on the latest developments in Energy Production”





## Specific Objectives

---

- » Learn more about obtaining, conditioning, storing and using biogas.
- » Analyze the global energy landscape, as well as other energy solutions based on renewable energies.
- » Understand the hydrogen economy
- » Study fuel cells whose purpose is to produce electricity from hydrogen.

03

# Course Management

In our university we have professionals specialized in each area of knowledge, who bring their work experience to our training courses.



A row of wind turbines on a hill at sunset, with a large quote mark graphic.

“

*In our university work the best professionals in all areas who share their knowledge to help you"*

## Management



### Mr. Nieto-Sandoval González Nicolás, David

- ♦ Industrial Technical Engineer by the E.U.P. of Málaga.
- ♦ Industrial Engineer by E.T.S.I.I.
- ♦ Master's Degree in Integral Management of Quality, Environment and Health and Safety at Work from the University of the Balearic Islands
- ♦ Working for more than 11 years as a consultant in engineering, project management, energy saving and circularity in organizations, he has been working both for companies and on his own account for clients in the private agri-food industry and the institutional sector for more than 11 years.
- ♦ Professor certified by the EOI in the areas of Industry, Entrepreneurship, Human Resources, Energy, New Technologies, and Technological Innovation.
- ♦ Trainer of the European INDUCE project
- ♦ Trainer in institutions such as COGITI and COIIM.

## Professors

### Mrs. Mullor Real, Cristina

- » Graduate in Environmental Sciences from the Miguel Hernández University of Elche.
- » Master's Degree in Environmental Engineering, specializing in industrial environmental management and management of water treatment plants from the University of Valencia.
- » Experience as an Environmental Consultant in various industrial sectors.
- » Safety Advisor for the transport of dangerous goods by road.



04

# Structure and Content

The structure of the contents has been designed by the best professionals of the Energy Production with a wide trajectory and recognized prestige in the profession.





