Postgraduate Certificate
Business Blockchain Development: Hyperledger Besu

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Postgraduate Certificate
Business Blockchain Development: Hyperledger Besu

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

Website: **www.techtitute.com/in/information-technology/postgraduate-certificate/business-blockchain-development-hyperledger-besu**

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01
Introduction

Hyperledger Besu is one of the leading clients for Ethereum. Therefore, it is an essential tool for those professionals who are involved in developing business Blockchain projects in which Smart Contracts are designed and executed. For this reason, computer scientists working in this field need to keep abreast of the latest developments in this area, and this qualification provides them with this knowledge. In this way, this program delves into relevant issues such as Besu securitization, Finetuning or Subgraph, among many others, which will make them specialists in this complex and exciting area.

Get the most out of Hyperledger Besu with this Postgraduate Certificate, which provides you with the latest knowledge about this powerful tool"

Ethereum is one of the great platforms out there for programming Smart Contracts. Smart contracts are already a reality thanks to Blockchain technology, which allows them to be designed and executed automatically, following the rigid but secure rules of blockchain. But you need a client to manage Ethereum, and Hyperledger Besu is one of the main ones.

For that reason, this Postgraduate Certificate in Business Blockchain Development: Hyperledger Besu is a key qualification for those professionals who want to work in this field with the best tools, as it offers them the latest advances in this powerful client and Ethereum. As a result, students in this program will learn about the most recent innovations in areas such as securitization by means of a node scheme, the most important applications developed on Besu or interoperability with other clients such as Geth, among many others.

This process will be carried out following TECH's powerful 100% online learning methodology, which has been designed with the objective of allowing the computer scientists to develop their professional career without being interrupted by their studies. At the same time, the student will enjoy a large amount of multimedia pedagogical content such as interactive summaries, master classes or explanatory videos.

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

- The development of practical cases presented by Blockchain experts
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice.
- Practical exercises where the self-assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work.
- Content that is accessible from any fixed or portable device with an internet connection

This Postgraduate Certificate will enable you to master the best client for Ethereum"

"*Incorporate the latest knowledge about Hyperledger Besu into your work and develop the best business projects in Blockchains*"

Smart Contracts are the present and the future and knowing this tool will allow you to program them with great efficiency.

By the end of this program, you will have mastered Hyperledger Besu and know all its main applications.

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

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

This program is designed around Problem-Based Learning, whereby the professionals must try to solve the different professional practice situations that arise throughout the program. For this purpose, students will be assisted by an innovative, interactive video system created by renowned and experienced experts.

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HYPERLEDGE

02
Objectives

The main objective of this Postgraduate Certificate in Business Blockchain Development: Hyperledger Besu is to bring to the IT specialist the latest developments in this important Ethereum client, which is the leading smart contract development platform available today. Consequently, with this qualification, the student will be able to deepen in one of the most important utilities of Blockchain technology.

> *Develop enterprise blockchains effectively using Hyperledger Besu"*

General Objectives

- Develop design criteria for applications on production Hyperledger Besu clients
- Provide a foundation in the management and configuration of Hyperledger Besu-based networks
- Promote best practices when developing applications with dependency on Blockchain networks, particularly those based on Ethereum and on Hyperledger Besu clients
- Integrate the student's existing knowledge in a refined way based on the needs of industry and business with their notions of quality, effort measurement and development valuation, expanding their value as a Blockchain application developer

Specific Objectives

- Identify key configuration points in the consensus protocols available with Hyperledger Besu

- Correctly measure a Hyperledger Besu service to support enterprise applications

- Develop automated test protocols for quality validation in Hyperledger Besu environments

- Establish safety criteria for a production environment with Hyperledger Besu

- Compile the different types of configurations on Hyperledger Besu clients

- Determining the sizing criteria for an application with Hyperledger Besu

- Strengthen knowledge of the functioning of the consensus mechanisms implemented in Hyperledger Besu

- Define the most interesting technological Stack in the implementation of infrastructure and development of applications based on Hyperledger Besu

Achieve all your professional goals by specializing in the best client for Ethereum"

03
Course Management

In order to properly delve into Hyperledger Besu and its application in Ethereum you need the best faculty. As such, this Postgraduate Certificate has brought together a high-level teaching staff made up of active professionals who know this powerful client to perfection, and who will directly transmit to the students all the keys to its correct handling. It is therefore guaranteed that the computer scientists who complete this program will be able to apply the best solutions in the field of Blockchain technology in their work.

Great professionals in the Blockchain field transmit you all the keys to configure and use Hyperledger Besu with the maximum guarantees of success"

International Guest Director

Chris Sutton is a leading professional with extensive experience in the field of technology and finance, specializing in the Blockchain area. In fact, he has held the senior position of Director of the Blockchain and Digital Assets Department at Mastercard. In addition, he has been the Founder of the consulting firm N17 Capital, in which he offers advice to companies in the field of Blockchain and digital assets. So, one of his functions has been to identify the components that make up these new tools, analyze them and create working strategies.

