

# Postgraduate Diploma Enabling Technologies





## Postgraduate Diploma Enabling Technologies

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

Website: [www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-enabling-technologies](http://www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-enabling-technologies)

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# 01

# Introduction

Big Data, Blockchain or AI are the main examples of the technologies that are driving digital transformation in leading companies and institutions to improve the quality of their services and productivity. Their progressive implementation in all sectors means that IT specialists are currently in high demand. For this reason, TECH has created this program, with which the student will receive the necessary tools to increase their skills in the field of Enabling Technologies. Throughout the course, students will learn about the cutting-edge applications of VR in the corporate environment or delve deeply into the use of Smart Contracts in Industry 4.0, in a 100% online mode.





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*Learn, through this program, the keys to optimize the technological tools that favor coordination and production tasks in Industry 4.0”*



In recent years, large corporate organizations have been betting on initiating a digital transformation that will enable them to increase their production capacity. For this reason, they are incorporating technologies such as Big Data, IoT or Artificial Intelligence in all branches of their business activity, which offer broad competitive advantages and favor their growth in the market. Given this situation, IT specialists in the use of these technological tools have high professional prospects, since they are responsible for optimizing the operation of these tools.

For this reason, TECH has designed this program, with which the student will delve into the most relevant and up-to-date aspects of Enabling Technologies to promote their growth in this sector. Throughout this educational path, you will identify the protocols required to properly implement the Blockchain within a company or analyze the benefits of different data ingestion technologies based on corporate needs. Furthermore, it will establish the best strategies to ensure the security of the technological operations carried out.

Since this Postgraduate Diploma is taught through a 100% online methodology, the computer scientists will be able to achieve effective learning by managing their own time as they wish. Likewise, teaching materials will be available in formats such as readings, video or interactive summary. With this, TECH's intention is to provide you with an education completely adapted to your academic and personal needs.

This **Postgraduate Diploma in Enabling Technologies** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The development of case studies presented by experts in technological solutions and new technologies
- ◆ The graphic, schematic, and practical contents with which they are created, provide 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
- ◆ 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



*Analyze, with this program, the benefits offered by each of the different data ingestion technologies, in order to choose the one that best suits the needs of each company"*

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*Through this program, you will identify the main protocols to implement the use of Chatbots and other AI tools in the company, in order to improve its productivity"*

The program includes in its teaching staff professionals from the sector who bring to this program the experience of their work, as well as recognized 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 students must try to solve the different professional practice situations that arise throughout the program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

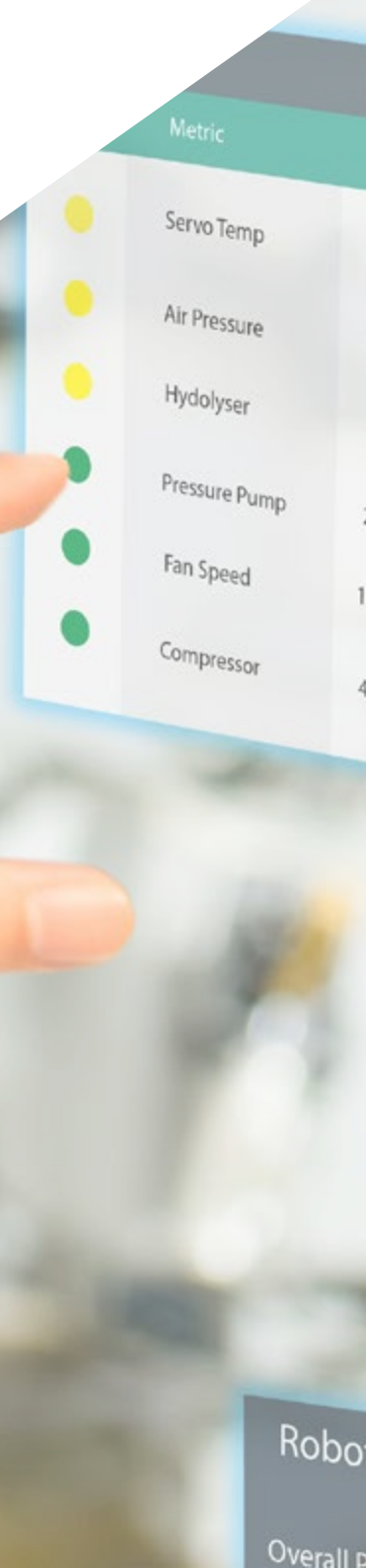
*Thanks to this Postgraduate Diploma, you will develop your knowledge in the area of Enabling Technologies and significantly improve your career prospects.*