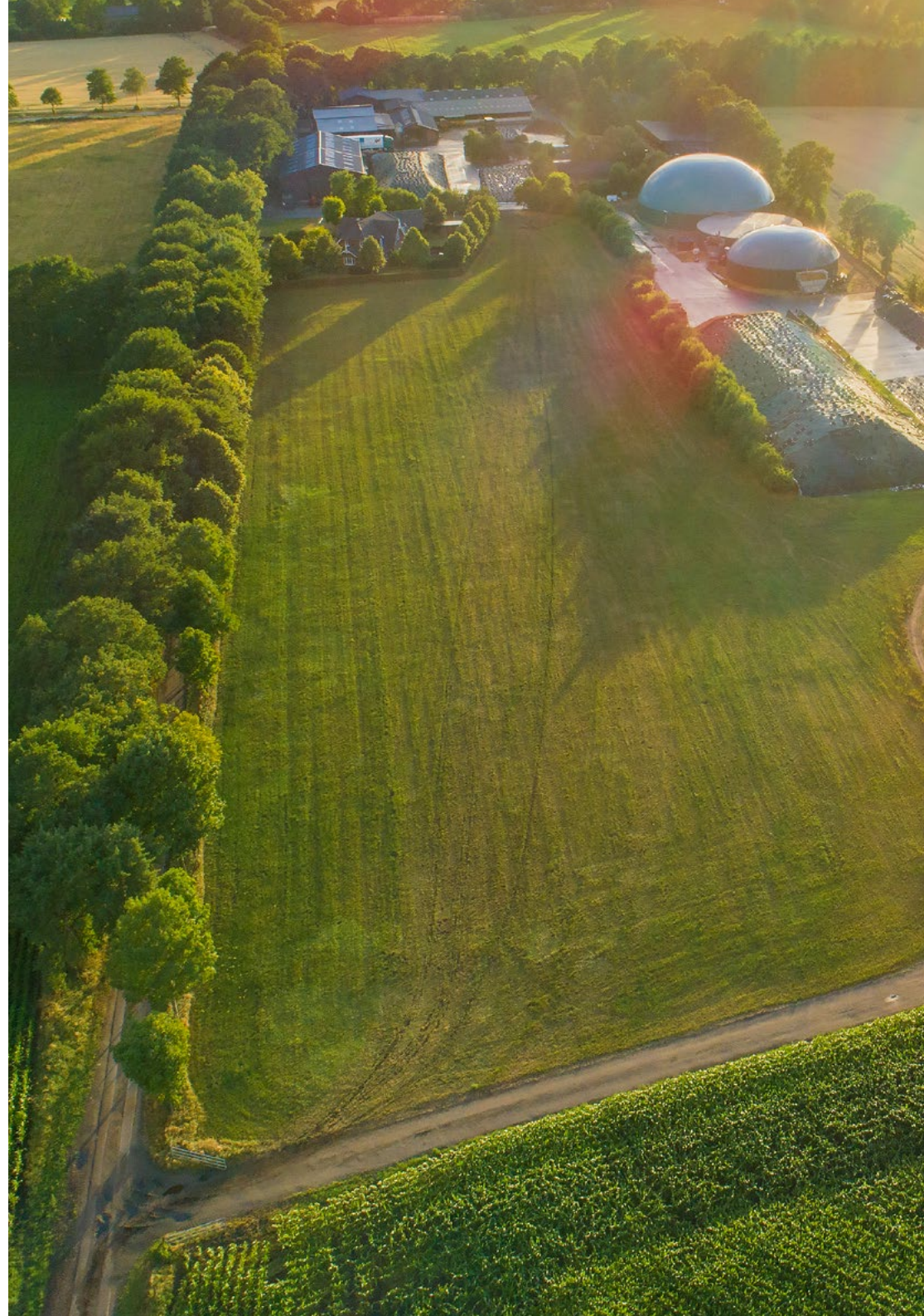


“

*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. Energy Production

- 1.1. Biogas Production
  - 1.1.1. Products from the Activated Sludge Process
  - 1.1.2. Anaerobic Digestion
  - 1.1.3. Fermentation Stage
  - 1.1.4. Biodigester
  - 1.1.5. Production and Characterization of the Generated Biogas
- 1.2. Biogas Conditioning
  - 1.2.1. Hydrogen Sulfide Removal
  - 1.2.2. Moisture Removal
  - 1.2.3. CO<sub>2</sub> Elimination
  - 1.2.4. Elimination of Siloxanes
  - 1.2.5. Oxygen and Halogenated Organic Compounds Removal
- 1.3. Biogas Storage
  - 1.3.1. Gasometer
  - 1.3.2. Almacenamiento del biogás
  - 1.3.3. High Pressure Systems
  - 1.3.4. Low Pressure Systems
- 1.4. Biogas Flaring
  - 1.4.1. Burners
  - 1.4.2. Burner Characteristics
  - 1.4.3. Burner Installation
  - 1.4.4. Flame Control
  - 1.4.5. Low Cost Burners
- 1.5. Uses of Biogas
  - 1.5.1. Biogas Boiler
  - 1.5.2. Gas Motor Generator
  - 1.5.3. Turbine
  - 1.5.4. Gas Rotary Machine
  - 1.5.5. Injection into the Natural Gas Grid
  - 1.5.6. Energy Calculations from Natural Gas Use





- 1.6. Current Energy Scenario
  - 1.6.1. Use of Fossil Fuels
  - 1.6.2. Nuclear Energy
  - 1.6.3. Renewable Energies
- 1.7. Energías renovables
  - 1.7.1. Photovoltaic Solar Energy
  - 1.7.2. Wind Energy
  - 1.7.3. Hydropower
  - 1.7.4. Geothermal Energy
  - 1.7.5. Energy Storage
- 1.8. Hydrogen as an Energy Vector
  - 1.8.1. Integration with Renewable Energies
  - 1.8.2. Hydrogen Economy
  - 1.8.3. Hydrogen Production
  - 1.8.4. Use of Hydrogen
  - 1.8.5. Energy Production
- 1.9. Fuel Cells
  - 1.9.1. Operation
  - 1.9.2. Types of Fuel Cells
  - 1.9.3. Microbial Fuel Cells
- 1.10. Gas Handling Safety
  - 1.10.1. Risks: Biogas and Hydrogen
  - 1.10.2. Explosion Safety
  - 1.10.3. Safety Measures
  - 1.10.4. Inspection

“ *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 is developed through a cyclical learning mode: ***Re-learning***.

This system of teaching is used in the most prestigious medical schools in the world and has been and has been considered one of the most effective by leading publications 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.

“

*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.*



*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 Hazardous Waste course is an intensive program that 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 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.



*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.

## 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 innovative 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 Spanish-speaking countries 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.

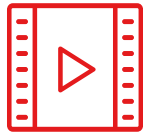
*Re-learning will allow you to learn with less effort  
and better performance, involving you more  
in your training, developing a critical mindset,  
defending arguments, and contrasting opinions:  
a direct equation to success.*

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 teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is really 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.



### Classes

There is scientific evidence on the usefulness of third-party expert observation.

