



# Postgraduate Diploma

Environmental and Energy Management in Organizations

» Modality: online

» Duration: 6 months

» Certificate: TECH Global University

» Credits: 24 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/engineering/postgraduate-diploma/postgraduate-diploma-environmental-energy-management-organizations

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# tech 06 | Introduction

In this Postgraduate Diploma, the focus will be on the organization of companies, establishing a relationship between companies, the environment and sustainable development, dealing in detail with historical, current and future environmental problems. The competency and regulatory frameworks will be analyzed and the main international agreements on sustainability such as the Paris Agreement and the United Nations Sustainable Development Goals will be covered. We will also look at the 2050 Roadmap and the National Integrated Energy and Climate Plan (Spain).

The current energy regulatory framework will be reviewed, focusing on the adaptation of European directives to the national market (Spain). Environmental impact assessment and climate change adaptation strategies are also covered.

Furthermore, we will carry out an in-depth study of the main tools that organizations can use for environmental management, and students will acquire sound knowledge of the processes and competitive advantages of environmental and energy certifications in buildings and organizations.

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

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

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

- Practical cases presented by experts in Environmental and Energy Management in Organizations
- The graphic, schematic, and 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 self-assessment can be used to improve learning
- Special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection



An intensive and highly effective program that will enable professionals to integrate the most innovative practical and regulatory knowledge of the moment into their practice"



Successfully apply environmental improvements in the management of any company with the knowledge you will acquire in this Postgraduate Diploma"

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

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 renowned and experienced experts in Environmental and Energy Management in Organizations.

A comprehensive and up-to-date program that will provide you with the most interesting teaching material and audiovisual systems on the online teaching market

> A 100% online Postgraduate Diploma that will allow you to combine your studies with your professional work in a completely flexible way





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Learn how to establish appropriate methodologies for the implementation of environmental management processes that will drive any organization towards energy efficiency"

# tech 10 | Objectives



## **General Objectives**

- Gain an in-depth understanding of business organization and climate change mitigation strategies
- Develop a solid understanding of the main energy sources used globally and innovations in the energy industry
- Gain an in-depth understanding of electrical energy, breaking down the main consuming equipment and its applications
- Master knowledge of the most-commonly-used fuels and fuel consuming equipment
- Train in the use of environmental and energy tools
- Carry out energy audits
- Conduct environmental impact assessments
- Develop and implement environmental and energy improvements
- Perform an in-depth breakdown of water and waste management to enable the learner to plan management plans and operational improvements
- Gain an in-depth understanding of the applicable legislation and regulatory framework for each of the program's topics
- Carry out the calculation of the carbon and water footprint of different facilities
- Carry out product life cycle analysis
- Develop a solid understanding of energy and environmental certifications
- Develop and implement an ISO 14001 environmental management system
- Develop and implement an ISO 50001 energy management system
- Be able to carry out internal audits of management systems of organizations





#### Module 1. Environmental and Energy Management of Organizations

- Perform an in-depth study of the organizational foundations of companies
- Understand and concisely learn the current regulatory framework, international agreements and the SDGs
- Analyze aspects related to sustainable development and current environmental and energy issues
- Gain an in-depth understanding of the circular economy and its environmental benefits
- Understand and internalize the function, systematics and applicability of sustainability reports

#### Module 2. Energy Management Tools

- Achieve a broad vision of the current applicable regulations
- Master regulatory inspections of energy systems
- Develop energy audits according to UNE-EN 16247-1: 2012
- Identify and use of energy simulation tools
- Study consumption monitoring and asset management in detail
- Elaborate energy efficiency master plans

