

# Postgraduate Diploma Energy Analysis and Energy Improvement Actions in Buildings





## Postgraduate Diploma Energy Analysis and Energy Improvement Actions in Buildings

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

Website: [www.techtute.com/us/engineering/postgraduate-diploma/energy-analysise-energy-improvement-actions-buildings](http://www.techtute.com/us/engineering/postgraduate-diploma/energy-analysise-energy-improvement-actions-buildings)

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# 01

# Introduction

This very complete Postgraduate Diploma develops the content related to the actions related to Energy Saving in New Buildings, analyzing the methodology to be followed, the analysis of the Constructive Pathologies, the regulatory framework, the possible proposals for intervention, as well as the possible problems in the development.

In this way, the different singular encounters of elements that constitute the Thermal Envelope and that are the object of the optimization of the thermal envelope are analyzed, such as Foundations, Roofs, Façades, External Slabs, Carpentries and Glass and the existing Installations. An approach that is directly related to energy savings in the facilities and that will close this great Postgraduate Diploma, with the development of all aspects of the energy audit in buildings.



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*Acquire the most advanced and up-to-date knowledge in the field of Energy Analysis and Energy Improvement Actions with a highly qualified expert and training impact"*

Throughout the program, the content related to the actions related to Energy Saving in New Buildings is developed, analyzing the methodology to follow, the analysis of the Constructive Pathologies, the regulatory framework, the possible proposals for intervention, as well as the possible problems in the development.

In this way, the different singular encounters of elements that constitute the Thermal Envelope and that are the object of the optimization of the thermal envelope are analyzed, such as Foundations, Roofs, Façades, External Slabs, Carpentries and Glass and the existing Installations.

This module presents the concepts and methodology for the development of Energy Audits of Existing Buildings as a tool for analysis, control and checking of the Energy Performance Measures (EPM) to be developed in the building in order to obtain an optimal building in terms of energy demand.

We will describe the methodology to be followed, emphasizing the importance of the Energy Diagnosis, engine of the Energy Audit, and the benefits obtained at the end of the study analysis, since a reality of the energy demand of the building is obtained and from this analysis we will be aware of the energy reality.

We will analyze the Action Measures, developing a concise analysis of objectives and selection of proposals to be developed based on the requested criteria.

In addition, we will analyze the economic justification of the selection of measures to be developed with a complete cost-maintenance analysis in order to optimize the expenditure based on the cost reduction throughout the useful life of the building.

The normative guidelines that regulate the development of Energy Audits will be established, as well as the last National Energy Efficiency Plan, UNE standards and several Directives that regulate the sector.

This module develops the content related to the study of the most important installations to be implemented in buildings with high Energy Efficiency according to the technical criteria of the work.

This **Postgraduate Diploma in Energy Analysis and Energy Improvement Actions in Buildings** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ Latest technology in online teaching software
- ◆ Highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- ◆ Practical cases presented by practising experts
- ◆ State-of-the-art interactive video systems
- ◆ Teaching supported by telepractice
- ◆ Continuous updating and recycling systems
- ◆ Self-regulating learning: full compatibility with other occupations
- ◆ Practical exercises for self-evaluation and learning verification
- ◆ Support groups and educational synergies: questions to the expert, debate and knowledge forums
- ◆ Communication with the teacher and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection
- ◆ internet connection
- ◆ Supplementary documentation databases that are permanently available, even after the course has concluded



*Join the elite, with this highly effective training training and open new paths to help you advance in your professional progress"*



*With the experience of active professionals and the analysis of real cases of success in the application and use of energy saving systems in buildings"*

Our teaching staff is made up of professionals from different fields related to this specialty. In this way, we ensure that we provide you with the educational update we are aiming for. A multidisciplinary team of professionals trained and experienced in different environments, who will develop the theoretical knowledge in an efficient way, but above all, they will bring their practical knowledge from their own experience to the course: one of the differential qualities of this training.

