Executive Master's Degree
Blockchain Programming

M B P

tech *technological university*

Executive Master's Degree
Blockchain
Programming

Language: **English**

Course Modality: **Online**

Duration: **12 months**

Certificate: **TECH Technological University**

Official N° of Hours: **1,500 h.**

Website: **www.techtitute.com/pk/school-of-business/professional-master-degree/master-blockchain-progarmming**

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01
Welcome

There is currently no field that offers better business prospects than Blockchain technology. From the mining of cryptocurrencies to its application in areas such as contracts for the sale or rental of goods, to the recording of economic transactions, this powerful tool is the present and the future. Today's leading companies have made it a priority to develop Blockchain-related technology, and entrepreneurs and managers have understood the enormous business possibilities it offers. Therefore, this program provides its students with everything they need to undertake and lead their companies to success using the Blockchain as the main tool.

Executive Master's Degree in Blockchain Programming.
TECH Technological University

This is the opportunity you've been looking for: make your company successful thanks to everything you will learn about Blockchain technology in this high-level program"

Why Study at TECH?

TECH is the world's largest 100% online business school. It is an elite business school, with a model based on the highest academic standards. A world-class centre for intensive managerial skills training.

TECH is a university at the forefront of technology, and puts all its resources at the student's disposal to help them achieve entrepreneurial success"

At TECH Technological University

Innovation

The university offers an online learning model that combines the latest educational technology with the most rigorous teaching methods. A unique method with the highest international recognition that will provide students with the keys to develop in a rapidly-evolving world, where innovation must be every entrepreneur's focus.

"Microsoft Europe Success Story", for integrating the innovative, interactive multi-video system.

The Highest Standards

Admissions criteria at TECH are not economic. Students don't need to make a large investment to study at this university. However, in order to obtain a qualification from TECH, the student's intelligence and ability will be tested to their limits. The institution's academic standards are exceptionally high...

95% of TECH students successfully complete their studies

Networking

Professionals from countries all over the world attend TECH, allowing students to establish a large network of contacts that may prove useful to them in the future.

100,000+ executives trained each year

200+ different nationalities

Empowerment

Students will grow hand in hand with the best companies and highly regarded and influential professionals. TECH has developed strategic partnerships and a valuable network of contacts with major economic players in 7 continents.

500+ collaborative agreements with leading companies

Talent

This program is a unique initiative to allow students to showcase their talent in the business world. An opportunity that will allow them to voice their concerns and share their business vision.

After completing this program, TECH helps students show the world their talent.

Multicultural Context

While studying at TECH, students will enjoy a unique experience. Study in a multicultural context. In a program with a global vision, through which students can learn about the operating methods in different parts of the world, and gather the latest information that best adapts to their business idea.

TECH students represent more than 200 different nationalities.

Learn with the best

In the classroom, TECH's teaching staff discuss how they have achieved success in their companies, working in a real, lively, and dynamic context. Teachers who are fully committed to offering a quality specialization that will allow students to advance in their career and stand out in the business world.

Teachers representing 20 different nationalities.

At TECH, you will have access to the most rigorous and up-to-date case studies in the academic community"

TECH strives for excellence and, to this end, boasts a series of characteristics that make this university unique:

Analysis

TECH explores the student's critical side, their ability to question things, their problem-solving skills, as well as their interpersonal skills.

Academic Excellence

TECH offers students the best online learning methodology. The university combines the Relearning method (a postgraduate learning methodology with the highest international rating) with the Case Study. A complex balance between tradition and state-of-the-art, within the context of the most demanding academic itinerary.

Economy of Scale

TECH is the world's largest online university. It currently boasts a portfolio of more than 10,000 university postgraduate programs. And in today's new economy, **volume + technology = a ground-breaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.

03
Why Our Program?

Studying this TECH program means increasing the chances of achieving professional success in senior business management.

It is a challenge that demands effort and dedication, but it opens the door to a promising future. Students will learn from the best teaching staff and with the most flexible and innovative educational methodology.

We have highly qualified teachers and the most complete syllabus on the market, which allows us to offer you training of the highest academic level"

This program will provide students with a multitude of professional and personal advantages, particularly the following:

01 A significant career boost

By studying at TECH, students will be able to take control of their future and develop their full potential. By completing this program, students will acquire the skills required to make a positive change in their career in a short period of time.

70% of participants achieve positive career development in less than 2 years.

02 Develop a strategic and global vision of companies

TECH offers an in-depth overview of general management to understand how each decision affects each of the company's different functional areas.

Our global vision of companies will improve your strategic vision.

03 Consolidate the student's senior management skills

Studying at TECH means opening the doors to a wide range of professional opportunities for students to position themselves as senior executives, with a broad vision of the international environment.

You will work on more than 100 real senior management cases.

04 Take on new responsibilities

The program will cover the latest trends, advances and strategies, so that students can carry out their professional work in a changing environment.

45% of graduates are promoted internally.

05

Access to a powerful network of contacts

TECH connects its students to maximize opportunities. Students with the same concerns and desire to grow. Therefore, partnerships, customers or suppliers can be shared.

You will find a network of contacts that will be instrumental for professional development.

06

Thoroughly develop business projects

Students will acquire a deep strategic vision that will help them develop their own project, taking into account the different areas in companies.

20% of our students develop their own business idea.

07

Improve soft skills and management skills

TECH helps students apply and develop the knowledge they have acquired, while improving their interpersonal skills in order to become leaders who make a difference.

Improve your communication and leadership skills and enhance your career.

08

Be part of an exclusive community

Students will be part of a community of elite executives, large companies, renowned institutions, and qualified professors from the most prestigious universities in the world: the TECH Technological University community.

We give you the opportunity to train with a team of world renowned teachers.

04
Objectives

The main objective of this Executive Master's Degree is to provide students with the knowledge and managerial skills necessary to grow their companies, thanks to the enormous opportunities offered by *Blockchain* technology. At the end of the program, they will be able to open new business opportunities with which to expand their companies or undertake powerful projects related to this digital field.

Achieve all your goals thanks to the potential of Blockchain technology. Enroll now and achieve business success"

TECH makes the goals of their students their own goals too.
Working together to achieve them.

