

# Postgraduate Certificate Blockchain



## Postgraduate Certificate Blockchain

- » Modality: online
- » Duration: 12 week
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/in/engineering/postgraduate-certificate/blockchain](http://www.techtitute.com/in/engineering/postgraduate-certificate/blockchain)

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# 01

# Introduction

Everything points to the fact that, in the near future, *Blockchain* with its decentralized model will change the way business and society are understood. If this technology is extended to all industries and sectors, it could lead to a revolution that will change the way we understand and carry out any transaction that requires verification, between two or more parties, in a trusted environment. This 100% online specialization allows engineers to identify *Blockchain* technology application cases and approach the different practical cases from a broad perspective, defining specific solutions for their application in current environments within the industry.



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*A salient feature of the Blockchain is that transparency and privacy coexist in every transaction"*

The technology behind cryptocurrencies and designed to change the paradigm in many areas is called *Blockchain*. It is already a reality that this technology also allows the financing and management of infrastructures by different types of users, as well as the management of projects in a totally decentralized manner. Firstly, this program analyzes the advantages that *Blockchain* technology provides for the management of knowledge and data, applied to guarantee security, quality and traceability, as well as to increase the capacity of analysis of this information through new work technologies.

This qualification addresses everything from the problem of achieving security, transparency and tracking of communications, to the implementation of blockchain technology. All this, passing through its evolution towards the resolution of communication problems between nodes (*Smart Contracts*), Generation of Unique Elements (NFT's) and Information Tokenization Processes (SFTs). In this way, specific use cases are specified for each of them within different sectors of the current industrial landscape.

In addition, students are provided with the best 100% online study methodology, which eliminates the need to attend classes in person or have to comply with a predetermined schedule. In this way, in just 6 weeks they will deepen in the scope of the Blockchain application, understanding the competitive advantages it brings. of *Blockchain* application, understanding the competitive advantages it brings, so they will be positioned at the technological forefront and will be able to lead ambitious projects in the present and in the future.

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

- ◆ The development of case studies presented by *Blockchain* experts
- ◆ 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 self-assessment can be used 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



*This Postgraduate Certificate allows you to combine your studies with your working day, through an efficient 100% online modality"*

“ *Companies are willing to pay to pay higher salaries to hire the right the right engineer. Do not miss this opportunity offered by TECH”*

The program includes, in its teaching staff, professionals from the sector who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic course.

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

*You will learn how to define specific solutions for the application of Blockchain in existing and current and existing environments within the industry.*

*Blockchain is here to stay and getting a job in this space may be the best thing for your career right now.*



# 02 Objectives

The main objective of this Postgraduate Certificate is to prepare engineers to be able to understand, design, and develop the new economic, industrial and social models that are being implemented through *Blockchain* technology. For this purpose, this program provides a technical immersion in public and private nodes and in data operations with one of the most relevant technologies in technological advances in recent years. The direct application of the knowledge acquired about *Blockchain* in real projects is an added professional value.





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*Thanks to this technology you will be able to reduce costs and make exchanges with users located anywhere in the world, with a margin of error that is reduced to a minimum”*



## General Objectives

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- ◆ Generate specialized knowledge on *Blockchain* technology
- ◆ Examine the tools, algorithms, *frameworks* and platforms for their implementation
- ◆ Analyze and specify the different use cases and applications
- ◆ Determine specific solutions for such cases
- ◆ Identify the main advantages of applying Blockchain technology in industry
- ◆ Examine the tools required for implementation

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*Right now, only a handful of Blockchain engineers are in the job market and you can be one of them"*





## Specific Objectives

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- ◆ Analyze requirements for solution definition
- ◆ Develop solutions based on *Blockchain* technologies (C#/Go)
- ◆ Optimize the performance of already implemented solutions
- ◆ Establish the basis for enabling the scalability of such solutions
- ◆ Fundamentalize the application of different tools, algorithms, *Frameworks* or platforms in the implementation of *Blockchain* solutions
- ◆ Identify improvement points within existing architectures
- ◆ Evaluate the costs of applying the improvements to be implemented
- ◆ Fundamentalize the application of different tools in the implementation of *Blockchain* solutions

03

# Course Management

Experts in the *Blockchain* field come together in this Diploma to teach the graduate, through theoretical and practical analysis, the management of knowledge and data through *Blockchain* technology. Its application is the guarantee safety, quality and traceability, as well as to increase the capacity of information analysis through new technologies. *Blockchain* will be the fuel of the future, and the engineer who specializes in it will be responsible for at least part of that revolutionary change.