This mastery of the subject matter is complemented by the effectiveness of the methodological design. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. This way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your education.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice: with the help of an innovative interactive video system, and learning from an expert, you will be able to acquire the knowledge as if you were actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

*With a methodological design based on proven teaching techniques, this innovative course will use a range of teaching approaches to allow you to learn in a dynamic and effective way.*

*Our innovative telepractice concept will give you the opportunity to learn through an immersive experience, which will provide you with a faster integration and a much more realistic view of the contents: "learning from an expert".*



02

# Objectives

Our objective is to train highly qualified professionals for work experience. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is materialized in helping professionals to reach a much higher level of competence and control. A goal that, in just a few months, you will be able to achieve with high intensity and effective educational program.







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*If your objective is to broaden your skills set to include new paths of success and development, this is your Professional Master's Degree: a training that aspires to excellence"*



## General Objectives

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- ◆ Undertake the particularities to correctly manage the design, project, construction and execution of Energy Rehabilitation Works (Existing Buildings) and Energy Saving (New Buildings)
- ◆ Interpret the current regulatory framework based on current regulations and the possible criteria to be implemented for energy efficiency in buildings
- ◆ Discover the potential business opportunities offered by the knowledge of the various energy efficiency measures, from studying tenders and technical tenders for construction contracts, projecting buildings, analyzing and directing the works, managing, coordinating and planning the development of Energy Saving and Rehabilitation Projects
- ◆ Ability to analyze Building Maintenance programs developing the study of appropriate Energy Saving measures to be implemented according to the technical requirements
- ◆ Delve into the latest trends, technologies and techniques in the field of Energy Efficiency in Buildings



*This program will allow you to advance in your career comfortably”*



## Specific Objectives

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- ◆ Know the building categories, an analysis of the constructive solutions and objectives to be achieved, as well as the elaboration of a cost study of the various intervention proposals
- ◆ Interpret the possible pathologies of new buildings based on the study of foundations, roofs, facades and exterior slabs, carpentry and glazing, as well as installations, developing the complete energy rehabilitation study from data collection, analysis and evaluation, the study of the different improvement proposals and conclusions, study of the applicable technical regulations
- ◆ Establish the guidelines that must be taken into account in the development of new building interventions with energy saving in singular buildings, from data collection, analysis and evaluation, study of the different improvement proposals and conclusions, study of technical regulations of application
- ◆ Acquire the necessary knowledge to develop an economic study of New Energy Saving Works based on the analysis of the cost, execution times, the conditions of specialization of the works, the guarantees and specific tests to be requested
- ◆ Elaborate an assessment of the appropriate intervention of a New Energy Efficiency Building intervention and its alternatives based on the analysis of the different intervention options, based on the analysis of costs based on amortization, the correct selection of objectives, as well as a final extract with the possible courses of action
- ◆ Discuss in detail the scope of an energy audit, the fundamental general concepts, objectives and analysis methodology
- ◆ Analyze the energy diagnosis based on the analysis of the envelope and systems, the analysis of consumption and energy accounting, the proposal of renewable energies to be implemented, as well as the proposal of various consumption control systems