His professional experience has included high-level roles in leading companies in the sector, such as Oasis Pro Market, where he has performed duties as Director of Blockchain Services. In addition, he has worked as Mergers and Acquisitions Product Manager at Cisco, and as Product Manager at IBM. These positions have allowed him to stand out internationally for his ability to lead teams, develop innovative strategies and manage large-scale projects.

Throughout his career, he has participated in important technological and financial events. In this sense, Chris Sutton has given presentations and has been part of international panels, along with other leading experts in this sector. In this way, on the occasion of the 15th anniversary of the white paper on Bitcoin, he participated in the events of the FinTech week in Hong Kong. He also presented his expertise at a conference organized by Mastercard in Dubai on banking in the digital age and the impact of digital assets. Likewise, his analyses have focused on delving into the history, principles and future of the Blockchain.

In short, his strategic vision and outstanding skills in programming and algorithms have been key to his success in the international market, consolidating him as a leader in his field.

D. Sutton, Chris

- Director of Blockchain and Digital Assets at Mastercard, Miami, U.S.A.
- Founder of N17 Capital
- Director of Blockchain Services at Oasis Pro Market
- Mergers and Acquisitions Product Manager at Cisco
- Product Manager at IBM
- Contributor at Cointelegraph
- Master's degree in Financial Systems Engineering from University College London
- Bachelor's Degree in Computer Science from Florida International University

Thanks to TECH, you will be able to learn with the best professionals in the world"

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. 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. Triguero Tirado, Enrique

- Blockchain Infrastructure Technical Manager at UPC-Threepoints
- Chief Technical Officer at Ilusiak
- Project Management Officer at Ilusiak and Deloitte
- ELK Engineer at Everis
- Systems Architect at Everis
- Degree in Technical Engineering in Computer Systems at the Polytechnic University of Valencia
- Master's Degree in Blockchain and its Business Applications from ThreePoints and the Polytechnic University of Valencia
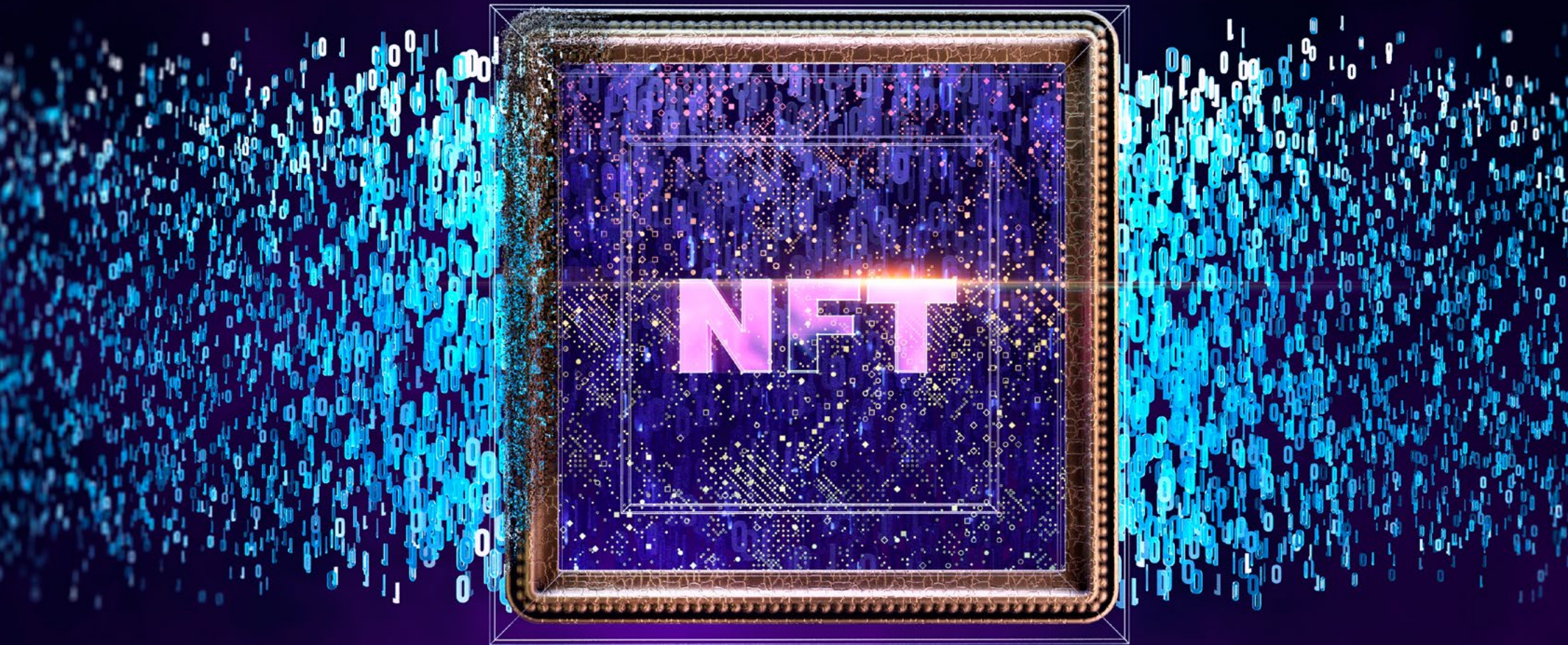
Structure and Content