The **Executive Master's Degree in Blockchain Programming** qualifies students to:

01 Determine to what extent information can be collected from Wallets that we physically carry and to what extent information can be collected only when we have an address

02 Generate specialized knowledge about Ethereum as a public Blockchain

03 Develop design criteria for applications on production Hyperledger besu clients

04 Generate specialized knowledge about what Hyperledger fabric encompasses and how it works

05 Assess the impact on data privacy and security that current digital identity models present

06 Analyze the different DeFI tools

08 Determining the right Blockchain network

09 Determine the logistic processes to define the main needs and gaps of the current logistic process

07 Analyze the evolution of the crypto world up to today

10 Analyze why or why not to apply a Blockchain solution in our environment

05
Skills

In this Executive Master's Degree, students will be able to acquire a series of specific competencies in the *Blockchain* field that they will then be able to apply to their businesses. In this way, they will be able to delve into public *Blockchains*, the use of *Blockchain* technology for companies or its economic potential in tools and items such as NFTs. For that reason, this program is perfect for those who wish to become experts in this field and want to get the most out of it and the maximum benefits.

Don't wait any longer, this is the business opportunity you've been looking for"

01 Determine to what extent information can be collected from Wallets that we physically carry and to what extent information can be collected only when we have an address

04 Identify the benefits of using *Blockchain* technology for the deployment of digital identity-based solutions

02 Facing the deployment of a Hyperledger fabric project

03 Assess the impact on data privacy and security that current digital identity models present

05 Analyze the different DeFI tools

06 Assess new forms of passive income

08 Compile use cases in which Blockchain-based digital identity models are transforming organizations' processes

09 Generate specialized knowledge about Ethereum as a public Blockchain

07 Examine the main advantages for citizens of implementing self-sovereign digital identity models

10 Master the Stellar platform

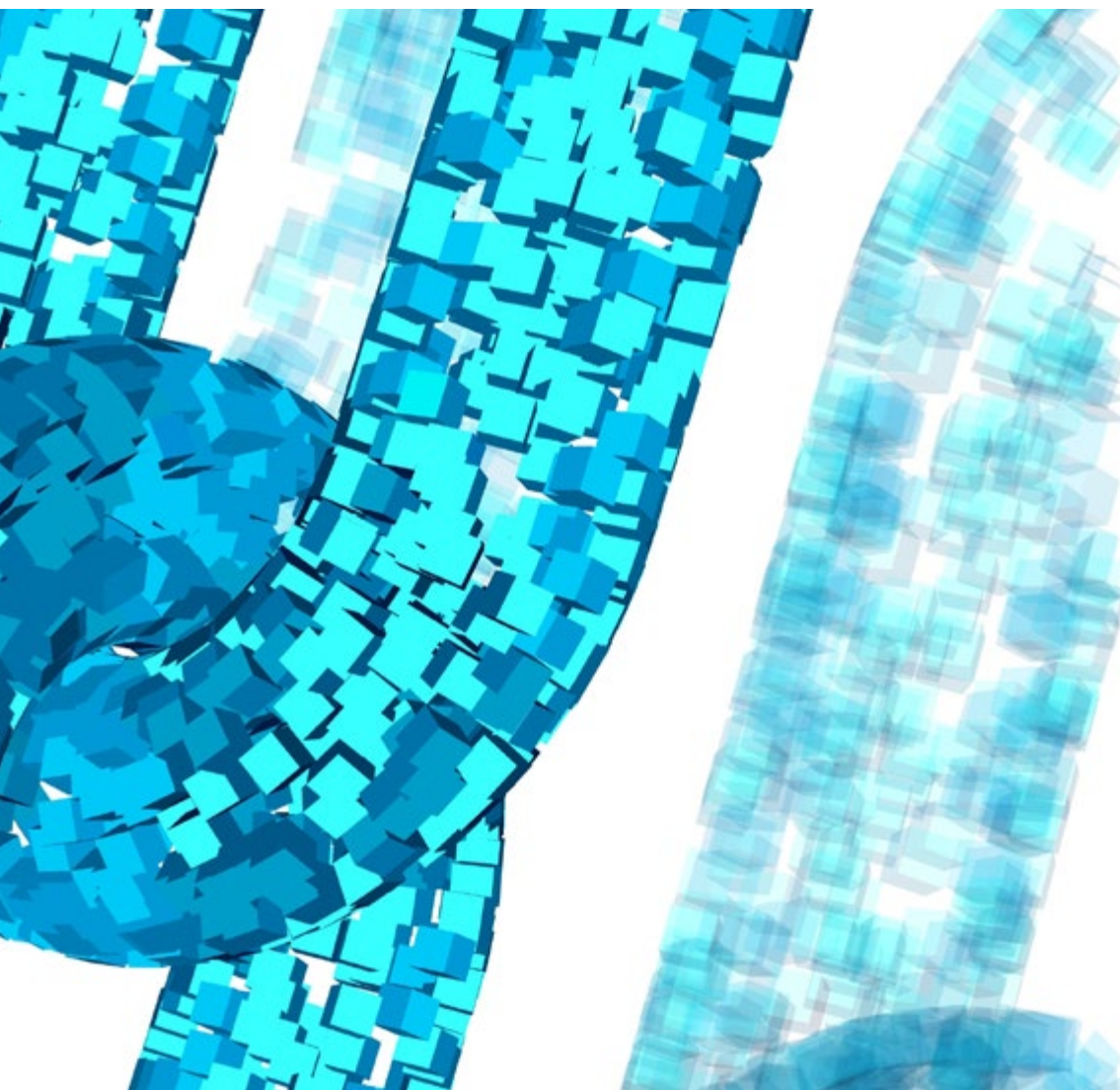**11** Specialize in Polkadot and Substrate

12 Determining the right Blockchain network

13 Achieve a secure, stable and scalable Blockchain network

14 Establish the best solution and applicability of the Blockchain for the need of the company and all participants

15 Explore the capability of certain Blockchain developments and their impact on the financial and pharmaceutical sector

16 Analyze the best way to implement a Blockchain development with emphasis on the basics of the technology

06
Structure and Content

This Executive Master's Degree in Programming for Blockchain has been designed by great specialists in the field, who will offer students a greater insight into aspects such as cryptocurrencies, the use of this technology in fields such as logistics or its importance in some booming items such as NFTs or DeFi. This program therefore focuses on analyzing all the essential elements of this field so that, by the end of the program, students will be true specialists.

