

# Postgraduate Certificate

## Cryptocurrencies and Blockchain

### Computer Security



## Postgraduate Certificate Cryptocurrency and Blockchain Computer Security

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/information-technology/postgraduate-certificate/cryptocurrency-blockchain-computer-security](http://www.techtute.com/us/information-technology/postgraduate-certificate/cryptocurrency-blockchain-computer-security)

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# 01

# Introduction

Blockchain technology Blockchain is experiencing a promising moment in the digital and investment world, as everything indicates that in the future it could be an important part of world GDP. Taking this into account, one of the fundamental issues in the Cryptos environment is the security of them and their chains of blocks, since both their own confidence in transactions and the stability of the system depend on it. Given that cybersecurity is an increasingly worrying topic in IT, and even more so when talking about the Cryptoworld, TECH has developed this university program for all computer scientists who want a reliable in-depth study. Thus, topics ranging from Computer Security applied to Cryptocurrencies and Blockchain to VPNs, traceability in operations and everything related to TOR networks are covered. With this knowledge, the computer scientist will take an important step in his professional career, supported by a program whose main characteristics are the flexibility and high quality of all the contents.



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*Perseverance is the key to excellence  
Thanks to the TECH Relearning method you  
will be able to learn gradually, assimilating  
the concepts in a totally unique way”*

Currently, the Cryptocurrency market moves more than 100,000 million euros worldwide. As one would expect, an extremely important factor in this world is the security of Cryptocurrency and its Blockchains. This need to protect Cryptoecosystems is something substantial, which requires a detailed analysis of the most efficient tools for it. Directly proportional to the growth and improvement of a sector are also the vulnerabilities that can arise in it, this being a prolific field for computer scientists looking for an opportunity to boost their professional career.

For this reason, and in search of a specialization in relation to Computer Security in Cryptocurrencies and Blockchain, TECH has developed this Postgraduate Certificate. In it, the computer scientist will address the main existing cybersecurity threats, as well as the knowledge and management of the most used programs and methods. There will be a review of the intrinsic security of TOR networks, user management and permissions, types of attacks in the Cryptoworld and security in operations with Wallets, among others.

A 100% online program in which students can access practical and theoretical content from anywhere in the world, through any type of device with Internet access. In addition, the flexibility of schedules and adaptability of the program will allow those enrolled to combine their working life with learning, without the need to stick to fixed classes or fixed schedules.

This **Postgraduate Certificate in Cryptocurrencies and Blockchain Computer Security** contains the most complete and up-to-date program on the market.

The most important features include:

- ◆ The development of case studies presented by digital business and IT 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 for 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



*During 180 hours you will learn all the details and applied uses of the most advanced tools in Computer Security of Cryptocurrencies and Blockchain”*

“

*Thanks to this Postgraduate Certificate you will become an expert in security in Wallet transactions and everything related to VPNs”*

The program’s teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its 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 an immersive education designed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

*Become an expert in cybersecurity applied to Blockchain thanks to this TECH Postgraduate Certificate.*

*Specialize in one of the fundamental pillars of the Crypto sector and be the indispensable piece in the most ambitious projects.*



# 02 Objectives

With this program, TECH seeks to offer the most innovative and most applicable content related to security and cybersecurity in the Cryptoworld. The program will investigate topics such as the pillars of security in Cryptocurrencies and Tokens,, as well as SSO and MFA. All this through a very complete syllabus that will turn registered computer experts into experts in the world of digital security focused on the Cryptocurrency sector.



