

# Postgraduate Diploma Decentralized Finance



## Postgraduate Diploma Decentralized Finance

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

Website: [www.techtute.com/us/informatics/postgraduate-diploma/postgraduate-diploma-decentralized-finance](http://www.techtute.com/us/informatics/postgraduate-diploma/postgraduate-diploma-decentralized-finance)

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# 01

# Introduction

The multidisciplinary nature of Decentralized Finance and its various applications in today's digital environment have made this field one of the highest performing with general crypto, not to mention its secure, private and transparent nature. However, they are still complex mass data processing software built on Blockchain technology. For this reason, it is a sector with maximum capacity for professionals in Information Technology and computing, so those interested can count on this TECH Technological University program to guide their career towards it. Through exhaustive and dynamic education, the graduate will work on perfecting their competencies in the development of DeFi ecosystems and protocols through 450 hours of theoretical and practical experience, 100% online.



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*You are facing a unique and 100% online academic opportunity to specialize in an area with wide future expectations within the Cryptoeconomics and Blockchain sector"*

The security, transparency and flexibility that Decentralized Finance provides for the exchange of data and assets is what has made it grow tremendously in a very short period of time. In addition, the automatic nature of smart contracts and the lack of intermediaries in transactions beyond the users themselves has encouraged their use by an increasing number of individuals and entities at the international level. However, mastering the Blockchain networks that guarantee their operation requires comprehensive knowledge about the conformation and management of blockchains and the databases that structure them.

This is the basis for this Postgraduate Diploma, a multidisciplinary and dynamic program that will allow the IT professional to learn about this area and acquire specialized knowledge about its application in the current crypto environment. This program delves into the DeFi ecosystems and their main networks, with particular emphasis on the principle of collateralization as a guarantee and on current financial systems. It then focuses its development on the analysis of the different protocols and applications of decentralized exchanges, highlighting the importance of NFTs in digital assets. Finally, it delves into the study of the main investment strategies in the current market, providing the keys to develop the configuration of a profitable and highly profitable investment portfolio.

All this, along 450 hours of theoretical and practical training 100% online that includes the best syllabus, use cases based on real situations and multiple additional high-quality material. All of this content will be available on the Virtual Campus, which can be accessed from any device with an internet connection, whether it is a computer, tablet or cell phone. In this way, TECH Technological University offers a highly beneficial academic experience for their professional development, adapted to the needs of the graduates and to the specifications and requirements of the current DeFi market.

This **Postgraduate Diploma in Decentralized Finance** 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 to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*A program that pits centralized versus decentralized economics, so you can get up to speed on their differences and similarities and establish joint and specific strategies"*

“

*You will work on collateralization as a guarantee principle and on the best projects to carry them out with a very high guarantee index to make them profitable as assets”*

*You will have access to the Virtual Classroom 24 hours a day throughout the week, so that you can design your own academic calendar based on your own availability.*

*You will be able to hone your creative skills as a source of wealth in the tokenization of digital assets.*

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational 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 education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. This will be done with the help of an innovative system of interactive videos made by renowned experts.



# 02 Objectives

The high degree of specialization required for the exhaustive handling of automation and management programs for Decentralized Finance is what has led TECH Technological University to develop this Postgraduate Diploma. Therefore, its objective is to make available to graduates the most innovative information related to the mastery of their strategies and protocols. This end, it will provide them with 450 hours of the best theoretical-practical and additional material, all framed in a convenient and accessible 100% online format.





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*If your academic goals include mastering the structuring of NFTs applicable to DeFi, this is the perfect choice for you. What are you waiting for? Enroll now!"*



## General Objectives

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- ◆ Analyze DeFi advantages
- ◆ Understand how it works
- ◆ Perform DeFi project analysis
- ◆ Manage the DeFi ecosystem
- ◆ Analyze the most used DeFi analysis tools
- ◆ Generate specialized knowledge on the most widely used DeFi technology
- ◆ Familiarize yourself with the most relevant DeFi protocols in the crypto ecosystem
- ◆ Determine the risks of operating on DeFi protocols
- ◆ Identify the main market movements
- ◆ Examine and propose investment entries and exits
- ◆ Evaluate and develop investment strategies
- ◆ Compile and demonstrate previous movements that will serve as a basis for future investments



*Among the most significant features of this program is its section dedicated exclusively to the current relationship between the growing Metaverse and Blockchain"*





## Specific Objectives

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### Module 1. DeFi Ecosystem

- ◆ Examine the potential uses of DeFi
- ◆ Generate specialized knowledge on Loan Borrowing and Lending
- ◆ Analyze Banking Services
- ◆ Master decentralized Marketplaces
- ◆ Developing the operation of DeFi smart contracts
- ◆ Raise the present and future challenges of Decentralized Finance