This Postgraduate Certificate in Business Blockchain Development: Hyperledger Besu is composed of 1 specialized module, in which you will be able to go deeper into issues such as Finetuning, RPC securitization with TLS, transaction-based balancers or Offchain tools, among many others. In this way, the computer scientist will have at his fingertips the best utilities to configure and use properly this powerful Ethereum client, always taking into account the latest developments in this area.
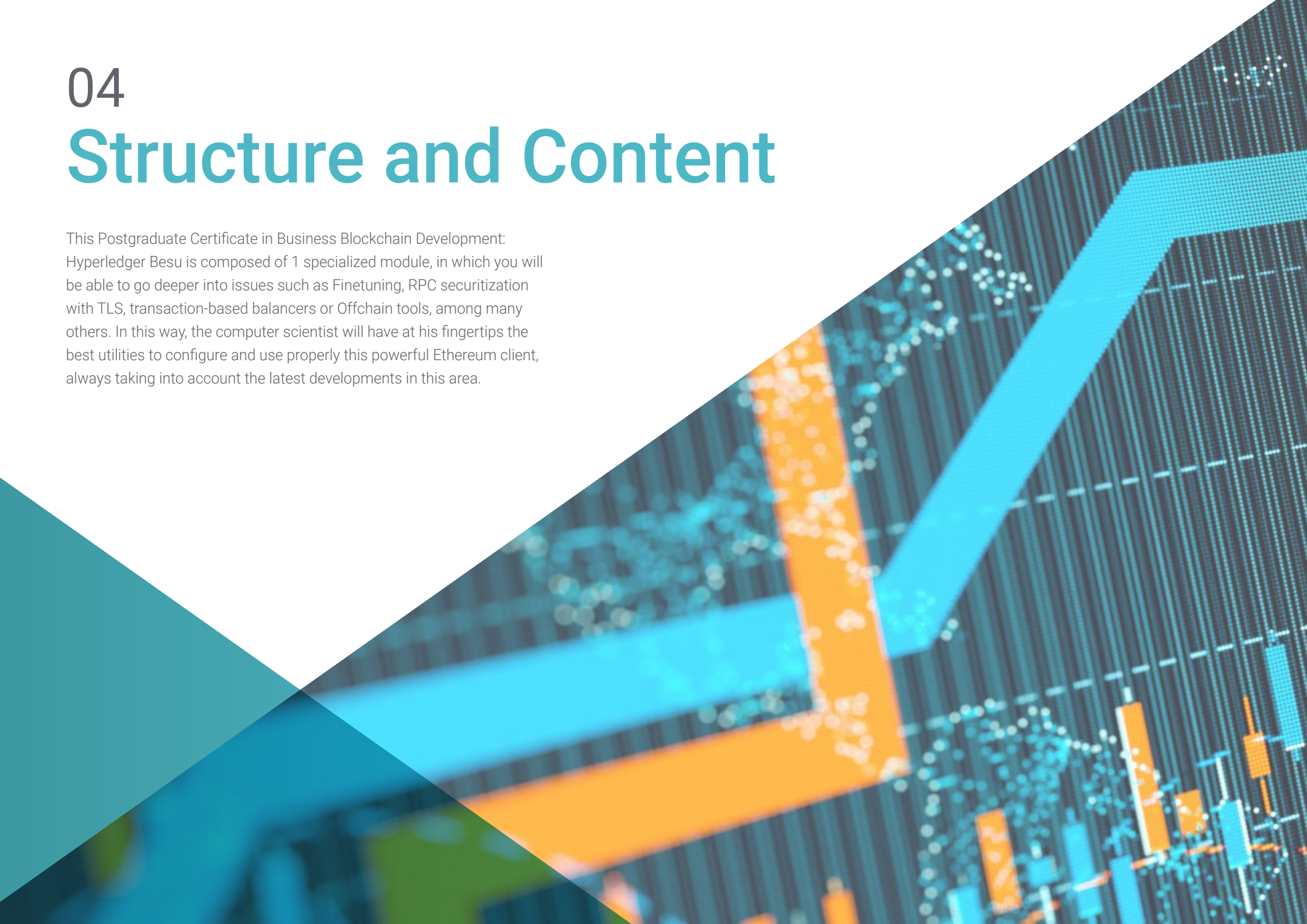
Learn all the keys to configure and manage Hyperledger Besu and progress, as a developer, in the world of Blockchain technology"