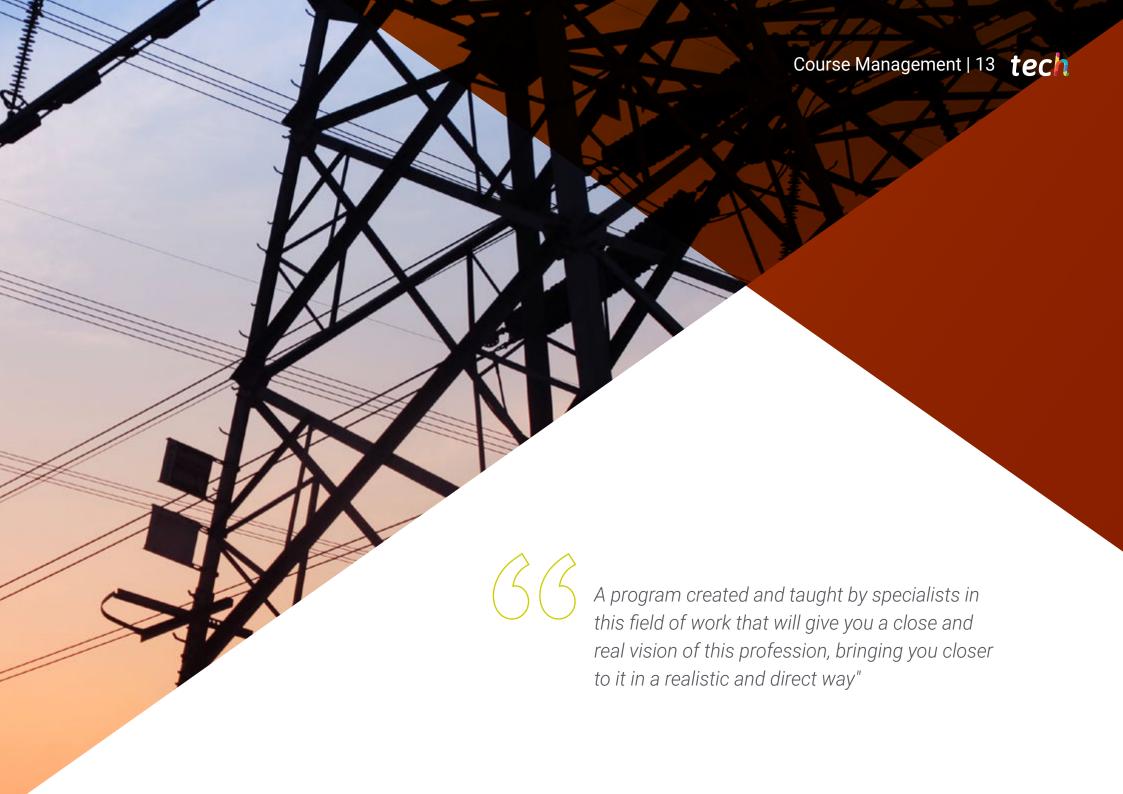
# Module 3. Environmental Impact Assessment and Climate Change Adaptation Strategies

- Identify and establish business strategies for climate change
- Address environmental impact assessment regulations and their application in organizations, both for projects and processes
- Identify and classify the factors to be taken into account for environmental impact assessment
- Develop preventive and corrective actions for environmental impact
- Analyze the risks and opportunities generated by environmental impact
- Acquire guidelines for the development of climate change adaptation plans

#### Module 4. Environmental Management Tools

- Precisely establish the application of environmental management tools in organizations
- Identify carbon markets and their utility
- Master the calculation of the carbon footprint of organizations, products and events based on international reference standards
- Acquire all the necessary knowledge for the implementation of climate change mitigation tools
- Calculate the water footprint and know the principles of the reference standards
- Develop a life cycle analysis and identify its different approaches
- Gain an in-depth understanding of the characteristics and principles of environmental and energy certifications of sustainable buildings





#### Management



## Ms. Cubillo Sagües, María Ignacia

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

#### **Professors**

#### Mr. Ortega Abad, Alberto

- Chief Energy Auditor in Buildings for the Spanish Quality Association (AEC)
- Degree in Chemical Sciences from the National Distance Education University (UNED)
- Master's Degree in Food Technology and Control from the Centro de Estudios Superiores de la Industria Farmacéutica de Madrid (Center for Higher Studies of the Pharmaceutical Industry of Madrid)
- European Energy Manager from the Eurem Program
- Technical Expert Diploma in ISO 17024 Inspection Entities, by the National Accreditation Entity (ENAC)