### Module 2. DeFi Protocol Analysis

- ◆ Examine DeFi protocol characteristics
- ◆ Establish DeFi architecture
- ◆ Analyze financial, technical, operational and emerging risks
- ◆ Analyze decision-making policies

### Module 3. Investment Strategy Analysis

- ◆ Analyze each potential investment candidate in a technical (graphs) and fundamental (projects) manner
- ◆ Examine trading strategies based on market trends
- ◆ Create data operation reports that, through their indicators, allow perfectly timed entrances and exits
- ◆ Support strategies through analytical explanations
- ◆ Establish trend movements that verify whether we are in bull or bear markets
- ◆ Demonstrate, through resistances and supports, the trend lines of the markets

# 03

# Course Management

Among the maxims of TECH Technological University, in addition to offering, with total guarantee, the most innovative and exhaustive information, the formation of specialized faculty in the sector on which the program in question is based stands out. An example of this is this Postgraduate Diploma, for which we have selected a teaching team versed in Decentralized Finance and in the undertaking of successful projects within the Cryptoeconomy. Thanks to this, the graduate will be able to know first-hand the novelties of this digital industry and soak up its wisdom to develop their own activity with guarantee and security.





“

*The teaching team will be at your disposal to solve, through the Virtual Campus, any questions you may have during the 6 months of this Postgraduate Diploma”*

## 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 San Pablo CEU 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. Fernández Karwowska, Antonio

- ♦ Full Stack Web3 Developer for FRK Investments
- ♦ Web3 Analyst for BeToken Capital
- ♦ Development Manager at NFT42
- ♦ Analyst specialized in DeFi protocols
- ♦ MATLAB programmer internship at CSIC
- ♦ Graduate in Physical Sciences from the Complutense University of Madrid



# 04

## Structure and Content

The quality and prestige that define TECH Technological University and place it as one of the best digital universities worldwide has been the result of years of effort and struggle to shape the best 100% online degrees. In each of them, a team versed in the fields works, which is responsible for selecting not only the theoretical information that makes up the syllabus, but also use cases based on real situations and hours of additional high-quality material. Thanks to this, it is possible to offer highly capacitating academic experiences compacted in a convenient and flexible format that facilitates the specialization of the graduate from any place, without schedules and through any device with internet connection.







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*You will be able to perfect your skills  
in coin stacking and asset farming  
as new models of economy”*

## Module 1. DeFi Ecosystem

- 1.1. Decentralized Finance or DeFi Concept
  - 1.1.1. Financial Ecosystems
  - 1.1.2. DeFi solutions: Transparency and Open Source
  - 1.1.3. Dapps and Peer to Peer Concept
- 1.2. Main DeFi Networks
  - 1.2.1. DeFi Stack on Ethereum
  - 1.2.2. Polkadot
  - 1.2.3. Other DeFi Networks
- 1.3. Centralized and Decentralized Market Makers
  - 1.3.1. Centralized vs. Decentralized
  - 1.3.2. MakerDao
  - 1.3.3. Work Environments or Frameworks
- 1.4. Centralized vs. Decentralized Economy
  - 1.4.1. Centralized Theories
  - 1.4.2. Decentralized Theories
  - 1.4.3. Case Studies and Scenarios
- 1.5. Yield Farming
  - 1.5.1. Decentralized Profitability
  - 1.5.2. Yield Farming Case Studies
  - 1.5.3. Project Analysis
- 1.6. Liquidity Mining
  - 1.6.1. Liquidity Mining Benefits
  - 1.6.2. Yield Farming Differences
  - 1.6.3. Project Analysis
- 1.7. Collateralization as a Guaranty Principle
  - 1.7.1. Collateralization
  - 1.7.2. Best Collateralization Projects
  - 1.7.3. Guarantees as Assets to Be Made Profitable

- 1.8. Leverage
  - 1.8.1. When to Use Leverage
  - 1.8.2. Differences between Leverage and Collateralization
  - 1.8.3. Leverage and Volatility
- 1.9. Current Financial System and CBDCs
  - 1.9.1. Central Banks and Cryptos
  - 1.9.2. State Cryptocurrencies or CBDCs
  - 1.9.3. Future Scenario Theories
- 1.10. Asset Tokenization
  - 1.10.1. Real Estate Assets
  - 1.10.2. Works of Art
  - 1.10.3. Creative Capacity as a Source of Wealth
  - 1.10.4. Management of New Financial Instruments