- ◆ Analyze the benefits of an Energy Audit based on energy consumption, energy costs, environmental improvements, competitiveness improvements and building maintenance improvements
- ◆ Establish the guidelines that must be taken into account in the development of the energy audit such as the request of previous documentation of planimetries and invoices, visits to the building in operation, as well as the necessary equipment
- ◆ Gather previous information about the building to be audited based on general data, planimetries, previous projects, list of installations and technical data sheets, as well as energy invoices
- ◆ Elaborate preliminary data collection procedures with energy inventory, construction aspects, systems and installations, electrical measurements and operating conditions
- ◆ Interpret the analysis and evaluation of the envelope, systems and installations, the different options for action, energy balances and energy accounting of the building
- ◆ Develop a program of improvement proposals based on the energy supply and demand of the building, the type of action to be carried out, the optimization of the envelope and the systems and installations, as well as develop a final report that concludes the study developed
- ◆ Plan the development costs of the Energy Audit based on the scale of the building to be analyzed
- ◆ Delve into the current regulations and future forecasts in energy matters that condition the implementation of the measures proposed in the energy audit
- ◆ Delve into the study of the scope of the study of air conditioning installations, such as parameters relating to the definition, application regulations, technical justifications and various innovative solutions depending on the nature of the building
- ◆ Delve into the study of aerothermal installations, such as definition parameters, application standards, technical justifications and various innovative solutions depending on the nature of the building
- ◆ You will acquire detailed knowledge in the study of ventilation installations with heat recovery, such as parameters related to the definition, application regulations, technical justifications and various innovative solutions depending on the nature of the building
- ◆ Select the type of boiler and pumps with high energy efficiency and air conditioning through radiant floors and ceilings based on the applicable regulations, technical justifications and various innovative solutions depending on the nature of the building
- ◆ Discover the installation opportunities of the Free-cooling system by analyzing its definition, application regulations, technical justifications and various innovation solutions depending on the nature of the building
- ◆ Analyze energy-efficient building lighting and conveyor systems
- ◆ Plan and control the construction of appropriate solar thermal and photovoltaic systems
- ◆ Know the operation of building energy consumption control systems through home automation and Best Management System (BMS)

03

# Course Management

For our course to be of the highest quality, we are proud to work with a teaching staff of the highest level, chosen for their proven track record. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.





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

## Management



### Ms. Peña Serrano, Ana Belén

- Content writer on renewable energies and energy efficiency for leading technical magazines and websites
- Technical Engineering in Topography by the Polytechnic University of Madrid
- Master's Degree in Renewable Energies from San Pablo CEU University
- Qualifying training in Wind Energy Installations by LevelCOM Formación
- Energy Certification of Buildings by Fundación Laboral de la Construcción
- Geological Cartography by the Universidad Nacional de Educación a Distancia (National University of Distance Education)
- Collaborates in different scientific communication projects, directing the dissemination of engineering and energy in different media
- Director of renewable energy projects of the Master in Environmental and Energy Management in Organizations of the UNIR..
- Teacher of the Professional Master's Degree in Energy Saving and Sustainability in Buildings and several other programs at TECH-Technological University

## Professors

### Mr. Almenara Rodríguez, José Luís

- ◆ Industrial Technical Engineer
- ◆ Technical Industrial Chemical Engineering from the Polytechnic University of Catalonia
- ◆ Advanced Course in Safety Management. Prosulting. Rey Juan Carlos University
- ◆ Specialization Course in Photovoltaic Solar Energy by the Polytechnic University of Catalonia
- ◆ Expert Course in Energy Management of Buildings and Installations (Structuralia)
- ◆ Energy Certification and External Control Course (Structuralia)
- ◆ Course on Water Management and Control in Industry (Stenco)
- ◆ More than 10 years of experience in the technical management of healthcare facilities (technical reports, supervision of maintenance services, cost control of spare parts, improvement proposals, preparation of comparative reports, monitoring and implementation of Energy Efficiency Plans in hospital facilities)
- ◆ He has developed his activity in the civil works sector, with an outstanding role as quality and environmental manager in linear works

### Mr. Peñarrubia Ramírez, Álvaro

- ◆ Specialist in renewable energies and energy efficiency in building construction
- ◆ Technical Industrial Electronic Engineering from the University of Castilla– La Mancha
- ◆ Master's Degree in Thermal and Electrical Installations Energy Efficiency Energy Efficiency at Miguel Hernández University
- ◆ Course of Photovoltaic Installations of self-consumption of power <100kW by the Official College of Technical Engineers of Albacete
- ◆ Course of Energy Auditor in Industry. R.D. 56/2016 by the School of Business School FED
- ◆ He has worked in various fields of engineering, such as electronic security, home automation, telecommunications, railway electrification, programming and the beverage bottling industry. In addition, he has coordinated R&D&I projects



*An impressive teaching staff, made up of professionals from different areas of expertise, will be your teachers during your training: a unique opportunity not to be missed”*

# 04

# Structure and Content

The contents of this training have been developed by different experts a clear purpose: to ensure that our students acquire each and every one of the skills necessary to become true experts in this field.