"

The most complete and specific program on Blockchain, its programming and applications is here: enroll now and make a radical change to your business"

Syllabus

This program intensively prepares students to face today's business challenges, taking advantage of one of the tools that will be fundamental in the near future: Blockchain technology. Therefore, this Executive Master's Degree delves into Blockchain in order to offer students everything they need to succeed in business thanks to this digital utility.

The program, therefore, is composed of 10 modules that are developed over 12 months, reaching at the end 1,500 hours of in-depth learning. During this period, students will be able to delve into aspects such as Ethereum and public Blockchains, Hyperledger besu to develop enterprise Blockchains , its application in NFTs and DeFi, among many others.

All this, following an innovative 100% online teaching methodology that adapts to the circumstances of the students, as they can decide when, how and where to learn. In addition, it will do so through multimedia contents of high pedagogical rigor such as master classes, case studies or interactive summaries.

This Executive Master's Degree takes place over 12 months and is divided into 10 modules:

Module 1	Blockchain Technology: Technologies Involved and Cyberspace Security
Module 2	Public Blockchain Development: Ethereum, Stellar and Polkadot
Module 3	Development with Enterprise Blockchains: Hyperledger Besu
Module 4	Development with Enterprise Blockchains: Hyperledger Fabric
Module 5	Sovereign Identity Based on Blockchain
Module 6	Blockchain and its New Applications: DeFi and NFT
Module 7	Blockchain. Legal implications
Module 8	Blockchain Architecture Design
Module 9	Blockchain Applied to Logistics
Module 10	Blockchain and Business

Where, When and How is it Taught?

TECH offers the possibility of developing this Executive Master's Degree in Blockchain Programming completely online. Over the course of 12 months, you will be able to access all the contents of this program at any time, allowing you to self-manage your study time.

A unique, key, and decisive educational experience to boost your professional development and make the definitive leap.

Module 1. Blockchain Technology: Technologies Involved and Cyberspace Security

1.1. Cyber Research Techniques
1.1.1. Intelligence Analysis
1.1.2. Potential Deception on the Internet
1.1.3. Advanced Use of Search Tools

1.2. ELK Stacks
1.2.1. Logstash
1.2.2. ElasticSearch
1.2.3. Kibana

1.3. Internet Attribution Techniques
1.3.1. Social Media Research Tools
1.3.2. Domain and Address Research Tools
1.3.3. VirusTotal

1.4. OPSEC and Privacy in Web Research
1.4.1. Identity Management
1.4.2. Masking the Analyst
1.4.3. Operating Systems

1.5. Structural Analysis Techniques
1.5.1. Hypothesis Generation and Testing
1.5.2. Hypotheses Generation Techniques
1.5.3. Structured Hypothesis Refutation Techniques

1.6. Threat Modeling
1.6.1. STIX Format
1.6.2. MITRE ATT&CK Framework
1.6.3. TLP Information Classification
1.6.4. Intelligence Competition Strategies
1.6.5. Documenting Threats with OpenCTI

1.7. Researching Wallets and Purses
1.7.1. Wallet Operation
1.7.2. Cracking Wallets
1.7.3. Transaction Monitoring

1.8. Connected Services Vulnerabilities
1.8.1. Difference between Bugs, Vulnerabilities and Exploits
1.8.2. Vulnerability Assessment Metrics
1.8.3. Obligations upon Detecting Personal Data Affectation

1.9. Metasploit
1.9.1. Object Identification
1.9.2. Information Gathering
1.9.3. Exploiting Vulnerabilities
1.9.4. Malicious App Example

1.10. Smart Contracts Security
1.10.1. Tools to Search for Vulnerable Systems
1.10.2. Known Ethereum Attack Vectors
1.10.3. Exercises on CTF Ethernaut

Module 2. Public Blockchain Development: Ethereum, Stellar and Polkadot

2.1. Ethereum. Public Blockchain
2.1.1. Ethereum
2.1.2. EVM and GAS
2.1.3. Etherscan

2.2. Ethereum Development. Solidity
2.2.1. Solidity
2.2.2. Remix
2.2.3. Compilation and Execution

2.3. Ethereum Framework: Brownie
2.3.1. Brownie
2.3.2. Ganache
2.3.3. Brownie Deployment

2.4. Testing Smart Contracts
2.4.1. Test Driven Development (TDD)
2.4.2. Pytest
2.4.3. Smart Contracts

2.5. Web Connection
2.5.1. Metamask
2.5.2. web3.js
2.5.3. Ether.js

2.6. Real Project: Fungible Token
2.6.1. ERC20
2.6.2. Creating Our Token
2.6.3. Deployment and Validation

2.7. Stellar Blockchain
2.7.1. Stellar Blockchain
2.7.2. Ecosystem
2.7.3. Compared to Ethereum

2.8. Programming Stellar
2.8.1. Horizon
2.8.2. Stellar SDK
2.8.3. Fungible Token Project

2.9. Polkadot Project
2.9.1. Polkadot Project
2.9.2. Ecosystem
2.9.3. Interaction with Ethereum and other Blockchains

2.10. Programming Polkadot
2.10.1. Substrate
2.10.2. Creating Parachain on Substrate
2.10.3. Polkadot Integration

Module 3. Corporate Blockchain Development: Hyperledger Besu

3.1. Besu Configuration
3.1.1. Key Configuration Parameters in Production Environments
3.1.2. Finetuning for Connected Services
3.1.3. Good Configuration Practices

3.2. Blockchain Configuration
3.2.1. Key Configuration Parameters for PoA
3.2.2. Key Configuration Parameters for PoW
3.2.3. Genesis Block Configurations

3.3. Securing Besu
3.3.1. Secure the RPC with TLS
3.3.2. RPC Securitization with NGINX
3.3.3. Securitization by Means of a Node Scheme

3.4. Besu in High Availability
3.4.1. Node Redundancy
3.4.2. Balancers for Transactions
3.4.3. Transaction Pool over Messaging Queue