“

*If you acquire the right skills to offer companies, they will be willing to seek you out right then and there”*

## Management



### Mr. Molina Molina, Jerónimo

- ♦ Head of the Artificial Intelligence Department at Ibermática
- ♦ IA Engineer & Software Architect at NASSAT - Internet Satellite in Motion
- ♦ Senior Consultant at Hexa Ingenieros. Introducer of Artificial Intelligence (ML and CV).
- ♦ Expert in Artificial Intelligence-Based Solutions in the fields of Computer Vision, ML/DL and NLP
- ♦ Postgraduate Diploma in Business Creation and Development (Bancaixa - FUNDEUN Alicante)
- ♦ Computer Engineer, University of Alicante
- ♦ Professional Master's Degree in Artificial Intelligence from the Catholic University of Avila
- ♦ Executive MBA (European Business Campus Forum)

## Professors

### Mr. Mostajo Fernández, Iván

- ◆ Specialist in Project Management and Systems Computing
- ◆ ISBAN Consultant in Santander Consumer Finance Spain
- ◆ Technical Consultant at Signum Software and Eutropraxis
- ◆ Technical Project Manager at Infortec Ingeniería
- ◆ Technical Engineer in Computer Systems at the University Alcalá de Henares

### Mr. Díaz Morales, Ángel

- ◆ Computer Engineer and Technology Consultant
- ◆ Founder and CTO of Wozala
- ◆ Technological Consultant at Técnicas Reunidas
- ◆ Project Manager at Cetelem, Gfi Spain and ISBAN
- ◆ Technology and Project Design Coordinator at Bankia and BBVA
- ◆ Programmer at Idom Consulting
- ◆ Computer Engineer from the University of Zaragoza



# 04

# Structure and Content

A curriculum has been established that offers a broad perspective on Blockchain, a technology where a myriad of applications have a place. This Postgraduate Certificate course provides in-depth theoretical and practical knowledge of the tools and languages, algorithms, *frameworks* and platforms that enable the implementation of this technology. Engineers can leverage their creativity and critical thinking skills to find the perfect solution for their company. Definitely, a *Blockchain* update program can help them in this matter.





“

*In most cases, companies do not have a proper idea of how they can use Blockchain in their respective fields. Become an expert”*

**Module 1.** R&D in Complex Software Systems. *Blockchain.* Public and Private Nodes

- 1.1. *Blockchain* and Distributed Data
  - 1.1.1. Information Communications. New Paradigm
  - 1.1.2. Privacy and Transparency
  - 1.1.3. Information Exchange. New Models
- 1.2. *Blockchain*
  - 1.2.1. *Blockchain*
  - 1.2.2. *Blockchain.* Technological Base
  - 1.2.3. *Blockchain.* Components and Elements
- 1.3. *Blockchain.* Public Nodes
  - 1.3.1. *Blockchain.* Public Nodes
  - 1.3.2. Working Algorithms in Public Nodes
    - 1.3.2.1. *Proof of Work*
    - 1.3.2.2. *Proof of Stake*
    - 1.3.2.3. *Proof of Authority*
  - 1.3.3. Use Cases and Application
    - 1.3.3.1. *Smart Contracts*
    - 1.3.3.2. *Dapps*
- 1.4. *Blockchain.* Private Nodes
  - 1.4.1. *Blockchain.* Private Nodes
  - 1.4.2. Working Algorithms in Private Nodes
    - 1.4.2.1. *Proof of Work*
    - 1.4.2.2. *Proof of Stake*
    - 1.4.2.3. *Proof of Authority*
  - 1.4.3. Use Cases and Application
    - 1.4.3.1. Crypto Economy
    - 1.4.3.2. Game Theory
    - 1.4.3.3. Market modeling