#### Ms. González del Cura, Lidia

- Graduated in Environmental Sciences from the Autonomous University of Madrid
- Training in "Professional Technician in Product Environmental Analysis: LCA, Ecolabelling, Carbon and Water Footprint", "Climate Change and Carbon Footprint"
- Training in ISO 9001 Quality Management Systems, ISO 14001 Environment and ISO 50001 Energy and "Equal Opportunities: practical application in the company and HR"
- More than five years of experience in the field of environmental consulting
- Internal auditor of management systems, accreditation from different certifiers as third party verification auditor in ISO 14064 regarding Carbon Footprint of Organizations, and third party verification auditor of EU ETS Greenhouse Gases

#### Mr. Royo, Eduardo Ángel

- Energy Consultant/Auditor in the tertiary sector at SinCeO2, Energy Consultancy
- Degree in Agricultural Engineering, specializing in Agricultural Operations and Horticulture and Gardening at the Polytechnic University of Madrid. r
- Specialist in Environmental Education at Imefe
- Course in Environmental Auditing at the Chamber of Commerce of Madrid

#### Mr. Gordaliza, Daniel

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

#### Mr. Alvarado Ponce, Lenny

- Responsible for the Energy Monitoring and Management department of SinCeO2 Consultoría Energética
- Degree in Higher Industrial Engineering from the University of San Simón
- Master's Degree in Renewable Energies and the Environment, at the Higher Technical School of Engineering and Industrial Design from the Polytechnic University of Madrid
- Master's Degree in Renewable Energy, Fuel Cells and Hydrogen from Menéndez Pelayo International University (UIMP)





# tech 18 | Structure and Content

#### Module 1. Environmental and Energy Management of Organizations

- 1.1. Organizational and Business Fundamentals
  - 1.1.1. Organizational Management
  - 1.1.2. Types and Structure of an Organization
  - 1.1.3. Standardization of Business Management
- 1.2. Sustainable Development: Business and Environment
  - 1.2.1. Sustainable Development. Objectives and Goals
  - 1.2.2. Economic Activity and its Impact on the Environment
  - 1.2.3. Corporate Social Responsibility
- 1.3. Environmental and Energy Issues. Scope and Current Framework
  - 1.3.1. Major Current Environmental Problems: Waste, Water, Food
  - 1.3.2. Energy Issues. Demand, Consumption and Source Distributions
  - 1.3.3. Current Energy Projections
- 1.4. Competence and Regulatory Framework
  - 1.4.1. Legal Framework, The Five Producing Levels of Environmental Regulations
  - 1.4.2. Competence Framework: the Distribution of Competencies in Environmental Matters
  - 1.4.3. Public Actions and Competencies in Environmental Matters and Regulation of Classified Activities
- 1.5. European Summits and the Paris Agreement
  - 1.5.1. EU Climate Targets
  - 1.5.2. European Summits
  - 1.5.3. The Paris Agreement
- 1.6. The 2030 Agenda and the Sustainable Development Goals
  - 1.6.1. The 2030 Agenda: Background, Approval Process and Content
  - 1.6.2. The 17 Sustainable Development Goals (SDGs)
  - 1.6.3. SDG Compass Guide
- 1.7. Roadmap 2050. National Energy Transition
  - 1.7.1. Roadmap 2050 Objectives. Key Points
  - 1.7.2. Economic, Industrial and Social Transition
  - 1.7.3. Strategy for Pollutant Emission Reduction. Decarbonization Plans

- 1.8. National Integrated Energy and Climate Plan
  - 1.8.1. Key Aspects of the Plan
  - 1.8.2. Health and Economic Impacts of the PNIEC 2021-2030
  - 1.8.3. Objectives and Results of the National Integrated Energy and Climate Plan, 2021-2030
- 1.9. Circular Economy
  - 1.9.1. The Circular Economy
  - 1.9.2. Legislation and Strategies to Support the Circular Economy
  - 1.9.3. Circular Economy System Diagrams
- 1.10. Sustainability Reports
  - 1.10.1. Communication of Social Responsibility Management
  - 1.10.2. Law 11/2018 Non-Financial Reporting
  - 1.10.3. The Process of Preparing a Sustainability Report according to GRI

