

CFP Centro de Formación Permanente



TOKENIZATION & DEFI

Manuel Ortigueira Sánchez Ismael Santiago Moreno The course will enable graduates not only with the technical knowledge required to operate in the field of tokenization and decentralized finance but also with the fundamental soft skills and ethics to lead innovative and sustainable projects in the dynamic world of cryptocurrencies.

General objectives:

Provide a Solid Theoretical and Practical Foundation: Equip students with deep and comprehensive knowledge about blockchain, crypto assets, asset tokenization, and decentralized finance, combining theoretical fundamentals with practical applications.

Develop Skills in Analysis and Strategy: Foster the ability to perform technical, on-chain, and fundamental analyses, enabling students to assess the potential and risks of projects in the cryptocurrency field and apply effective strategies for the launch and commercialization of tokens.

Instill Ethical Practices and Legal Compliance: Emphasize the importance of adhering to ethical practices and compliance with current regulations, preparing students to lead projects that are not only innovative but also responsible and sustainable over time.

Prepare for Leadership in Digital Innovation: Train participants to become leaders and pioneers in digital innovation through the development and launch of tokenized projects that can transform industries and sectors.

Grant Professional Legitimacy: Provide students with a university degree that validates and accredits their experience in the field of tokenization and decentralized finance, distinguishing them in a market full of self-proclaimed experts.

Encourage the Application of Knowledge in Real Projects: Motivate students to apply the knowledge gained in the development of their own tokenization projects, with continuous support from professors for projects that excel in excellence and adherence to the ethical principles taught.

Promote Innovation and Business Transformation: Inspire students to use blockchain and crypto asset technologies to innovate and transform existing projects and businesses, paving new paths and creating value in an ethical and sustainable manner.

Through these objectives, the course commits to training highly qualified, ethical professionals prepared to successfully lead in the emerging and dynamic world of tokenization and decentralized finance.

Competencies:

Deep Understanding of Blockchain and Crypto Assets: Ability to understand and explain the fundamental principles of blockchain technology, the nature and functioning of crypto assets, and the dynamics of the cryptocurrency market.

Advanced Analytical Skills: Skill in conducting on-chain, technical, and fundamental analyses of crypto assets, allowing for accurate assessment of the value, potential, and risks associated with tokenization projects.

Development and Management of Tokenization Projects: Competence to design, plan, and execute tokenization projects from conception to launch and commercialization, applying project management methodologies adapted to the cryptocurrency environment.

Implementation of Effective Market Strategies: Ability to develop and implement marketing and communication strategies that effectively promote tokenized projects, capturing the attention of investors and users.

Implementation of Ethical Practices and Regulatory Compliance: Awareness and ability to apply ethical practices in all aspects of tokenization and decentralized finance, ensuring compliance with applicable regulations and laws.

Leadership in Digital Innovation and Business Transformation: Faculty to lead and foster digital innovation and business transformation through the application of blockchain and crypto asset technologies, promoting disruptive changes across various sectors.

Capacity for Critical Analysis and Problem Solving: Aptitude to identify complex challenges within the blockchain and crypto asset ecosystem, critically analyze them, and develop innovative and viable solutions.

Effective Collaboration and Teamwork: Ability to work effectively in multidisciplinary teams, collaborating and communicating effectively with professionals from various areas to achieve common objectives in tokenization projects.

These competencies will enable graduates not only with the technical knowledge required to operate in the field of tokenization and decentralized finance but also with the fundamental soft skills and ethics to lead innovative and sustainable projects in the dynamic world of cryptocurrencies.