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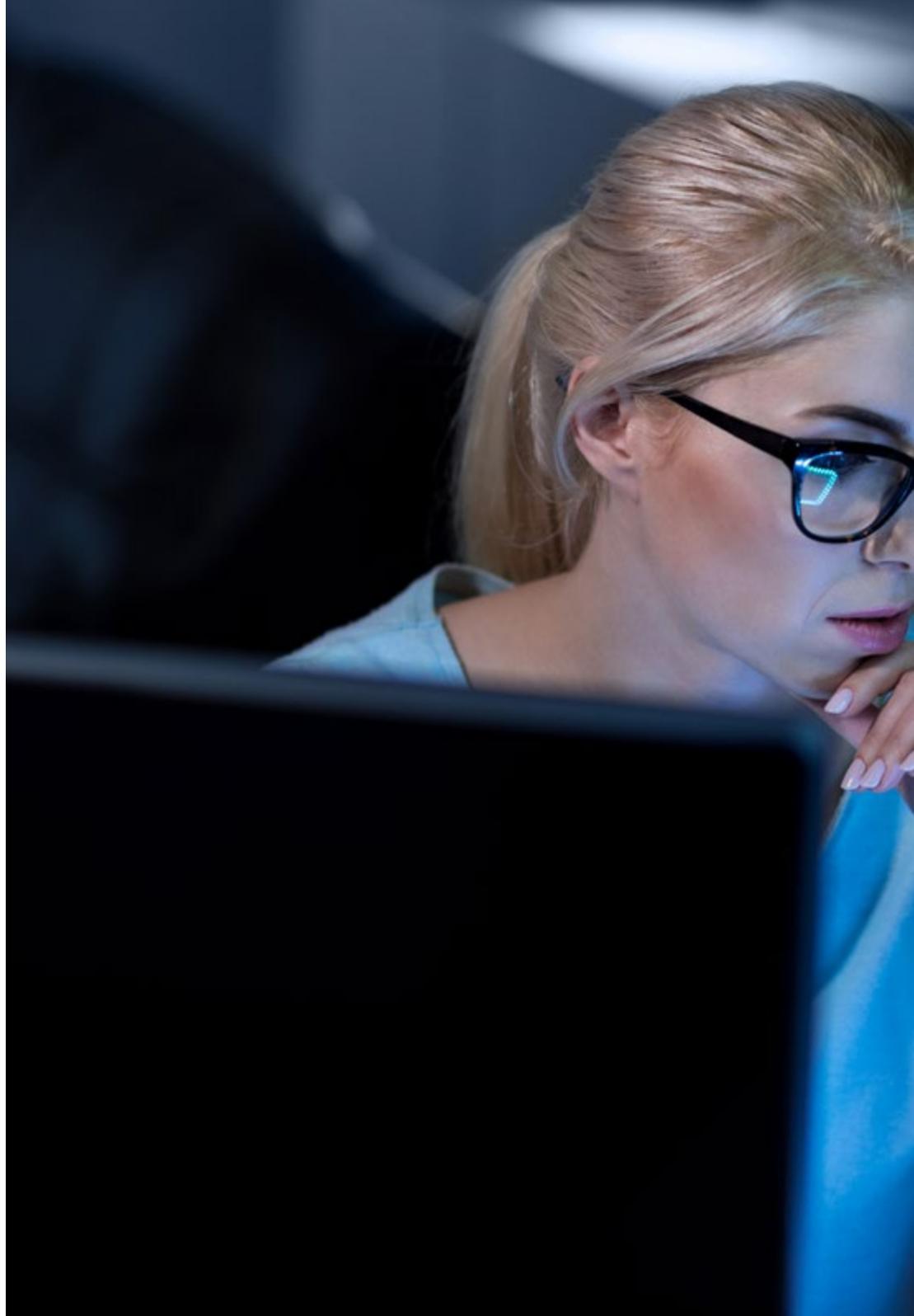
*Achieve and exceed your professional goals thanks to this Postgraduate Certificate in Cryptocurrencies and Blockchain Computer Security”*



## General Objectives

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- ◆ Implement key Internet security measures for cryptoassets
- ◆ Know and avoid the main threats on the network
- ◆ Master the use of the main security tools in Cryptocurrency





## Specific Objectives

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- ◆ Analyze factors affecting cryptocurrency security
- ◆ Determine the main types of threats to our assets
- ◆ Learn to trace all movements of our cryptocurrencies

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*Learn to trace the movements of your Cryptocurrencies thanks to the tools and methods that you will use during the 6 weeks of this Postgraduate Certificate”*

# 03

# Course Management

TECH, in search of being able to provide the highest quality instruction, has created a syllabus where it compiles the most important and cutting-edge contents related to cybersecurity in the Cryptoworld. Along with this, the team of teachers who teach them was selected in a very exhaustive way in order to offer the best educational service possible. These professors are qualified with the best knowledge, skills and experience in the sector, so the students enrolled in this Postgraduate Certificate in Cryptocurrencies and Blockchain Computer Security will coexist day by day with references in the subject of study.