3.5. Offchain Tools
3.5.1. Privacy - Tessera
3.5.2. Identidad - Alastria ID
3.5.3. Data Indexing - Subgraph

3.6. Applications Developed on Besu
3.6.1. ERC20 Token-Based Applications
3.6.2. ERC 721 Token-Based Applications
3.6.3. ERC 1155 Token-Based Applications

3.7. Besu Deployment and Automation
3.7.1. Besu about Docker
3.7.2. Besu about Kubernetes
3.7.3. Besu in Blockchain as a Service

3.8. Besu Interoperability with Other Clients
3.8.1. Interoperability with Geth
3.8.2. Interoperability with Open *Ethereum*
3.8.3. Interoperability with Other DLTs

3.9. Plugins for Besu
3.9.1. Most Common Plugins
3.9.2. Plugin Development
3.9.3. Installation of Plugins

3.10. Configuration of Development Environments
3.10.1. Creation of a Developing Environment
3.10.2. Creation of a Customer Integration Environment
3.10.3. Creating a Pre-Production Environment for Load Testing

Module 4. Corporate Blockchain Development: Hyperledger Fabric

4.1. Hyperledger
4.1.1. Hyperledger Ecosystem
4.1.2. Hyperledger Tools
4.1.3. Hyperledger Frameworks

4.2. Hyperledger Fabric – Components of its Architecture. State-of-the-Art
4.2.1. State-of-the-Art of Hyperledger Fabric
4.2.2. Nodes
4.2.3. Orderers
4.2.4. CouchDB and LevelDB
4.2.5. CA

4.3. Hyperledger Fabric- Components of its Architecture. Process of a Transaction
4.3.1. Process of a Transaction
4.3.2. Chain Codes
4.3.3. MSP

4.4. Enabling Technologies
4.4.1. Go
4.4.2. Docker
4.4.3. Docker Compose
4.4.4. Other Technology

4.5. Installation of Prerequisites and Preparation of from Environment
4.5.1. Server Preparation
4.5.2. Download Prerequisites
4.5.3. Download from Official *Hyperledger* Repository

4.6. First Deployment
4.6.1. Automatic Test-Network Deployment
4.6.2. Guided Test-Network Deployment
4.6.3. Review of Deployed Components

4.7. Second Deployment
4.7.1. Deployment of Private Data Collection
4.7.2. Integration against a Fabric Network
4.7.3. Other Projects

4.8. Chain Codes
4.8.1. Structure of a *Chain Code*
4.8.2. Deployment and Upgrade of *Chaincodes*
4.8.3. Other Important *Chaincode* Functions

4.9. Connection to Other Hyperledger Tools (Caliper and Explorer)
4.9.1. Hyperledger Explorer Installation
4.9.2. Hyperledger Caliper Installation
4.9.3. Other Important Tools

4.10. Certification
4.10.1. Types of Official Certifications
4.10.2. Preparation for CHFA
4.10.3. PeProfile *Developer* vs. Administrator Profiles

Module 5. Sovereign Identity Based on Blockchain

5.1. Digital Identity
5.1.1. Personal Data
5.1.2. Social media
5.1.3. Control Over Data
5.1.4. Authentication
5.1.5. Identification

5.2. Blockchain Identity
5.2.1. Digital Signature
5.2.2. Public Networks
5.2.3. Permitted Networks

5.3. Sovereign Digital Identity
5.3.1. Requirements
5.3.2. Components
5.3.3. Applications

5.4. Decentralized Identifiers (DIDs)
5.4.1. Layout
5.4.2. DID Methods
5.4.3. DID Documents

5.5. Verifiable Credentials
5.5.1. Components
5.5.2. Flows
5.5.3. Security and Privacy
5.5.4. Blockchain to Register Verifiable Credentials

5.6. Blockchain Technologies for Digital Identity
5.6.1. Hyperledger Indy
5.6.2. Sovrin
5.6.3. IDAlastria

5.7. European Blockchain and Identity Initiatives
5.7.1. eIDAS
5.7.2. EBSI
5.7.3. ESSIF

5.8. Digital Identity of Things (IoT)
5.8.1. IoT Interactions
5.8.2. Semantic Interoperability
5.8.3. Data Security

5.9. Digital Identity of Processes
5.9.1. Date:
5.9.2. Codes
5.9.3. Interfaces

5.10. Blockchain Digital Identity Use Cases
5.10.1. Health
5.10.2. Educational
5.10.3. Logistics
5.10.4. Public Administration

Module 6. Blockchain and its New Applications: DeFi and NFT

6.1. Financial Culture
6.1.1. Evolution of Money
6.1.2. Fiat money vs. Decentralized Money
6.1.3. Digital Bank vs. *Open Finance*

6.2. Ethereum
6.2.1. Technology
6.2.2. Decentralized Money
6.2.3. Stable Coins

6.3. Other Technology
6.3.1. Binance Smart Chain
6.3.2. Polygon
6.3.3. Solana

6.4. DeFi (Decentralized Finance)
6.4.1. DeFi
6.4.2. Challenges
6.4.3. Open Finance Vs. DeFi

6.5. Information Tools
6.5.1. Metamask and Decentralized Wallets
6.5.2. CoinMarketCap
6.5.3. DefiPulse

6.6. Stable Coins
6.6.1. Protocol Maker
6.6.2. USDC, USDT, BUSD
6.6.3. Forms of Collateralization and Risks

6.7. Exchanges and Decentralized Exchanges and Platforms (DEX)
6.7.1. Uniswap
6.7.2. SushiSwap
6.7.3. AAVe
6.7.4. dYdX / Synthetix

6.8. NFT Ecosystem (Non-Fungible Tokens)
6.8.1. NFTs
6.8.2. Typology
6.8.3. Features

6.9. Capitulation of Industries
6.9.1. Design Industry
6.9.2. Fan Token Industry
6.9.3. Project Financing

6.10. NFT Markets
6.10.1. Opensea
6.10.2. Rarible
6.10.3. Customized Platforms

Module 7. Blockchain. Legal implications

7.1. Bitcoin
7.1.1. Bitcoin
7.1.2. Whitepaper Analysis
7.1.3. Proof of Stake Operation

7.2. Ethereum
7.2.1. Ethereum. Origins
7.2.2. Proof of Stake Operation
7.2.3. DAO Case

7.3. Current Status of the Blockchain
7.3.1. Growth of Cases
7.3.2. Blockchain Adoption by Large Companies

7.4. MiCA (Market in Cryptoassets)
7.4.1. Birth of the Standard
7.4.2. Legal Implications (Obligations, Obligated Parties, etc.)
7.4.3. Summary of the Standard