*Through the 100% online methodology offered by this program, you will be able to learn effectively from home.*



# 02 Objectives

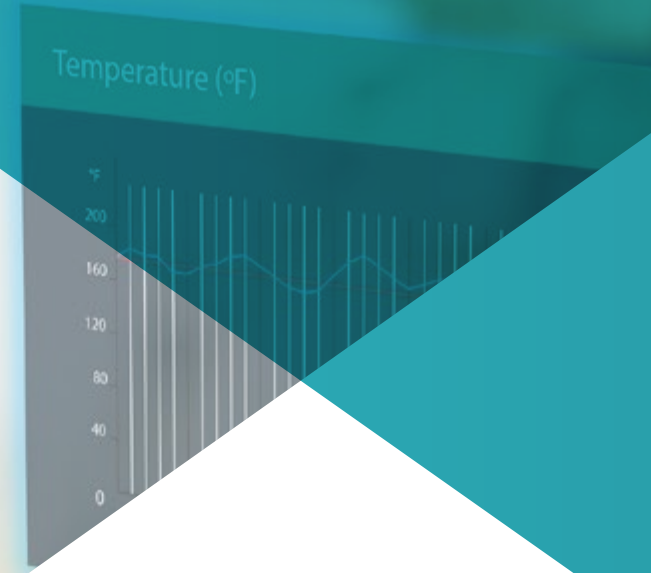
The design of this Postgraduate Diploma has been carried out with the intention of providing the student with the most relevant and up-to-date knowledge in the field of Enabling Technologies. During this educational experience, you will delve significantly into the area of Industry 4.0 or learn about the current application of VR in the development of technological solutions, preserving your learning through the following general and specific objectives.







All ▾
Value
220 °F
285 PSI
11%
2915 PSI
300 RPM
450 PSI
▾



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*Take this program and, in just 6 months, become an expert in Enabling Technologies to apply to the most leading companies in the market"*