Module/Course 1. ECONOMICS AND GAME THEORY

Number of Credits: 1.00 ECTS

Delivery Mode: Distance Learning

Start-End Dates: November 4 - November 11

Schedule: Distance learning, unscheduled module/course

Content:

1.-Monetary Evolution: From Bartering to Tokens

- History of Money: From the origins to the digital era
- The transition from physical coins to cryptoassets
- 2.- Money and Its Functions in the Modern Economy
 - Essential functionalities of money: Medium of exchange, unit of account, and store of value
- Comparison with the functionalities of tokens
- 3.- Dynamics of Economic Systems
 - Understanding of economic systems and their relevance to tokens
- Influence of economic systems on the adoption and stability of tokens
- 4.- Lessons from the Gold Standard for Tokenization
 - The gold standard and its influence on monetary confidence and stability
 - Analogies for backing value in tokenization
- 5.- Principles of Macroeconomics Applied to Tokens
 - Fundamentals of macroeconomics and their impact on the token ecosystem
 - Supply, demand, and monetary policies in the context of the cryptoeconomy
- 6.- Monetary Policy and Its Application in the Cryptoeconomy
 - · Adaptation of traditional monetary policies to the world of cryptoassets
 - Strategies for controlling supply and inflation in tokens
- 7.- Game Theory and Token Market Behavior
 - Application of game theory to the launch and commercialization of tokens
 - Strategic modeling of interactions in cryptoasset markets

Module/Course 2. DYNAMIC ENTREPRENEURSHIP WITH GENERATIVE AI FOR PROJECT TOKENIZATION

Number of Credits: 1.00 ECTS

Delivery Mode: Distance Learning

Start-End Dates: November 12 - November 18

Schedule: Distance learning, unscheduled module/course

- 1.-Agile Fundamentals: SCRUM in Innovation
 - Principles of SCRUM applied to rapid product development
 - Integration of generative AI in SCRUM teams
- 2.-Efficiency and Adaptability: Lean Start-Up and Al
 - Application of Lean Start-Up in Al-driven projects
 - Rapid validation of ideas with generative Al
- 3.- Modeling the Business: Strategies and Tools
 - Structuring the business model in the era of Al
 - Using AI to analyze and define the Value Curve
- 4.-Directed Innovation: ERIC Matrix and Al Insights
 - Prioritization and adjustment of product features with AI support
 - Extraction of Al insights to eliminate, reduce, increase, and create (ERIC) value
- 5.-Designing Irresistible Offers: Value Proposition Canvas
 - · Building the value proposition canvas with Al analysis
 - Customization of the value proposition using generative Al
- 6.-Digital Conquest: AI-Enhanced Digital Marketing
 - Digital marketing strategies and content generated by Al
- Optimization of campaigns with predictive AI analytics
- 7.- Turning Interest into Revenue: Smart Sales Funnel
 - Design of sales funnels using AI for segmentation and conversion
 - Automation and customization of the customer journey with AI
- 8.-Economic Strategy: Advanced Financial Planning
 - Financial plan integrating projections and analysis powered by Al
 - Al for financial simulations and risk scenarios
- 9.-Outlining the Future: The Smart Business Plan
 - Development of a business plan with Al support for market analysis and trends
 - Growth and scalability strategies with AI
- 10.- From Idea to Market: AI-Accelerated Prototyping and MVP
 - Creation and testing of prototypes with generative AI tools
 - Rapid evaluation of MVP through automated AI feedback
- 11.- Skills and Tools for the Al Entrepreneur
 - Development of key soft skills for managing AI projects
 - Use of AI-based tools for team management and collaboration

Module/Course 3. BLOCKCHAIN FUNDAMENTALS AND CRYPTO ASSETS

Number of Credits: 5.00 ECTS

Delivery Mode: Distance Learning

Start-End Dates: November 19 - December 12

Schedule: Distance learning, unscheduled module/course

Content:

1. Introduction to Blockchain and Bitcoin

- Philosophy and evolution of Blockchain
- Bitcoin: Origins and functionality
- 2. Fundamental Principles of Blockchain
 - Definition and conceptualization of Blockchain
 - Blockchain as the Internet of value
- 3. Consensus and Validation in Blockchain
 - Consensus protocols and algorithms
 - Comparison of Mining vs. Staking
- 4. Blockchain Network Architecture
 - P2P networks and the role of Nodes
 - Differences between permissioned and permissionless networks
- 5. Management and Security of Crypto Assets
 - Use and security of Wallets
 - Introduction to Stable Coins and CBDCs (Central Bank Digital Currencies)
- 6. Ethereum and Smart Contract Programming
 - Ethereum and the Ethereum Virtual Machine (EVM)
 - Principles of Smart Contract development
- 7. Updates and Scalability of Ethereum
 - Ethereum 2.0 and its improvements
 - Considerations on GAS and resource management
- 8. Interoperability and Other Blockchain Networks
 - EVM-compatible networks and their ecosystem
 - Oracles: Integration of external information into the blockchain
- 9. Decentralization: Challenges and Opportunities
 - Advantages and disadvantages of decentralization
 - Future challenges and development perspectives in blockchain