A complete and well-structured program that will take you to the highest standards of quality and success.







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*A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life"*

## Module 1. Energy Saving in New Buildings

- 1.1. Methodology
  - 1.1.1 Establishment of Building Categories
  - 1.1.2 Analysis of Construction Solutions
  - 1.1.3 Analysis of the Objectives of the Regulations
  - 1.1.4 Elaboration of the Cost of the Intervention Proposals
- 1.2. Foundation Studies for New Construction
  - 1.2.1 Type of Action
  - 1.2.2 Analysis and Evaluation
  - 1.2.3 Intervention Proposals and Conclusions
  - 1.2.4 Technical Regulations
- 1.3. Studies of New Construction Roofs
  - 1.3.1 Type of Action
  - 1.3.2 Analysis and Evaluation
  - 1.3.3 Intervention Proposals and Conclusions
  - 1.3.4 Technical Regulations
- 1.4. Studies of New Building Facades
  - 1.4.1 Type of Action
  - 1.4.2 Analysis and Evaluation
  - 1.4.3 Intervention Proposals and Conclusions
  - 1.4.4 Technical Regulations
- 1.5. External Floor Slab Studies for New Buildings
  - 1.5.1 Type of Action
  - 1.5.2 Analysis and Evaluation
  - 1.5.3 Intervention Proposals and Conclusions
  - 1.5.4 Technical Regulations
- 1.6. Studies of Carpentry and Glazing of New Buildings
  - 1.6.1 Type of Action
  - 1.6.2 Analysis and Evaluation
  - 1.6.3 Intervention Proposals and Conclusions
  - 1.6.4 Technical Regulations

- 1.7. Analysis of New Construction Installations
  - 1.7.1 Type of Action
  - 1.7.2 Analysis and Evaluation
  - 1.7.3 Intervention Proposals and Conclusions
  - 1.7.4 Technical Regulations
- 1.8. Studies of Options for Energy Saving Measures in Singular Buildings
  - 1.8.1 Type of Action
  - 1.8.2 Analysis and Evaluation
  - 1.8.3 Intervention Proposals and Conclusions
  - 1.8.4 Technical Regulations
- 1.9. Economic Study of the Different Alternatives for Energy Saving in New Buildings
  - 1.9.1 Cost Analysis
  - 1.9.2 Time Analysis
  - 1.9.3 Specialization of the Works
  - 1.9.4 Guarantees and Specific Tests
- 1.10. Evaluation of the Appropriate Solution and Alternatives
  - 1.10.1 Analysis of the Different Intervention Options
  - 1.10.2 Cost Analysis on a Depreciation Basis
  - 1.10.3 Target Selection
  - 1.10.4 Final Assessment of the Selected Intervention

## Module 2. Energy Audit

- 2.1. The Scope of an Energy Audit
  - 2.1.1 Main Concepts
  - 2.1.2 Objectives
  - 2.1.3 The Scope of an Energy Audit
  - 2.1.4 The Methodology of an Energy Audit
- 2.2. Energy Diagnosis
  - 2.2.1 Analysis of the Enclosure Vs. Systems and Installations
  - 2.2.2 Consumption Analysis and Energy Accounting
  - 2.2.3 Renewable Energy Proposals and
  - 2.2.4 Proposals for home automation, telemanagement and automation systems