#### Module 2. Energy Management Tools

- 2.1. Energy Regulatory Framework
  - 2.1.1. European Energy Efficiency Directive
  - 2.1.2. Transpositions of the Directive to the National Market
  - 2.1.3. Main Energy Regulations
- 2.2. Regulatory Inspections
  - 2.2.1. Air Conditioning Inspections
  - 2.2.2. High/Low Voltage Inspections
  - 2.2.3. Other Regulatory Inspections
- 2.3. Energy Audits
  - 2.3.1. Conducting an Energy Audit Identification of Improvement Opportunities
  - 2.3.2. UNE-EN 16247-1: 2012
  - 2.3.3. Royal Decree 56/2016
- 2.4. Energy Simulation Tools
  - 2.4.1. Light Simulations
  - 2.4.2. Air Conditioning Simulations
  - 2.4.3. Building Energy Demand Simulations

# Structure and Content | 19 tech

2.5.	Cupply	Managamant:	Monitorina
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- 2.5.1. Types of Monitoring
- 2.5.2. Energy Management Platforms
- 2.5.3. Fundamental Equipment

#### 2.6. Energy Services

- 2.6.1. Energy Services
- 2.6.2. Energy Services Companies
- 2.6.3. Types of Contracts

#### 2.7. IPMVP

- 2.7.1. Calculating Savings Avoided Cost and Standardized Savings Models
- 2.7.2. Options A, B, C and D
- 2.7.3. Establishing Baselines

#### 2.8. Energy Efficiency Master Plans

- 2.8.1. Methodology for Preparing a Master Plan
- 2.8.2. Management Models
- 2.8.3. Energy Efficiency within a Master Plan

#### 2.9. Asset Management

- 2.9.1. What is Asset Management?
- 2.9.2. ISO 55001 Asset Management
- 2.9.3. Benefits of Implementing Asset Management

#### 2.10. Grants and Subsidies

- 2.10.1. European Grants and Subsidies
- 2.10.2. National Grants and Subsidies
- 2.10.3. Regional Grants and Subsidies

# **Module 3.** Environmental Impact Assessment and Climate Change Adaptation Strategies

- 3.1. Business Strategies for Climate Change
  - 3.1.1. Greenhouse Effect and Climate Change. Causes and Consequences
  - 3.1.2. Climate Change Projections
  - 3.1.3. Corporate Action against Climate Change. Roadmap for the Integration of Climate Change in Companies
- 3.2. Environmental Impact Assessment. Law 21/2013
  - 3.2.1. Environmental Impact Assessment
  - 3.2.2. Administrative Procedure of the Environmental Impact Assessment
  - 3.2.3. Projects Subject to Environmental Assessment
- 3.3. Identification and Classification of Environmental Factors
  - 3.3.1. Environmental Catalog Environmental Variables
  - 3.3.2. Search for Environmental Information and Inventory
  - 3.3.3. Inventory Valuation
- 3.4. Evaluation and Assessment of the Environmental Impacts of a Project
  - 3.4.1. Environmental Analysis of a Project
  - 3.4.2. Pre-Operational Status
  - 3.4.3. Construction, Operation and Abandonment Phase
  - 3.4.4. Quantitative Methods
- 3.5. Preventive and Corrective Measures
  - 3.5.1. Preventative Actions
  - 3.5.2. Corrective Actions
  - 3.5.3. Compensatory Actions
- 3.6. Environmental Monitoring Program
  - 3.6.1. EMP
  - 3.6.2. Objectives and Structure of an EMP
  - 3.6.3. Phases in the Development of an EMP
- 3.7. Strategic Environmental Assessment
  - 3.7.1. European Regulatory Context (Directive 2001/42/EC)
  - 3.7.2. Modalities for Integrating the Environmental Dimension
  - 3.7.3. Environmental Assessment in the Phases of the Program