7.5. Prevention of Money Laundering
7.5.1. Fifth Directive and its Transposition
7.5.2. Obligated Parties
7.5.3. Intrinsic Obligations

7.6. Tokens
7.6.1. Tokens
7.6.2. Types
7.6.3. Applicable Regulations in Each Case

7.7. ICO/STO/IEO: Corporate Financing Systems
7.7.1. Types of Financing
7.7.2. Applicable Regulations
7.7.3. Success Stories

7.8. NFT (Non-Fungible Tokens)
7.8.1. NFT
7.8.2. Applicable Regulations
7.8.3. Use Cases and Success (Play to Earn)

7.9. Taxation and Cryptoassets
7.9.1. Taxation
7.9.2. Income from Work
7.9.3. Income from Economic Activities

7.10. Other Applicable Regulations
7.10.1. General Data Protection Regulation
7.10.2. DORA (Cybersecurity)
7.10.3. EIDAS Regulations

Module 8. Blockchain Architecture Design

8.1. Blockchain Architecture Design
8.1.1. Architecture
8.1.2. Infrastructure Architecture
8.1.3. Software Architecture
8.1.4. Integration Deployment

8.2. Types of Networks
8.2.1. Public Networks
8.2.2. Private Networks
8.2.3. Permitted Networks
8.2.4. Differences

8.3. Participant Analysis
8.3.1. Company Identification
8.3.2. Customer Identification
8.3.3. Consumer Identification
8.3.4. Interaction Between Parties

8.4. Proof-of-Concept Design
8.4.1. Functional Analysis
8.4.2. Implementation Phases

8.5. Infrastructure Requirements
8.5.1. Cloud
8.5.2. Physical
8.5.3. Hybrid

8.6. Security Requirements
8.6.1. Certificate
8.6.2. HSM
8.6.3. Encryption

8.7. Communications Requirements
8.7.1. Network Speed Requirements
8.7.2. I/O Requirements
8.7.3. Transaction Requirements Per Second
8.7.4. Affecting Requirements with the Network Infrastructure

8.8. Software Testing, Performance and Stress Testing
8.8.1. Unit Testing in Development and Pre-Production Environments
8.8.2. Infrastructure Performance Testing
8.8.3. Pre-Production Testing
8.8.4. Production Testing
8.8.5. Version Control

8.9. Operation and Maintenance
8.9.1. Support: Alerts
8.9.2. New Versions of Infrastructure Components
8.9.3. Risk Analysis
8.9.4. Incidents and Changes

8.10. Continuity and Resilience
8.10.1. Disaster Recovery
8.10.2. Backup
8.10.3. New Participants

Module 9. Blockchain Applied to Logistics

9.1. Operational AS IS Mapping and Possible Gaps
9.1.1. Identification of Manually Executed Processes
9.1.2. Identification of Participants and their Particularities
9.1.3. Case Studies and Operational Gaps
9.1.4. Presentation and Staff Executive of the Mapping

9.2. Map of Current Systems
9.2.1. Current Systems
9.2.2. Master Data and Information Flow
9.2.3. Governance Model

9.3. Application of Blockchainto Logistics
9.3.1. Blockchain Applied to La Logistics
9.3.2. Traceability-Based Architectures for Business Processes
9.3.3. Critical Success Factors in Implementation
9.3.4. Practical Advice

9.4. TO BE Model
9.4.1. Operational Definition for Supply Chain Control
9.4.2. Structure and Responsibilities of the Systems Plan
9.4.3. Critical Success Factors in Implementation

9.5. Construction of the Business Case
9.5.1. Cost structure
9.5.2. Projected Benefits
9.5.3. Approval and Acceptance of the Plan by the Owners

9.6. Creation of Proof of Concept (POC)
9.6.1. Importance of a POC for New Technologies
9.6.2. Key Aspects
9.6.3. Examples of POCs with Low Cost and Effort

9.7. Project Management
9.7.1. Agile Methodology
9.7.2. Decision of Methodologies Among all Participants
9.7.3. Strategic Development and Deployment Plan

9.8. Systems Integration: Opportunities and Needs
9.8.1. Structure and Development of the Systems Planning
9.8.2. Data Master Model
9.8.3. Roles and Responsibilities
9.8.4. Integrated Management and Monitoring Model

9.9. Development and Implementation with Supply Chain Team
9.9.1. Active Participation of the Customer (Business)
9.9.2. Systemic and Operational Risk Analysis
9.9.3. Key to Success: Testing Models and Post-Production Support

9.10. Change Management: Follow-up and Update
9.10.1. Management Implications
9.10.2. Rollout and Education Plan
9.10.3. KPI Tracking and Management Models Z

Module 10. Blockchain and Business

10.1. Applying Technology throughout the Company
10.1.1. Applying Blockchain
10.1.2. Blockchain Benefits
10.1.3. Common Implementation Mistakes

10.2. Blockchain Implementation Cycle
10.2.1. From P2P to Distributed Systems
10.2.2. Key Aspects for Proper Implementation
10.2.3. Improving Current Implementations

10.3. Blockchain Vs. Traditional Technologies: Basics
10.3.1. APIs Data and Flows
10.3.2. Tokenization as a Cornerstone for Projects
10.3.3. Incentives

10.4. Selecting Blockchain Type
10.4.1. Public Blockchain
10.4.2. Private Blockchain
10.4.3. Consortiums

10.5. Blockchain and the Public Sector
10.5.1. Blockchain in the Public Sector
10.5.2. Central Bank Digital Currency (CBDC)
10.5.3. Conclusions

10.6. Blockchain and the Financial Sector Start
10.6.1. CBDC and Banking
10.6.2. Native Digital Assets
10.6.3. Where It Does Not Fit

10.7. Blockchain and the Pharmaceutical Sector
10.7.1. Searching for Meaning in the Field
10.7.2. Logistics or Pharmacy
10.7.3. Application

10.8. Pseudo Private Blockchains: The Point of Consortiums
10.8.1. Reliable Environments
10.8.2. Analysis and Delving Deeper
10.8.3. Valid Implementations

10.9. Blockchain. Usage Case in Europe EBSI
10.9.1. EBSI (European Blockchain Services Infrastructure)
10.9.2. The Business Model
10.9.3. Future

10.10. The Future of Blockchain
10.10.1. Trilemma
10.10.2. Automation
10.10.3. Conclusions

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"

TECH Business School uses the 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"

This program prepares you to face business challenges in uncertain environments and achieve business success.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch to present executives with challenges and business decisions at the highest level, whether at the national or international level. 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 business reality is taken into account.