Module 1. Business Blockchain Development: Hyperledger Besu

1.1. Besu Configuration

    1.1.1. Key Configuration Parameters in Production Environments

    1.1.2. Finetuning for Connected Services

    1.1.3. Good Configuration Practices

1.2. Blockchain Configuration

    1.2.1. Key Configuration Parameters for PoA

    1.2.2. Key Configuration Parameters for PoW

    1.2.3. Genesis Block Configurations

1.3. Securing Besu

    1.3.1. RPC Securitization with TLS

    1.3.2. RPC Securitization with NGINX

    1.3.3. Securitization by Means of a Node Scheme

1.4. Besu in High Availability

    1.4.1. Node Redundancy

    1.4.2. Balancers for Transactions

    1.4.3. Transaction Pool over Messaging Queue

1.5. Offchain Tools

    1.5.1. Privacy. Tessera

    1.5.2. Identity. Alastria ID

    1.5.3. Data Indexing. Subgraph

1.6. Applications Developed on Besu

    1.6.1. ERC20 Tokens-Based Applications

    1.6.2. ERC 721 Tokens-Based Applications

    1.6.3. ERC 1155 Token-Based Applications

1.7. Besu Deployment and Automation

    1.7.1. Besu from Docker

    1.7.2. Besu from Kubernetes

    1.7.3. Besu in Blockchain as a Service

These contents will make you a great specialist in Ethereum and Hyperledger Besu"

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.

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.

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

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.

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. 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.

20%

25%

4%

3%
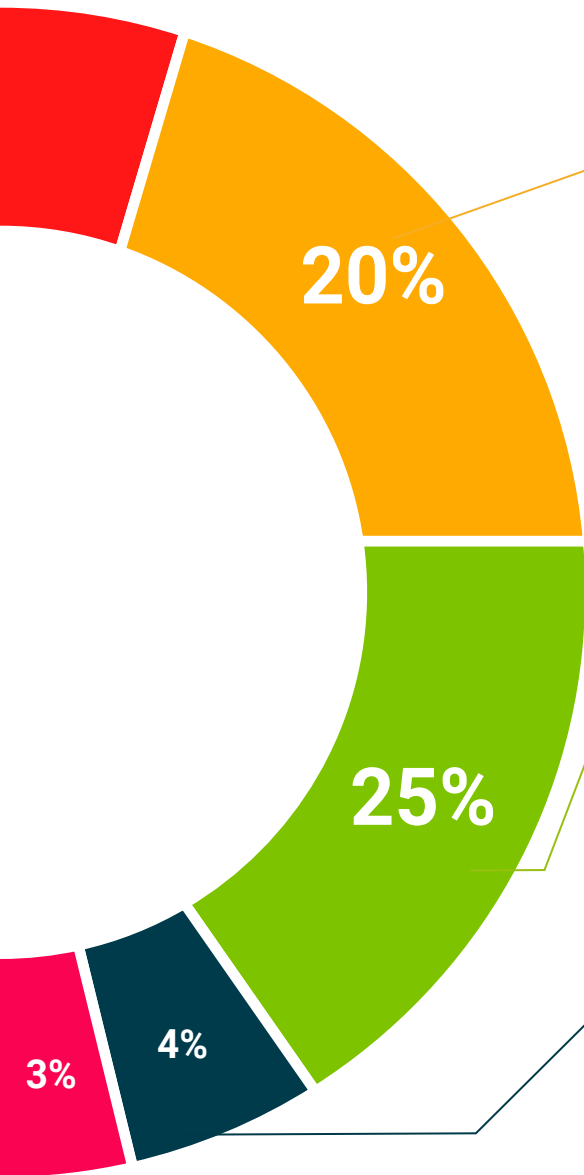
Case Studies

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 Business Blockchain Development: Hyperledger Besu guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Business Blockchain Development: Hyperledger Besu** 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 Business Blockchain Development: Hyperledger Besu**

Official Nº of Hours: **150 h.**

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Awards the followi ng
CERTIFICATE
to

Mr./Ms. _____, with identification number _____ .
For having passed and accredited the following progra   m

POSTGRADUATE CERTIFICATE

in

Business Blockchain Development: Hyperledger Besu

This is a qualification awarded by this University, equivalent to 150 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 Navar ro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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.

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