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



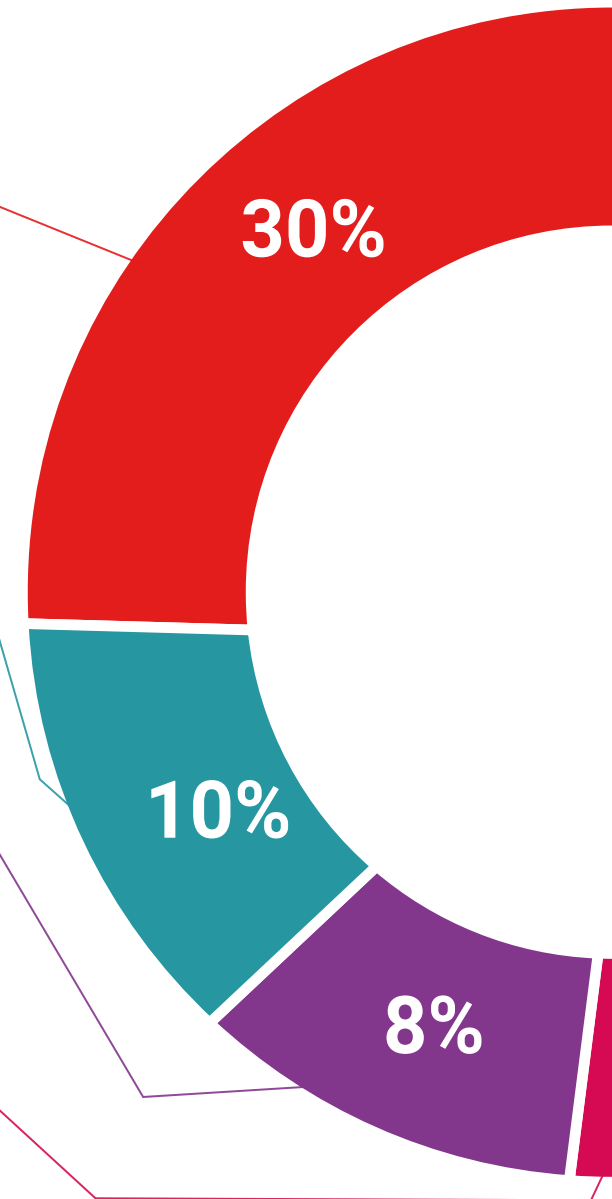
### Practising Skills and Abilities

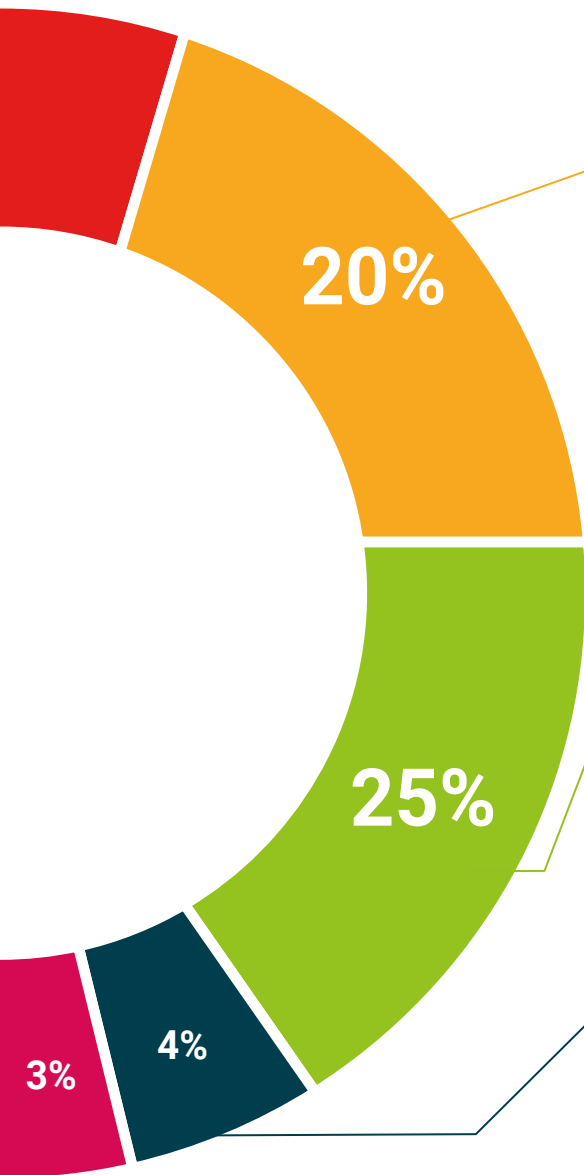
You will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



### 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 & Re-Testing

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 achieve the necessary competencies to take a big step forward in your training. An opportunity to progress, with the support and follow-up of a modern and specialized university, which will project you to another professional level.



“

*Include in your training a program Postgraduate Certificate in Energy Production: a high added value qualification for any professional in this area"*

This **Postgraduate Certificate in Energy Production** contains the most complete and up to date scientific program on the market.

After the student has passed the evaluations, they will receive their corresponding Postgraduate Certificate issued by **TECH Technological University**.

The diploma issued by **TECH Technological University** will express the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by job exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Energy Production**

ECTS: **6**

Official Number of Hours: **150**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION 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

online training

development language

classroom

**tech** technological  
university

## Postgraduate Certificate Energy Production

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Certificate Energy Production