> *You will learn, through collaborative activities and real cases, how to solve complex situations in real business environments"*

The case method has been the most widely used learning system among the world's leading business 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 we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They must integrate all their knowledge, research, argue and defend their ideas and decisions.

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

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.

Our online system will allow you to organize your time and learning pace, adapting it to your schedule. You will be able to access the contents from any device with an internet connection.

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 online business school is the only one in the world licensed to incorporate 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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. With this methodology we have 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, markets, and financial 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 specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to 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.

Management Skills Exercises

They will carry out activities to develop specific executive competencies in each thematic area. Practices and dynamics to acquire and develop the skills and abilities that a high-level manager 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.

30%

10%

8%

3%

30%

15%

4%

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 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.

Our Students' Profiles

This Executive Master's Degree is aimed at all those who come from the corporate and business world and who wish to incorporate the powerful *Blockchain* tool to maximize their profits and grow their companies. Therefore, the students in this program are ambitious people who are always on the lookout for the latest technological and economic innovations with which to progress and become great leaders.

"

If you are ambitious and know that Blockchain technology is the present and the future of business, this is the place for you. Enroll now"

Average Age

Between **35** and **45** years old

Years of Experience

Up to 15 years **17%**

More than 5 years **16%**

10-15 years **36%**

5 to 10 years **31%**

Training

Engineering **30%**

Business and Economics **44%**

Social Sciences **9%**

Other **17%**

Academic Profile

Industry **41%**

Technology **22%**

Entrepreneurs **27%**

Other **10%**
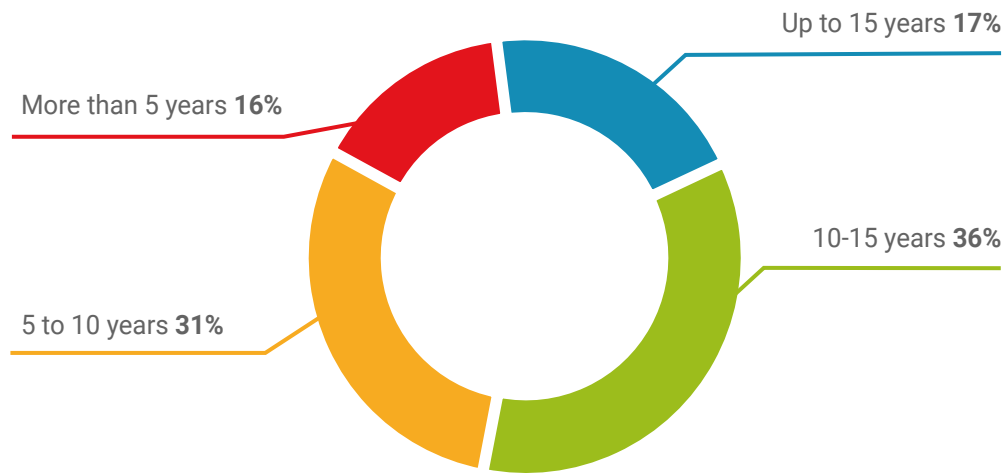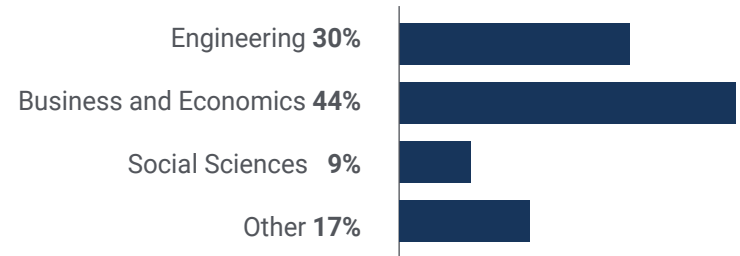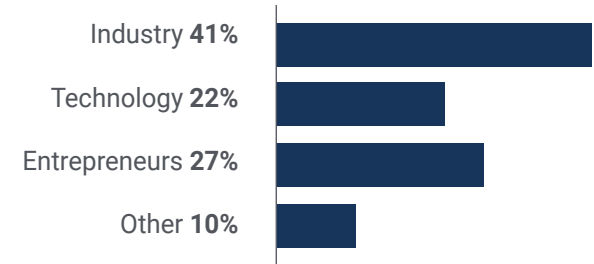
Geographical Distribution

USA **19%**

Spain **43%**

Mexico **29%**

Colombia **9%**
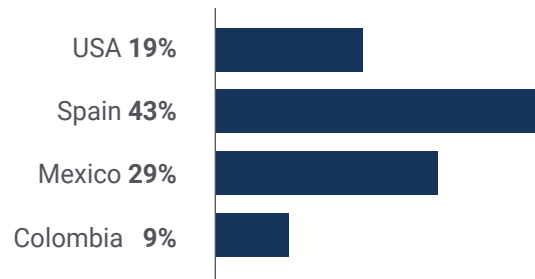
Jaime Rodríguez

Entrepreneur

"This program has made my company grow tremendously through the use of Blockchain technology. I knew it was a very powerful technology, but I didn't expect to achieve these results so fast. And I owe it to this TECH program, which taught me everything to succeed"

Course Management

The teaching staff of this Executive Master's Degree is composed of active *blockchain* technology experts and they will share with their students all the keys in this field, so that they can later apply them in their own companies. In this way, it is guaranteed that everything they learn in this program has a practical application that will substantially improve the future prospects of their companies.