# tech 20 | Structure and Content

- 3.8. National Climate Change Adaptation Plan
  - 3.8.1. Climate Change: Impacts and Risks
  - 3.8.2. Objectives of the National Plan for Adaptation to Climate Change 2021-2030
  - 3.8.3. Objectives by Areas of Work
- 3.9. Analysis of Climate Change Risks and Opportunities
  - 3.9.1. Regulations Related to Environmental Risks
  - 3.9.2. Environmental Risk Analysis and Assessment
  - 3.9.3. Risk Management
- 3.10. Development of Climate Change Adaptation Plans for Organizations
  - 3.10.1. Adaptation to Climate Change
  - 3.10.2. Climate Change Vulnerability Assessment
  - 3.10.3. Methodology for Prioritizing Climate Change Adaptation Measures

#### Module 4. Environmental Management Tools

- 4.1. Carbon Markets
  - 4.1.1. KP Flexibility Mechanisms
  - 4.1.2. CAP and Trade and Carbon Funds Schemes
  - 4.1.3. Voluntary Carbon Markets
- 4.2. Organizational Carbon Footprint
  - 4.2.1. Methodological Reference Standards
  - 4.2.2. Scopes for Organizational Carbon Footprint
  - 4.2.3. Calculation Process
- 4.3. Product and Event Carbon Footprint
  - 4.3.1. Methodological Reference Standards
  - 4.3.2. Scopes for Product Carbon Footprint
  - 4.3.3. Scopes for Carbon Footprint of Events
- 4.4. Climate Change Mitigation Tools
  - 4.4.1. Reduction and Limitation of Emissions
  - 4.4.2. Emissions Offsets
  - 4.4.3. Business Benefits. Certifications
- 4.5. Water Footprint
  - 4.5.1. Stages and Units
  - 4.5.2. Differentiation of Water for Calculations
  - 4.5.3. The Water Footprint for Companies