## Module 2. DeFi Protocol Analysis

- 2.1. Stablecoins
  - 2.1.1. Stablecoin Impact on the DeFi Ecosystem
  - 2.1.2. Stablecoins PEGGED
  - 2.1.3. Algorithmic Stablecoins
  - 2.1.4. Terra's Failure
- 2.2. Decentralized Exchanges
  - 2.2.1. Principles of AACS
  - 2.2.2. Uniswap
  - 2.2.3. SushiSwap
  - 2.2.4. Balancer
- 2.3. DeFi Interchain Applications
  - 2.3.1. A Multichain Future
  - 2.3.2. Layer 2
  - 2.3.3. Layer 2 Limitations
  - 2.3.4. CrossChain (Bridges)



- 2.4. ParaChain DeFi and Bridges Applications
  - 2.4.1. Oracles
  - 2.4.2. Cosmos and Polkadot (ICC)
  - 2.4.3. Limitations of Creating Your Own Blockchain
  - 2.4.4. Omnichain
- 2.5. Loans, Collateralization and Interest
  - 2.5.1. Lending Crypto
  - 2.5.2. Collateralization
  - 2.5.3. Fixed Interest Rate
  - 2.5.4. Aave and Compound
  - 2.5.5. DeFi for Good
- 2.6. DeFi Insurance
  - 2.6.1. How DeFi Insurance Works
  - 2.6.2. Relevant DeFi Insurance Protocols
  - 2.6.3. KYC Insurance
- 2.7. NFTs and DeFi
  - 2.7.1. NFT Characteristics in DeFi
  - 2.7.2. NFT Structure
  - 2.7.3. Collateralization
  - 2.7.4. Marketplaces
- 2.8. DeFi Analysis Tools
  - 2.8.1. DeFi Protocol Analysis
  - 2.8.2. Main DeFi Analysis Tools
  - 2.8.3. Best Practices for Interpreting Information
- 2.9. Metaverse and Blockchain
  - 2.9.1. The Ultimate DeFi Application
  - 2.9.2. NFTs as Virtual Properties
  - 2.9.3. Tokens as a Course Currency
  - 2.9.4. Current Metaverses
- 2.10. Decentralized Finance Risks
  - 2.10.1. DeFi 2.0. and the Ponzi Scheme
  - 2.10.2. Hacking Smart Contracts
  - 2.10.3. Rug Pulls
  - 2.10.4. Impermanent Loss

### Module 3. Investment Strategy Analysis

- 3.1. Exchanges Analysis
  - 3.1.1. Main Competitors
  - 3.1.2. Identification Procedures
  - 3.1.3. Order Types
- 3.2. DeFi Alternative Markets (Pancake Swap)
  - 3.2.1. Market Players
  - 3.2.2. DeFi Typology
  - 3.2.3. Cash Flow Pools
- 3.3. Crypto Investment Models
  - 3.3.1. Yield Farming
  - 3.3.2. Flash Loans
  - 3.3.3. CFD Trading
- 3.4. Coin Stacking
  - 3.4.1. The Right Choice
  - 3.4.2. Temporariness
  - 3.4.3. Masternodes
- 3.5. Farming
  - 3.5.1. New Economy Model
  - 3.5.2. Time as a Partner
  - 3.5.3. Advanced Farming Platform Analysis
- 3.6. Investment Portfolio Configuration
  - 3.6.1. Market Efficiency
  - 3.6.2. Volatility Frontier Portfolio
  - 3.6.3. Volatility Positioning
- 3.7. Crypto Arbitration
  - 3.7.1. Technology and its "slots"
  - 3.7.2. Market Disagreements
  - 3.7.3. Risk Limitation Techniques





- 3.8. NFT Architecture
  - 3.8.1. Fungible vs. Non-Fungible
  - 3.8.2. NFTs on the Web 3
  - 3.8.3. Architecture of a NFT System
- 3.9. NFT Operations
  - 3.9.1. Create, Buy and Sell NFTs
  - 3.9.2. NFTs and Sport
  - 3.9.3. NFTs and the Immediate Future
- 3.10. Decision-Making and Risk Management
  - 3.10.1. On-Chain Metrics
  - 3.10.2. Project Metrics
  - 3.10.3. Financial Metrics

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*Do not hesitate and bet on a program that will mark a before and after in your career as an IT professional specializing in a growing field such as DeFi”*

# 05 Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

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*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”*



*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*





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

### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

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

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



#### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### Practising Skills and Abilities

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



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





#### Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



#### Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



06

# Certificate

The Postgraduate Diploma in Decentralized Finance guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma degree issued by TECH Technological University.



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

This **Postgraduate Diploma in Decentralized Finance** 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 Diploma** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Diploma in Decentralized Finance**

Official N° of hours: **450 h.**



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



future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
online training  
development language  
classroom



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