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*Specialize with the best references in the world of security in Cryptocurrencies and blockchain”*

## Management



### Dr. Gil de la Guardia, Alberto

- Founding member of Le Crypto Club
- Co-director of several university programs related to Blockchain Technology and the Crypto world.
- Doctorate in International Public Law at the Complutense University of Madrid.
- Master's Degree in Financial Studies from CEU San Pablo University.
- Master's Degree in Blockchain Technology and Bitcoin from the European University of Madrid
- Degree in Law from the University of Salamanca

## Professors

### Mr. Gómez García, Fernando

- ♦ DEYDE Data Quality Infrastructure Manager
- ♦ Systems and Security Administrator at IDE Group
- ♦ Nutrytec Laboratorios SA Systems Manager
- ♦ Systems Analyst at AT LEAST SA
- ♦ Professor of Blockchain Technology in several Higher Education programs.
- ♦ Postgraduate Degree in Bitcoin and Blockchain Expert by the European University (EU)
- ♦ Advanced Course in Security Management by the Universidad Rey Juan Carlos
- ♦ Degree in Computer Engineering from the Distance University of Madrid(UDIMA)



# 04

# Structure and Content

The syllabus included in this Postgraduate Certificate in Computer Security in Cryptocurrencies and Blockchain has been selected both by the teachers who teach it and by TECH and its team of specialists. Within said contents, there is all kinds of information related to cybersecurity in the world of Cryptocurrencies, security in wallet operations and everything related to VPNs and their utilities. Unifying all this, a 100% online program has been created, which those enrolled can access from any device with Internet access and from anywhere in the world.





eum  
APP PLATFORM

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*Thanks to the flexibility of schedules and content offered by TECH, you will be able to study while you continue with your daily professional work”*

## Module 1. Cryptocurrency and Blockchain Security

- 1.1. Cryptocurrency Security
  - 1.1.1. Cryptography, Blockchain Basis
  - 1.1.2. Hash Functions
  - 1.1.3. Public and Private Keys, Uses in Cryptocurrencies
- 1.2. Privacy and Traceability in Operations
  - 1.2.1. Analysis and Traceability of Cryptocurrency Transactions
  - 1.2.2. Anonymity Techniques (Proxy, VPN, etc.)
  - 1.2.3. Digital Identity
- 1.3. TOR Network. Security/Safety
  - 1.3.1. TOR Networks
  - 1.3.2. Network Connections and Nodes
  - 1.3.3. Freenet and IP2
- 1.4. VPNs. Security/Safety
  - 1.4.1. VPNs. Operation
  - 1.4.2. Types, Characteristics and Properties
  - 1.4.3. User Profile and Authentication
- 1.5. User Management and Permits
  - 1.5.1. Access Rights Management
  - 1.5.2. Segregation of Roles and Access Functions
  - 1.5.3. Implementation of Access from Rights in The Systems
- 1.6. Wallet Transaction Security
  - 1.6.1. Hot and Cold Wallets
  - 1.6.2. Hardware and Software Wallet Transactions
  - 1.6.3. Multi-Signature
- 1.7. Cybersecurity and Cryptocurrencies
  - 1.7.1. The Pillars of Security in Cryptocurrencies and Tokens
  - 1.7.2. Risk, Threat and Vulnerability Assessment
  - 1.7.3. Minimum Privileges Law Differences and Similarities between Europe and America





- 1.8. SSO y MFA
  - 1.8.1. Single Sign On
  - 1.8.2. Logical Access Control. MFA Authentication
  - 1.8.3. Passwords. Importance
  - 1.8.4. Authentication Attacks
- 1.9. Safe Custody of Crypto Assets
  - 1.9.1. Differences between Exchange and wallet
  - 1.9.2. Public Keys, Private Keys and Seed or Seed Phrases
  - 1.9.3. Shared Custody
- 1.10. Cryptocurrency Hackers
  - 1.10.1. Types of Crypto Attacks
  - 1.10.2. Cryptocurrency Security Standards
  - 1.10.3. Preventing Attacks on your Cryptocurrencies

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*Cryptography represents the future of privacy, money banking and finance. Specialize in a profession with a promising future within the Crypto sector”*