Module/Course 4. ECONOMIC TOKENIZATION: FUNDAMENTALS AND STRATEGIES FOR ASSET TOKENIZATION

Number of Credits: 6.00 ECTS

Delivery Mode: Distance Learning

Start-End Dates: January 7 - February 3

Schedule: Distance learning, unscheduled module/course

- 1. Fundamentals of Crypto Assets and Token Taxonomy
 - Definition and classification of crypto assets
 - Types of tokens: Security, Utility, Equity, and NFTs
- 2. Market Strategies and Launch for Tokens
 - Design and marketing of Utility Tokens
 - Planning and execution of ICOs, IEOs, and STOs
 - Management of DAOs
- 3. Tokenomics and Business Modeling
 - Design and adaptation of business models to the tokenization environment
 - Value creation and issuance policies
- 4. Value Capture Mechanisms and Deployment on Blockchain
 - Development of strategies to capture value with tokens
 - Integration and technological deployment on Blockchain
- 5. Finance and Liquidity in Tokenization
 - Financial planning for tokenization projects
 - Strategies for token liquidity and market analysis
- 6. Communication and Pitching of Tokenized Projects
 - Preparation of whitepapers and corporate decks
 - Preparation of elevator pitches and documentation for listing

Module/Course 5. DEEPENING IN NFTS: INNOVATIVE BUSINESS MODELS

Number of Credits: 2.00 ECTS

Delivery Mode: Distance Learning

Start-End Dates: February 4 - February 17

Schedule: Distance learning, unscheduled module/course

- 1. Introduction to NFTs: Concepts and Context
 - Understanding NFTs: Origins, functionality, and relevance
- 2. Technical Standards of NFTs
 - Exploration of ERC-721, ERC-2309, ERC-1155, and other relevant standards
- 3.NFTs in Art and Culture
 - Applications in the art world: Success cases and market transformation
- 4. NFTs in Sports and Entertainment
 - Fan tokens: Engagement and monetization in sports and beyond
- 5. Environmental and Social Impact of NFTs
 - NFTs and sustainability: Uses in climate and social spheres
- 6. Intellectual Property in the Era of NFTs
- NFTs versus patents and trademarks: New challenges and opportunities
- 7. Gamification and NFTs: The Play2Earn Wave
 - NFTs in gaming: Play2Earn models and their economic impact
- 8. Markets and Platforms for NFTs
 - Analysis of major global NFT markets and trends
- 9. Blockchain and NFTs in Web 3.0
 - Role and potential of NFTs in the infrastructure of Web 3.0
- 10. Exploring the Metaverse: A New Digital Horizon
 - Origin, evolution, and key elements of the metaverse

Module/Course 6. FUNDAMENTALS AND APPLICATIONS OF DeFi AND ReFi

Number of Credits: 3.00 ECTS

Delivery Mode: Distance Learning

Start-End Dates: February 18 - March 10

Schedule: Distance learning, unscheduled module/course

Content:

- 1. Introduction to Blockchain Technology and Digital Wallets
 - Fundamentals of Blockchain and its role in DeFi
 - Setup and use of Metamask to interact with DeFi
- 2. Exploration of Alternative Blockchains
 - Comparative analysis of BSC, Polkadot, Avalanche, RSK, and Polygon
- 3.Key Concepts of DeFi
 - Yield Farming and Liquidity Mining: Generating Yield in DeFi
 - Collateral and Leverage in Decentralized Finance
 - Understanding interest rates: Differences between APR and APY
 - Role and strategies of liquidity providers
 - Mechanics and use cases of flash loans