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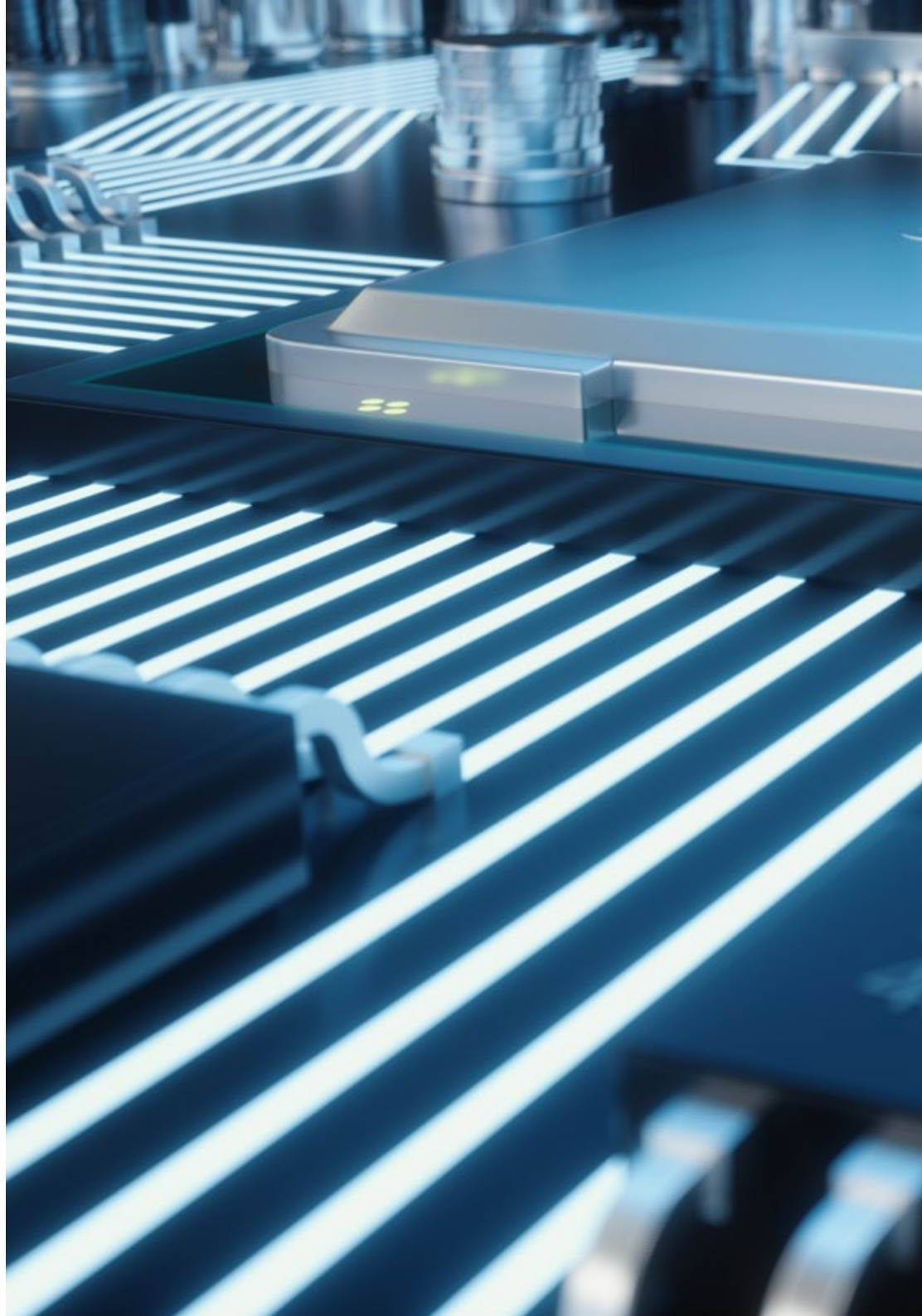
## General Objectives

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- ◆ Conduct a comprehensive analysis of the profound transformation and radical paradigm shift being experienced in the current global digitalization process
- ◆ Provide in-depth knowledge and the necessary technological tools to face and lead the technological leap and the challenges currently present in companies
- ◆ Mastering the digitalization procedures of companies and the automation of their processes to create new fields of wealth in areas such as creativity, innovation and technological efficiency
- ◆ Leading Digital Change



*After completing this comprehensive Postgraduate Diploma, you will have a set of knowledge that will boost your professional development"*





## Specific Objectives

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### Module 1. Big Data and Artificial Intelligence

- ◆ Deepen the knowledge of the fundamental principles of artificial intelligence
- ◆ Master the techniques and tools of this technology (machine learning/deep learning)
- ◆ Obtain a practical knowledge of one of the most widespread applications such as Chatbots and virtual assistants
- ◆ Acquire knowledge of the different transversal applications that this technology has in all fields

### Module 2. Virtual, Augmented and Mixed Reality

- ◆ Acquire an expert knowledge of the characteristics and fundamentals of Virtual Reality, augmented reality and mixed reality
- ◆ Delve into the existing differences between each of these fields
- ◆ Use applications of each of these technologies and develop solutions with each of them individually and in an integrated manner
- ◆ Efficiently combining all these technologies to achieve immersive experiences

### Module 3. Blockchain and Quantum Computing

- ◆ Acquire in-depth knowledge of the fundamentals of blockchain technology and its value propositions
- ◆ Lead the creation of Blockchain-based projects and apply this technology to different business models and the use of tools such as Smart Contracts
- ◆ Acquire important knowledge about one of the technologies that will revolutionize our future, such as quantum computing



# 03

# Course Management

With the idea in mind of providing the students with a top quality education, this program is directed and taught by experts with extensive experience in the field of new technologies and their consultancy for companies. These professionals are responsible for the development of all the teaching resources available to the student throughout this program. Therefore, the contents that you will receive will have a complete labor applicability.