# 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 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.



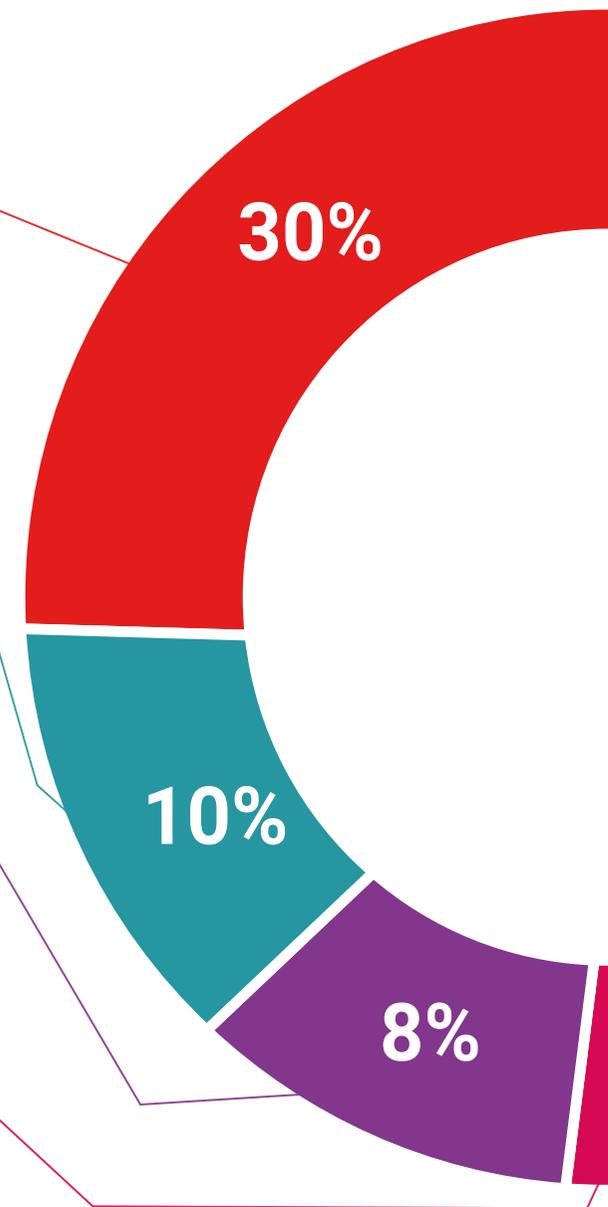
### Practising Skills and Abilities

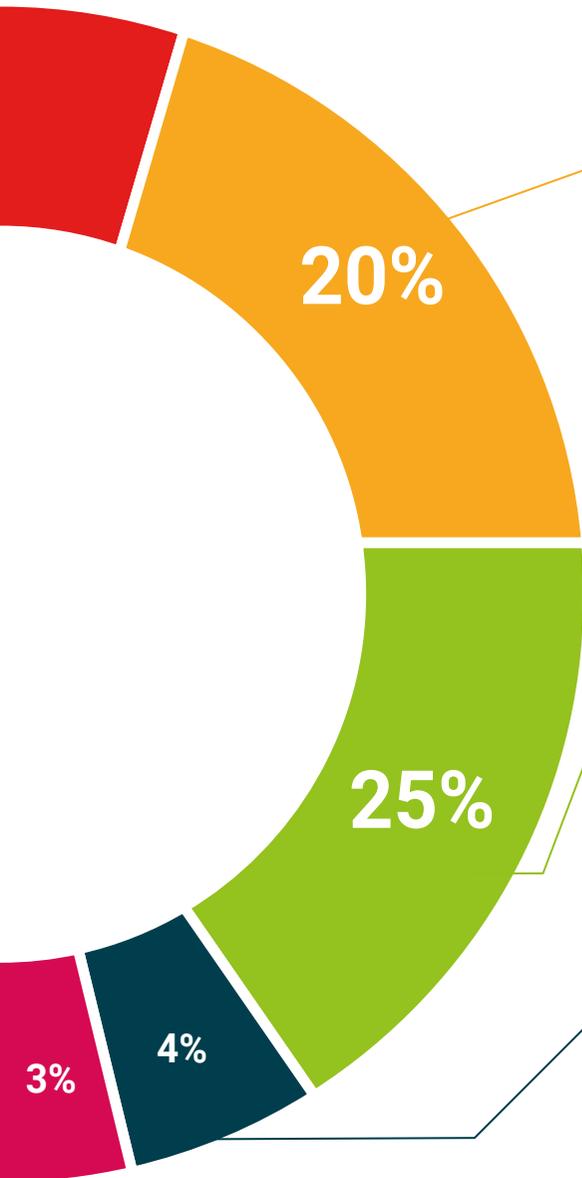
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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 Cryptocurrencies and Blockchain Computer Security guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.





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

This program will allow you to obtain your **Postgraduate Certificate in Cryptocurrencies and Blockchain Computer Security** 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 Certificate in Cryptocurrencies and Blockchain Computer Security**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



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Computer Security