- 1.5. *Blockchain. Work Frameworks*
  - 1.5.1. *Blockchain. Work Frameworks*
  - 1.5.2. Types
    - 1.5.2.1. Ethereum
    - 1.5.2.2. Hyperledger Fabric
  - 1.5.3. Application Examples (Ethereum)
    - 1.5.3.1. C#
    - 1.5.3.2. Go
- 1.6. *Blockchain in Finance*
  - 1.6.1. The Impact of *Blockchain* on the Financial World
  - 1.6.2. Advanced Technologies
  - 1.6.3. Use Cases and Application
    - 1.6.3.1. Information assurance
    - 1.6.3.2. Follow-Up and Monitoring
    - 1.6.3.3. Certified Transmissions
    - 1.6.3.4. Examples within the Financial Sector
- 1.7. *Blockchain in the Industrial Environment*
  - 1.7.1. *Blockchain* and Logistics
  - 1.7.2. Advanced Technologies
  - 1.7.3. Use Cases and Application
    - 1.7.3.1. *Smart Contracts* between Suppliers and Customers
    - 1.7.3.2. Support in Automation Processes
    - 1.7.3.3. Real-Time Product Traceability
    - 1.7.3.4. Examples within the Industrial Sector
- 1.8. *Blockchain. Transaction Tokenization*
  - 1.8.1. "Tokenizing" the World
  - 1.8.2. Smart Contracts Platforms (*Smart Contracts*)
    - 1.8.2.1. Bitcoin
    - 1.8.2.2. Ethereum
    - 1.8.2.3. Other Emerging Platforms
  - 1.8.3. Communication: The Oracle Problem
  - 1.8.4. Uniqueness: NFTs
  - 1.8.5. Tokenization: STOs

- 1.9. Blockchain. Examples of Use
  - 1.9.1. Use Case Description
  - 1.9.2. Practical Implementation (C#/Go)
- 1.10. Distributed Data. *Blockchain* Applications, Present and Future
  - 1.10.1. Distributed Data. Present and Future Applications of *Blockchain*
  - 1.10.2. The Future of Communication
  - 1.10.3. Next Steps

## Module 2. Data Operations in *Blockchain*. Innovation in Information Management

- 2.1. Information Management
  - 2.1.1. Information Management
  - 2.1.2. Management Applied to Knowledge
- 2.2. *Blockchain* in Information Management
  - 2.2.1. *Blockchain* in Information Management
    - 2.2.1.1. Data Security
    - 2.2.1.2. Data Quality
    - 2.2.1.3. Traceability of Information
    - 2.2.1.4. Other Additional Benefits
  - 2.2.2. Additional Considerations
- 2.3. Data Security
  - 2.3.1. Data Security
  - 2.3.2. Security and Privacy
  - 2.3.3. Use Cases and Application
- 2.4. Data Quality
  - 2.4.1. Data Quality
  - 2.4.2. Reliability and Consensus
  - 2.4.3. Use Cases and Application