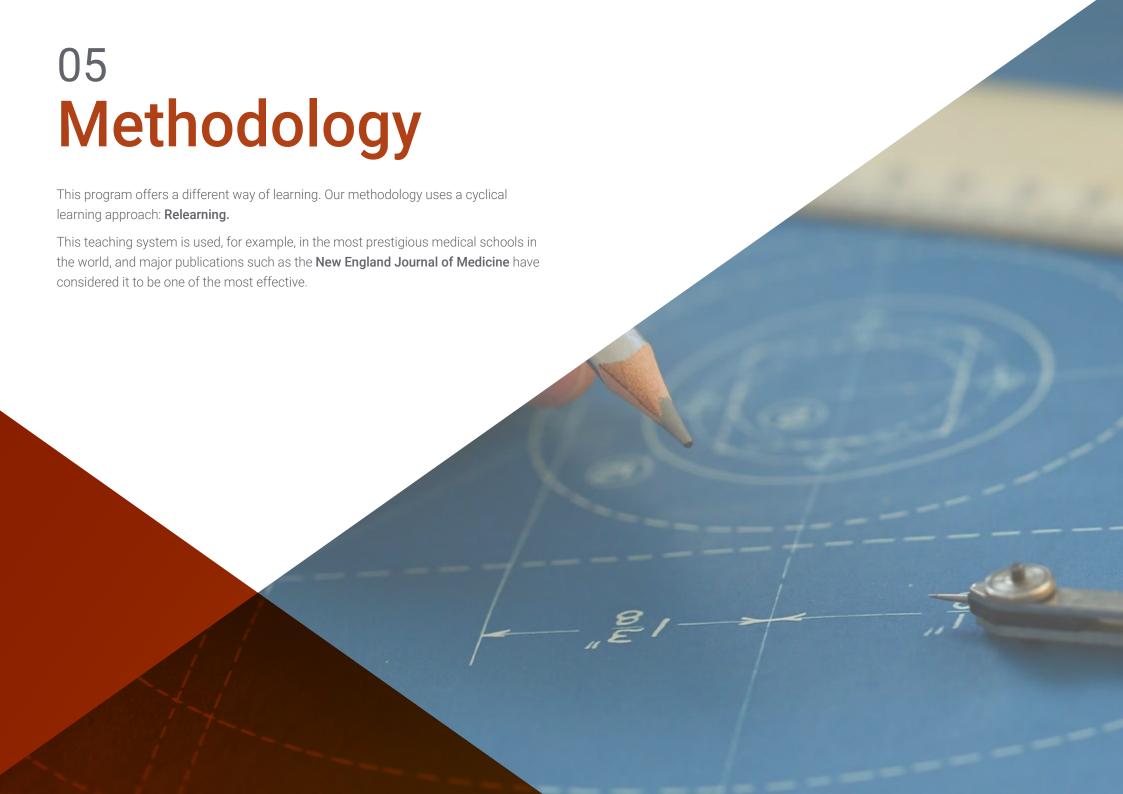




# Structure and Content | 21 tech

- 4.6. Life Cycle Analysis
  - 4.6.1. Differentiation of Approaches
  - 4.6.2. LCA Process
  - 4.6.3. Software Tools for LCA
- 4.7. Eco-Design and Eco-Labeling
  - 4.7.1. Eco-Design Standardization
  - 4.7.2. Types of Eco-Labeling
  - 4.7.3. Eco-Labeling Process
- 4.8. LEED and BREEAM
  - 4.8.1. The Value of Sustainable Building Certification
  - 4.8.2. Approaches to Both Certifications
  - 4.8.3. Technical Comparison between the Two Certifications
- 4.9. Other Sustainable Building Certifications
  - 4.9.1. Passive House
  - 4.9.2. Well
  - 4.9.3. VERDE (Building Reference Efficiency Evaluation)
- 4.10. Energy Certification of Buildings
  - 4.10.1. Energy Efficiency in Buildings
  - 4.10.2. Technical Conditions and Procedures
  - 4.10.3. Main Calculation Programs

Enhance your skills in environmental and energy management with the most innovative study systems for online teaching"





# tech 24 | Methodology

#### At TECH we use the Case Method

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



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



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

# Methodology | 25 tech



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

## A learning method that is different and innovative.

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



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

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

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases.

They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

# tech 26 | Methodology

## **Relearning Methodology**

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

We enhance Harvard case studies with the best 100% online teaching method: Relearning.

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

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

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



# Methodology | 27 tech

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

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

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

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

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

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



#### **Study Material**

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

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



#### Classes

There is scientific evidence suggesting that observing third-party experts can be useful. Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



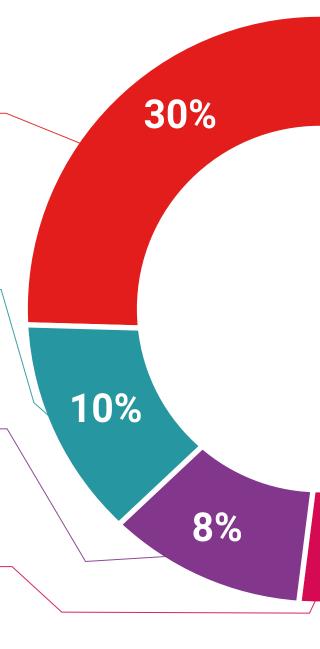
#### **Practising Skills and Abilities**

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



#### **Additional Reading**

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





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



#### **Interactive Summaries**

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



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

#### **Testing & Retesting**

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



25%

20%





# tech 32 | Certificate

This program will allow you to obtain your **Postgraduate Diploma in Environmental and Energy Management in Organizations** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: Postgraduate Diploma in Environmental and Energy Management in Organizations

Modality: online

Duration: 6 months

Accreditation: 24 ECTS



Mr./Ms. \_\_\_\_\_, with identification document \_\_\_\_ has successfully passed and obtained the title of:

# Postgraduate Diploma in Environmental and Energy Management in Organizations

This is a program of 600 hours of duration equivalent to 24 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024



<sup>\*</sup>Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

tech global university

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