- 2.3. Benefits of an Energy Audit
  - 2.3.1 Energy Consumption and Energy Costs
  - 2.3.2 Environmental Improvement
  - 2.3.3 Improved Competitiveness
  - 2.3.4 Improved Maintenance
- 2.4. Development Methodology
  - 2.4.1 Previous Documentation Request. Planimetry
  - 2.4.2 Previous Documentation Request. Invoices
  - 2.4.3 Visits to the Building in Operation
  - 2.4.4 Necessary Equipment
- 2.5. Information Gathering
  - 2.5.1 General Data
  - 2.5.2 Planimetries
  - 2.5.3 Projects. List of Installations.
  - 2.5.4 Technical Data Sheets. Energy Invoicing
- 2.6. Data Collection
  - 2.6.1 Energy Inventory
  - 2.6.2 Construction Aspects
  - 2.6.3 Systems and Installations
  - 2.6.4 Electrical Measurements and Operating Conditions
- 2.7. Analysis and Evaluation
  - 2.7.1 Envelope Analysis
  - 2.7.2 Analysis of Systems and Installations
  - 2.7.3 Evaluation of Performance Options
  - 2.7.4 Energy Balances and Energy Accounting
- 2.8. Proposals for Improvement and Conclusions
  - 2.8.1 Energy Supply/Demand
  - 2.8.2 Type of Action to be Taken
  - 2.8.3 Envelope and Systems and Installations
  - 2.8.4 Final Report

- 2.9. Economic valuation vs. scope
  - 2.9.1 Cost of Housing Audit
  - 2.9.2 Cost of Residential Building Audit
  - 2.9.3 Cost of Tertiary Building Audit
  - 2.9.4 Audit Cost of Shopping Center
- 2.10. Current Regulations
  - 2.10.1 National Energy Efficiency Plan
  - 2.10.2 Standard UNE 16247:2012. Energy audits Requirements
  - 2.10.3 Cop21. Directive 2012/27/ EU
  - 2.10.4 Cop25. Chile-Madrid

### Module 3. Energy Saving in Facilities

- 3.1. Air Conditioning Installations
  - 3.1.1 Definition
  - 3.1.2 Regulations
  - 3.1.3 Technical Justifications
  - 3.1.4 Innovation Solutions
- 3.2. Aerothermal Power
  - 3.2.1 Definition
  - 3.2.2 Regulations
  - 3.2.3 Technical Justifications
  - 3.2.4 Innovation Solutions
- 3.3. Ventilation with Heat Recovery
  - 3.3.1 Definition
  - 3.3.2 Regulations
  - 3.3.3 Technical Justifications
  - 3.3.4 Innovation Solutions
- 3.4. Selection of Energy-Efficient Boilers and Pumps
  - 3.4.1 Definition
  - 3.4.2 Regulations
  - 3.4.3 Technical Justifications
  - 3.4.4 Innovation Solutions





- 3.5. Air Conditioning Alternatives: Floor/Ceilings
  - 3.5.1 Definition
  - 3.5.2 Regulations
  - 3.5.3 Technical Justifications
  - 3.5.4 Innovation Solutions
- 3.6. Free Cooling by External Air
  - 3.6.1 Definition
  - 3.6.2 Regulations
  - 3.6.3 Technical Justifications
  - 3.6.4 Innovation Solutions
- 3.7. Lighting and Transport Equipment
  - 3.7.1 Definition
  - 3.7.2 Regulations
  - 3.7.3 Technical Justifications
  - 3.7.4 Innovation Solutions
- 3.8. Solar Thermal Production
  - 3.8.1 Definition
  - 3.8.2 Regulations
  - 3.8.3 Technical Justifications
  - 3.8.4 Innovation Solutions
- 3.9. Solar Photovoltaic Production
  - 3.9.1 Definition
  - 3.9.2 Regulations
  - 3.9.3 Technical Justifications
  - 3.9.4 Innovation Solutions
- 3.10. Control systems: domotics and best management ssystem (bms)
  - 3.10.1 Definition
  - 3.10.2 Regulations
  - 3.10.3 Technical Justifications
  - 3.10.4 Innovation Solutions

05

# Methodology

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

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





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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"*