The leading experts in Programming for Blockchain have come together to offer you a high-level qualification that will be fundamental to your professional development in the field"

Management
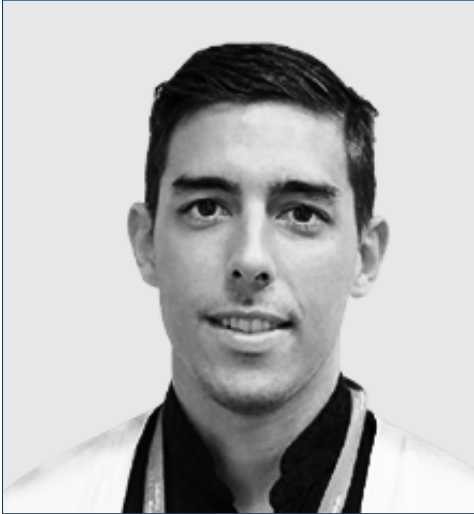
Mr. Torres Palomino, Sergio

- Blockchain Architect Telefónica
- Blockchain Architect Signeblock
- Blockchain Developer Blocknitive
- Big Data Engineer Golive Services
- Big Data Engineer IECISA
- Degree in Computer Engineering from San Pablo CEU University
- Master's Degree in Big Data Architecture
- Master's Degree in Big Data and Business Analytics

Professors

Mr. Callejo, Carlos
- Academic Director for 5 editions of the Master's Degree in Applied Blockchain at UEMC and UCAM
- CEO Block Impulse
- CTO Stocken Capital
- Master's Degree in Applied Blockchain
- FP2 Information Systems and Telecommunications
- Co-author of the book Cryptocurrencies For Dummies
- Trainer in the infoproduct Cryptocurrencies for everyone Plus

Mr. Vaño Francés, Juan Francisco
- Solidity Engineer at Vivatopia
- Computer Science Engineer at the Polytechnic University of Valencia
- Senior Computer Technician at R. Belda Lloréns
- Data Science Tools Course
- Specialized in DApp programming and Smart Contract development with Solidity

Mr. Herencia, Jesús
- Blockchain and DLT Consultant
- IT Director in Banking (Credit Agricole)
- Certificate in Computer Systems Engineering UPM
- Co-Director of Blockchain Specialist Course at the School of Legal Practice at UCM
- Lecturer at EAE on Cryptoassets and Blockchain

Ms. Carrascosa, Cristina
- Lawyer and Managing Partner of ATH21
- Cuatrecasas Law Firm
- Broseta Law Firm
- Despacho Pinsent Masons
- Degree in Law from the University of Valencia
- Master's Degree in Business Consulting from IE Law School and Master's Degree in Taxation and Taxation from CEF
- Director of the Blockchain Program at IE Law School
- Co-author of Blockchain: the industrial revolution of the internet

Mr. García de la Mata, Íñigo
- Architecture Leader at Grant Thornton, Innovation Department
- Bachelor's Degree in Industrial Engineering with a Major in Electronics
- Industrial Engineering, Master's Degree in Electronics from Universidad Pontificia de Comillas
- Degree in Computer Engineering from UNED
- Lecturer in Blockchain University courses at UNIR
- Lecturer and Blockchain Bootcamp and Geekshub
- TFG tutoring at Comillas Pontifical University

Mr. de Araujo, Rubens Thiago
- Program/Project Manager IT Blockchain for Supply Chain at Telefónica Global Technology
- Logistics Innovation and Projects Manager at Telefónica Brazil
- Graduate in Technological Logistics and Master in PMI Project Management from SENAC University (Brazil)
- Master's Degree in PMI Project Management from SENAC University (Brazil)
- Graduate in Technological Logistics from SENAC University (Brazil)
- Lecturer in Internal Training Leadership at Telefónica Brazil for Supply Chain Training and the use of new technologies "Logistics 4.0"
- Instructor and Multiplier of internal mini courses of Change Management in Integrated Logistics

Ms. Foncuberta Marina
- Lawyer ATH21, Blockchain, Cybersecurity, IT, Privacy and Data Protection
- Attorney Pinsent Masons, Blockchain Cybersecurity, IT, Privacy and Data Protection Department
- Lawyer as part of the Secondment Program, Technology, Privacy and Data Protection Department, Wizink
- Lawyer as part of the Secondment Program, Cybersecurity, IT, Privacy and Data Protection Department, IBM
- Law Degree and Postgraduate Certificate in Business Studies from the Universidad Pontifica Comillas
- Master's Degree in Intellectual and Industrial Property, Universidad Pontificia Comillas (ICADE), Madrid
- Program on Law and Blockchain: "Blockchain: Legal Implications".
- Professor at San Pablo CEU University: subject "Law and new technologies: Blockchain"

Ms. Salgado Iturrino, María

- Blockchain Manager Iberia & LATAM Inetum
- Identity Comission Core Team Leader Alastria
- Conwet Research Lab. niversidad Politécnica de Madrid
- Software Developer Internship Indra
- Professor of Blockchain Applied to Business Polytechnic University of Madrid
- Degree in Software Engineering from the Complutense University of Madrid (UCM)
- Master's Degree in Computer Engineering from the Polytechnic University of Madrid (UPM)

Mr. Triguero Tirado, Enrique

- Chief Technical Officer of Blockchain Infrastructure at UPC-Threepoints
- Chief Technical Officer at Ilusiak
- Project Management Officer at Ilusiak and Deloitte
- ELK Engineer at Everis
- Systems Architect at Everis
- Graduated in Technical Engineering in Computer Systems at the Polytechnic University of Valencia
- Master in Blockchain and its Applications to Business by ThreePoints and Polytechnic University of Valencia

Mr. Olalla, Martín

- Blockchain Technical Specialist at IBM SPGI
- Blockchain Technical Sales Specialist. IBM
- Director of Architecture. Blocknative
- Digital Electronics Technician
- Blockchain Architect – IT Infrastructure Architect – IT Project Manager Business areas: Software, Infrastructure, Telecommunications

10
Impact on Your Career

This program is a before and after for all those who complete it, as it opens the doors to numerous opportunities in a booming technological field such as *Blockchain*. Therefore, at the end of the program, students will be in possession of a series of skills and competencies that will enable them to progress both in business and professionally. It is, therefore, a great option for those who wish to turn their careers around by delving into the digital tool of the present and the future.

tech

"

Make your career take off. Enroll now in this Executive Master's Degree and access the best opportunities thanks to the most advanced technology of the moment"

Are you ready to take the leap?
Excellent professional development awaits you.