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*This Postgraduate Diploma is directed and taught by active professionals in the field of new technologies in order to offer you the most up-to-date contents in this field"*

## Management



### Mr. Segovia Escobar, Pablo

- Chief Executive of the Defense Sector in the Company Tecnobit of the Oesía Group
- Project Manager at Indra
- Master's Degree in Business Administration and Management from the National University of Distance Education
- Postgraduate in Strategic Management Function
- Member of: Spanish Association of People with High Intellectual Quotient



### Mr. Diezma López, Pedro

- Chief Innovation Officer and CEO of Zerintia Technologies
- Founder of the technology company Acuilae
- Member of the Kebala Group for the incubation and promotion of businesses
- Consultant for technology companies such as Endesa, Airbus or Phone
- Wearable "Best Initiative" Award in eHealth 2017 and "Best Technological "Solution" 2018 for occupational safety





## Professors

### Ms. Sánchez López, Cristina

- ◆ CEO and Founder of Acuilae
- ◆ Artificial Intelligence Consultant at ANHELA IT
- ◆ Developer of Etyka Software for Computer Systems Security
- ◆ Software Engineer for the Accenture Group, serving clients such as Banco Santander, BBVA and Endesa
- ◆ Master in Data Science at KSchool
- ◆ Degree in Statistics from the Complutense University Madrid

### Mr. Asenjo Sanz, Álvaro

- ◆ IT Consultant for Capitole Consulting
- ◆ Project Manager for Kolokium Blockchain Technologies
- ◆ IT Engineer for Aubay, Tecnomcom, Humantech, Ibermatica and Acens Technologies
- ◆ Computer Systems Engineer from the Complutense University of Madrid

# 04

## Structure and Content

The syllabus of this program is composed of 3 modules with which the student will delve into the intricacies of Enabling Technologies to enhance their professional development. The teaching materials that you will enjoy during the duration of this program are available in formats such as the readings, the explanatory video or the interactive summary. Thanks to this and through a 100% online methodology, you will obtain learning completely adapted to your personal and study preferences.







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*This curriculum has been designed by top experts in fields such as AI or Blockchain to bring you the most useful teaching content on Enabling Technologies"*

## Module 1. Big Data and Artificial Intelligence

- 1.1. Fundamental Principles of Big Data
  - 1.1.1. Big Data
  - 1.1.2. Tools to Work With Big Data
- 1.2. Data Mining and Warehousing
  - 1.2.1. Data Mining Cleaning and Standardization
  - 1.2.2. Information Extraction, Machine Translation, Sentiment Analysis, etc
  - 1.2.3. Types of Data Storage
- 1.3. Data Intake Applications
  - 1.3.1. Principles of Data intake
  - 1.3.2. Data Ingestion Technologies to Serve Business Needs
- 1.4. Data Visualization
  - 1.4.1. The Importance of Data Visualization
  - 1.4.2. Tools to Carry It Out Tableau, D3, matplotlib (Python), Shiny®
- 1.5. Machine Learning
  - 1.5.1. Understanding Machine Learning
  - 1.5.2. Supervised and Unsupervised Learning
  - 1.5.3. Types of Algorithms
- 1.6. Neural Networks (Deep Learning)
  - 1.6.1. Neural Network: Parts and Operation
  - 1.6.2. Types of Networks CNN, RNN
  - 1.6.3. Applications of Neural Networks; Image Recognition and Natural Language Interpretation
  - 1.6.4. Generative Text Networks: LSTM
- 1.7. Natural Language Recognition
  - 1.7.1. PNL (Processing Natural Language)
  - 1.7.2. Advanced PLN Techniques: Word2vec, Doc2vec

- 1.8. Chatbots and Virtual Assistants
  - 1.8.1. Types of Assistants: Voice and Text Assistants
  - 1.8.2. Fundamental Parts for the Development of an Assistant: Intents, Entities and Dialog Flow
  - 1.8.3. Integrations: Web, Slack, WhatsApp, Facebook
  - 1.8.4. Assistant Development Tools: Dialogflow, Watson Assistant
- 1.9. Emotions, Creativity and Personality in IA
  - 1.9.1. Understand How to Detect Emotions Using Algorithms
  - 1.9.2. Creating a Personality: Language, Expressions and Content
- 1.10. Future of Artificial Intelligence
- 1.11. Reflections