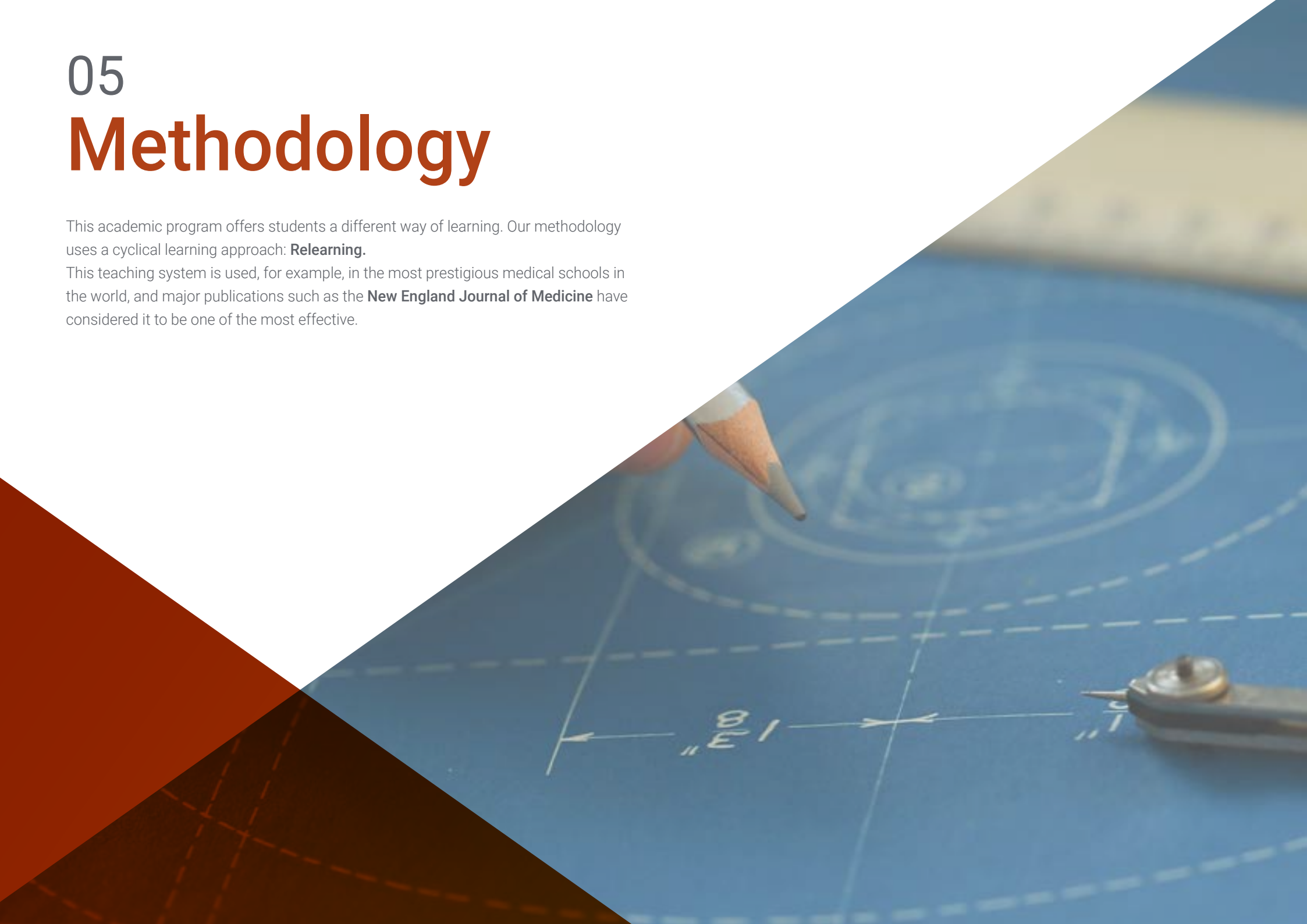
- 2.5. Traceability of Information
  - 2.5.1. Data Traceability
  - 2.5.2. *Blockchain* in Data Traceability
  - 2.5.3. Use Cases and Application
- 2.6. Analysis of Information
  - 2.6.1. Big Data
  - 2.6.2. Blockchain and Big Data
  - 2.6.3. Real-Time Data Accessibility
  - 2.6.4. Use Cases and Application
- 2.7. Application of BC (I). Information Security
  - 2.7.1. Information Security
  - 2.7.2. Use Case
  - 2.7.3. Practical Implementation
- 2.8. Application of BC (II). Information Quality
  - 2.8.1. Information Quality
  - 2.8.2. Use Case
  - 2.8.3. Practical Implementation
- 2.9. Application of BC (III). Traceability of Information
  - 2.9.1. Traceability of Information
  - 2.9.2. Use Case
  - 2.9.3. Practical Implementation
- 2.10. Blockchain. Practical Applications
  - 2.10.1. Blockchain in Practice
    - 2.10.1.1. Data Centers
    - 2.10.1.2. Sectorial
    - 2.10.1.3. Multisectorial
    - 2.10.1.4. Geographical

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.

“

*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.

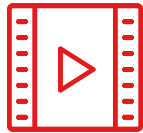
*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

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.