TECH's Executive Master's Degree in Blockchain Programming is an intensive program that prepares you to face challenges and business decisions in the field of Blockchain technology. The main objective is to promote personal and professional growth. Helping students achieve success.

If you want to improve yourself, make a positive change professionally and network with the best, this is the place for you.

The improvement you've been waiting for is here. Blockchain is the present and the future.

Success awaits you: progress hand in hand with Blockchain technology thanks to this Executive Master's Degree.

When the change occurs

During the program	During the first year	After 2 years
13%	**60%**	**27%**

Type of change

Internal Promotion **45%**

Change of Company **42%**

Entrepreneurship **13%**
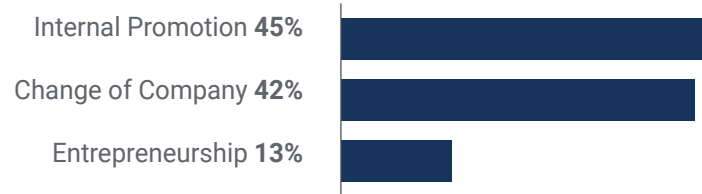
Salary increase

This program represents a salary increase of more than **27.35%** for our students.

Salary before	A salary increase of	Salary after
$55,400	**27.35%**	**$70,600**

11

Benefits for Your Company

This Executive Master's Degree in Blockchain Programming will produce enormous benefits directly and indirectly in the company, since it will open the doors to great business opportunities thanks to this innovative technology. Therefore, this program is the answer for those who are looking for a boost for their companies and wish to enter one of the most booming areas at present at a technological and business level.

Bring the latest innovations in digital technology to your company and make it grow exponentially"

Developing and retaining talent in companies is the best long-term investment.

01

Intellectual Capital and Talent Growth

The professional will introduce the company to new concepts, strategies, and perspectives that can bring about significant changes in the organization.

02

Retaining high-potential executives to avoid talent drain

This program strengthens the link between the company and the professional and opens new avenues for professional growth within the company.

03

Building agents of change

You will be able to make decisions in times of uncertainty and crisis, helping the organization overcome obstacles.

04

Increased international expansion possibilities

Thanks to this program, the company will come into contact with the main markets in the world economy.

05

Project Development

The professional can work on a current project or develop new projects in the field of R&D or Business Development within their company.

06

Increased competitiveness

This Executive Master's Degree will equip students with the skills to take on new challenges and drive the organization forward.

12 Certificate

The Executive Master's Degree in Blockchain Programming guarantees students, in addition to the most rigorous and up-to-date education, access to a Executive Master's Degree issued by TECH Technological University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"
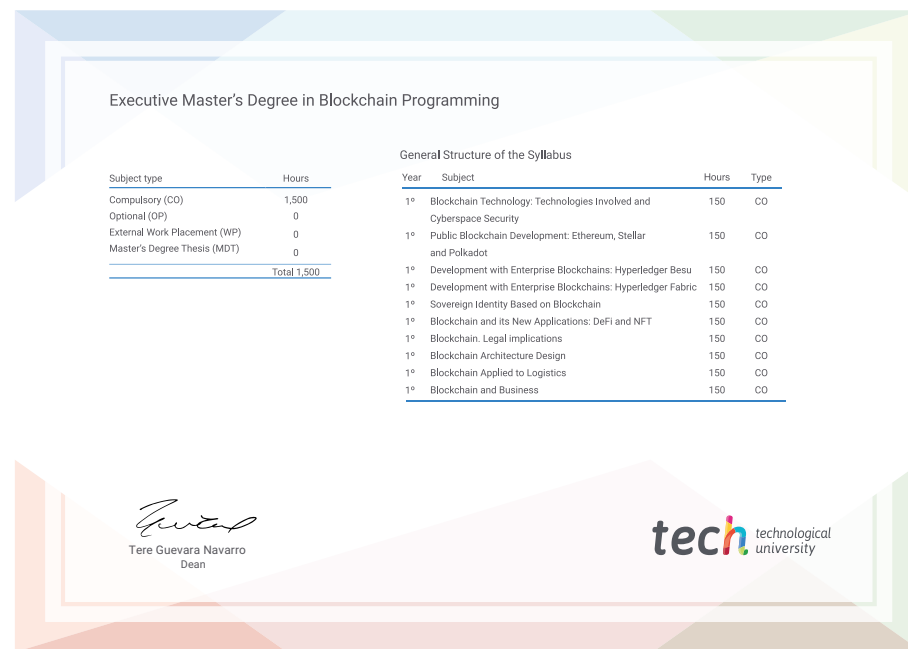
This **Executive Master's Degree in Blockchain Programming** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Executive Master's Degree** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Executive Master's Degree in Blockchain Programming**
Official N° of Hours: **1,500 h.**

tech technological university

Awards the following
CERTIFICATE
to

Mr./Ms. _____ with identification number _____.
For having successfully passed and accredited the following program

EXECUTIVE MASTER'S DEGREE
in

Blockchain Programming

This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

Executive Master's Degree in Blockchain Programming

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
Total	1,500

General Structure of the Syllabus

Year	Subject	Hours	Type
1°	Blockchain Technology: Technologies Involved and Cyberspace Security	150	CO
1°	Public Blockchain Development: Ethereum, Stellar and Polkadot	150	CO
1°	Development with Enterprise Blockchains: Hyperledger Besu	150	CO
1°	Development with Enterprise Blockchains: Hyperledger Fabric	150	CO
1°	Sovereign Identity Based on Blockchain	150	CO
1°	Blockchain and its New Applications: DeFi and NFT	150	CO
1°	Blockchain. Legal implications	150	CO
1°	Blockchain Architecture Design	150	CO
1°	Blockchain Applied to Logistics	150	CO
1°	Blockchain and Business	150	CO

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Dean

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*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.

Executive Master's Degree
Blockchain Programming

Language: **English**

Course Modality: **Online**

Duration: **12 months**

Certificate: **TECH Technological University**

Official N° of Hours: **1,500 h.**

Executive Master's Degree
Blockchain Programming

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