## Module 2. Virtual, Augmented and Mixed Reality

- 2.1. Market and Tendencies
  - 2.1.1. Current Market Situation
  - 2.1.2. Reports and Growth by Different Industries
- 2.2. Differences Between Virtual, Augmented and Mixed Reality
  - 2.2.1. Differences Between Immersive Realities
  - 2.2.2. Immersive Reality Typology
- 2.3. Virtual Reality Cases and Uses
  - 2.3.1. Origin and Fundamentals of Virtual Reality
  - 2.3.2. Cases Applied to Different Sectors and Industries
- 2.4. Augmented Reality Cases and Uses
  - 2.4.1. Origin and Fundamentals of Augmented Reality
  - 2.4.2. Cases Applied to Different Sectors and Industries
- 2.5. Mixed and Holographic Reality
  - 2.5.1. Origin, History and Fundamentals of Mixed and Holographic Reality
  - 2.5.2. Cases Applied to Different Sectors and Industries
- 2.6. 360° Photography and Video
  - 2.6.1. Camera Typology
  - 2.6.2. Uses of 360 Images
  - 2.6.3. Creating a Virtual Space in 360 Degrees

- 2.7. Virtual World Creation
  - 2.7.1. Platforms for the Creation of Virtual Environments
  - 2.7.2. Strategies for the Creation of Virtual Environments
- 2.8. User Experience (UX)
  - 2.8.1. Components in the User Experience
  - 2.8.2. Tools for the Creation of User Experiences
- 2.9. Devices and Glasses for Immersive Technologies
  - 2.9.1. Device Typology on the Market
  - 2.9.2. Glasses and Wearables: Operation, Models and Uses
  - 2.9.3. Smart Glasses Applications and Evolution
- 2.10. Future Immersive Technologies
  - 2.10.1. Tendencies and Evolution
  - 2.10.2. Challenges and Opportunities
- 3.7. Industry Use Models
  - 3.7.1. Blockchain Applications by Industry
  - 3.7.2. Blockchain Success Stories by Industry
- 3.8. Security and Cryptography
  - 3.8.1. Objectives of Cryptography
  - 3.8.2. Digital Signatures and Hash Functions
- 3.9. Cryptocurrencies and Uses
  - 3.9.1. Types of Cryptocurrencies Bitcoin, HyperLedger, Ethereum, Litecoin, etc
  - 3.9.2. Current and Future Impact of Cryptocurrencies
  - 3.9.3. Risks and Regulations
- 3.10. Quantum Computing
  - 3.10.1. Definition and Keys
  - 3.10.2. Uses of Quantum Computing

### Module 3. *Blockchain* and Quantum Computing

- 3.1. Aspects of Decentralization
  - 3.1.1. Market Size, Growth, Companies and Ecosystem
  - 3.1.2. Fundamentals of Blockchain
- 3.2. Background: Bitcoin, Ethereum, etc
  - 3.2.1. Popularity of Decentralized Systems
  - 3.2.2. Evolution of Decentralized Systems
- 3.3. Blockchain Operation and Examples
  - 3.3.1. Types of Blockchain and Protocols
  - 3.3.2. Wallets, Mining and More
- 3.4. Characteristics of Blockchain Networks
  - 3.4.1. Functions and Properties of Blockchain Networks
  - 3.4.2. Applications: Cryptocurrencies, Reliability, Chain of Custody, etc
- 3.5. Types of Blockchain
  - 3.5.1. Public and Private Blockchains
  - 3.5.2. Hard and Soft Forks
- 3.6. Smart Contracts
  - 3.6.1. Intelligent Contracts and Their Potential
  - 3.6.2. Smart Contract Applications



*Enroll in this program and start enjoying a customized learning experience to your educational needs through formats such as video or interactive summaries"*

# 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.







*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.

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*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 has been the most widely used learning system among the world's leading Information Technology 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.

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 course, students 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 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 Certificate in Enabling Technologies guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This **Postgraduate Diploma in Enabling Technologies** contains the most complete and up-to-date scientific 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 Enabling Technologies**

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.



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Blockchain