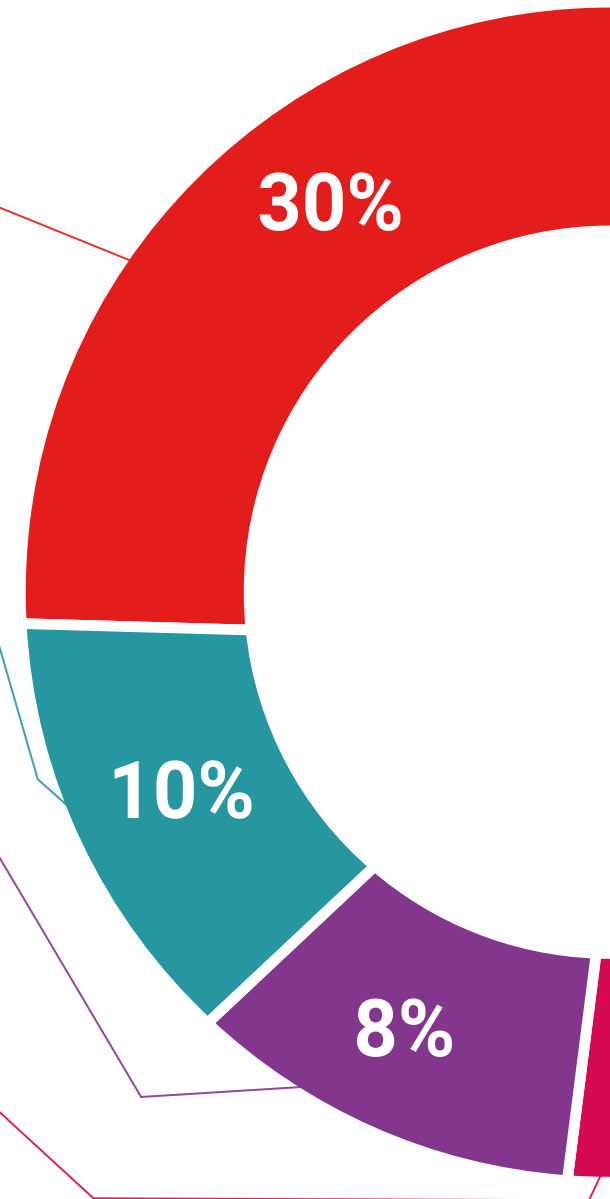
### Practising Skills and Abilities

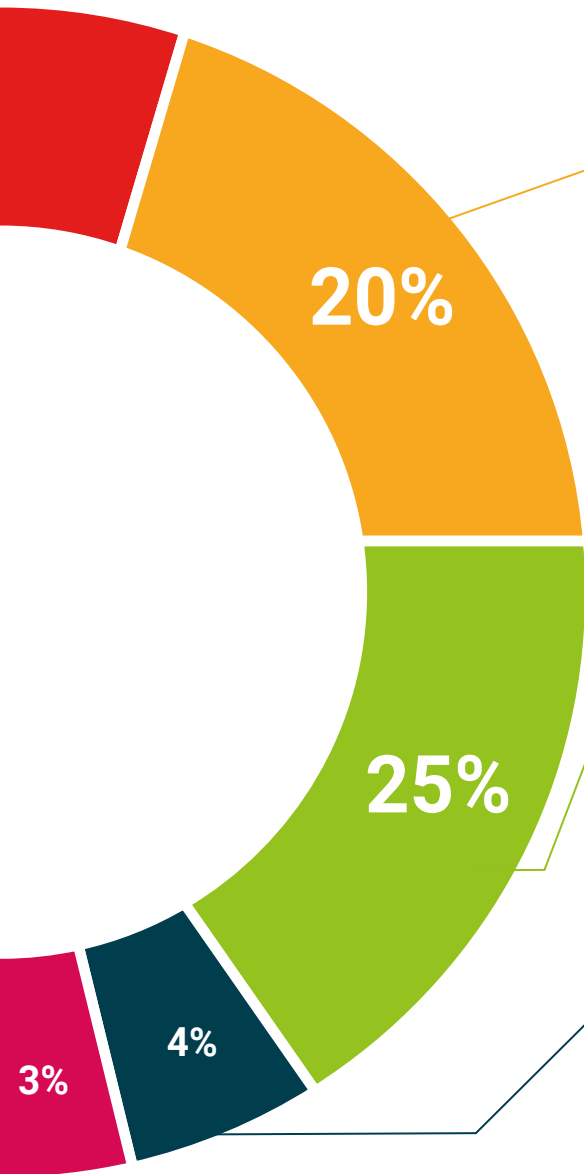
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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 Certificate in Blockchain 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 Certificate in Blockchain** 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 Certificate** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Certificate in Blockchain**

Official N° of hours: **300 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate 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  
development language  
virtual classroom



## Postgraduate Certificate Blockchain

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