### Case Study to contextualize all content

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

“

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



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





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

### A learning method that is different and innovative

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

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

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

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

## Relearning Methodology

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

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

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

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

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



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

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

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

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

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



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



### Study Material

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

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



### Classes

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

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



### Practising Skills and Abilities

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



### Additional Reading

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





#### Case Studies

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



#### Interactive Summaries

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

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



#### Testing & Retesting

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



06

# Certificate

The Postgraduate Diploma in Nombre del Programa guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



The image features three black graduation caps (mortarboards) against a blue sky with light clouds. The caps are positioned diagonally across the frame. The top-right cap is the most prominent, showing its top and side. The middle cap is partially obscured behind it. The bottom-left cap is held by a hand, with its tassel visible. The background is a bright blue sky with soft, white clouds. The overall composition is clean and modern, with a diagonal split between a white foreground and a dark brown background.

“

*Include in your education a Postgraduate Diploma in Energy Analysis and Energy Improvement Actions in Buildings: a highly qualified added value for any professional in this area"*

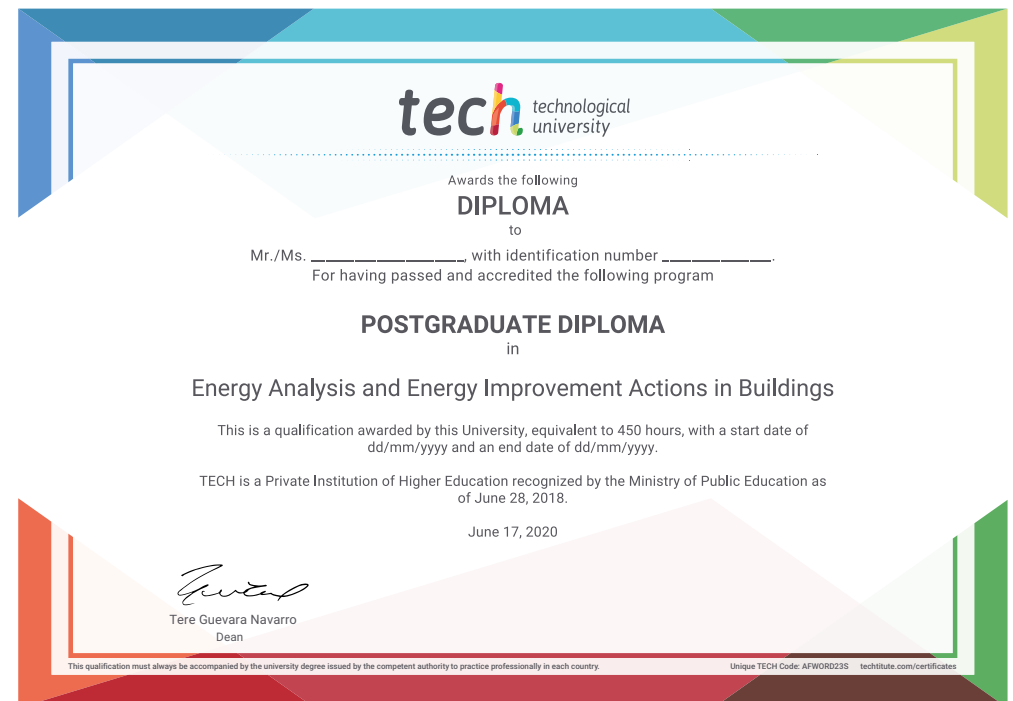
This **Postgraduate Diploma in Energy Analysis and Energy Improvement Actions in Buildings** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery.

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

Title: **Postgraduate Diploma in Energy Analysis and Energy Improvement Actions in Buildings**

Official N° of Hours: **450 h.**



\*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 preservation  
online training  
development laboratories  
classroom



**Postgraduate Diploma**  
Energy Analysis and Energy  
Improvement Actions in Buildings

- » Modality: **online**
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- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

# Postgraduate Diploma

## Energy Analysis and Energy Improvement Actions in Buildings