4. Delving into DeFi

- Establishment of StableCoins in the DeFi ecosystem
- Evaluation and selection of DeFi Platforms
- Advanced tools for Yield Farming
- Management and mitigation of Impermanent Loss
- Concept of DeFi Money Lego and its importance
- 5. Scalability and Interoperability in DeFi
 - Layer 2 implementations: Zk-rollups, Optimism-rollups, and Arbitrum
 - Promoting interoperability with cross-chain bridges
 - The essential role of oracles in DeFi
- 6. Analysis of Leading DeFi Protocols
 - Critical evaluation of protocols from MakerDAO to Synthetix
 - Strategic decisions and operations in leading protocols
- 7. Analytical and Operational Tools in DeFi
 - Practical application of tools such as Zapper and Zerion
 - Data and trend analysis with Messari and Glassnode
- 8. Origins and Principles of Regenerative Finance (ReFi)
 - History and fundamentals of ReFi
 - Integration of ReFi into the Blockchain ecosystem
- 9. Impact and Applications of ReFi
 - Evaluation of the social and environmental impact of ReFi
 - Case studies: Celo, KlimaDAO, and Toucan Protocol
- 10. ESG and ReFi: Creating Sustainable Value
 - ESG financial criteria and their alignment with Regenerative Finance
 - Strategies to implement ReFi practices in businesses and projects

Module/Course 7. SMART CONTRACTS FOR NON-PROGRAMMERS AND CYBERSECURITY

Number of Credits: 1.00 ECTS Delivery Mode: Distance Learning Start-End Dates: March 11 - March 17 Schedule: Distance learning, unscheduled module/course

- 1. Introduction to Cryptography in Blockchain
 - Understanding the cryptography behind blockchain: key terms and concepts
 - The importance of hashing and encryption for blockchain security
- 2. Solidity and Smart Contracts: An Overview
 - What is Solidity and how do Smart Contracts work
 - Examples and use cases of Smart Contracts in real life
- 3. Principles of Smart Contract Programming
 - Basic concepts of no-code Smart Contract programming
 - How Smart Contracts interact with the blockchain
- 4. Security for Blockchain Users
 - Best security practices for cryptocurrency users and DeFi participants
 - Recognizing and avoiding common threats
- 5. Protecting the Blockchain
 - Overview of cybersecurity in blockchain
 - How blockchain networks maintain security at scale
- 6. Security of Smart Contracts without Code
 - Understanding vulnerabilities without needing to know programming
 - Strategies for evaluating the security of a Smart Contract
- 7. Threats and Attacks on Smart Contracts
 - Common types of threats and attacks targeted at Smart Contracts
 - How projects defend themselves and how users can protect themselves
- 8. Risk Management Strategies in Smart Contracts
 - Risk management concepts for non-programmers
 - Tools and services that can help mitigate risks

Module/Course 8. ON-CHAIN ANALYSIS AND FUNDAMENTAL VALUATION IN CRYPTO ASSETS

Number of Credits: 1.00 ECTS Delivery Mode: Distance Learning Start-End Dates: March 18 - March 24 Schedule: Distance learning, unscheduled module/course

- 1. Fundamentals of On-Chain Analysis
 - Introduction to the Exchange Equation and its application to crypto assets
 - The Stock to Flow principle in the valuation of crypto assets
- 2. Networks and Value: Metcalfe's Law
 - Understanding and applying Metcalfe's Law to value crypto asset networks
- 3. Costs and Valuation: Cost of Production Model
 - Analysis of the cost of production model and its relevance in cryptocurrencies
- 4. Market Metrics: NVT and MVRV
 - Use of the Network Value to Transaction (NVT) ratio for market analysis
 - Market Value to Realized Value (MVRV) ratio as a cycle indicator
- 5. Advanced Analysis: Z-Score and MPI
 - Implementation of Z-Score to identify market extremes
 - Miner's Position Index (MPI) and its impact on price
- 6. Puell Multiple: Understanding and Utility
 - Interpretation of the Puell Multiple and its application in crypto market analysis
- 7. Valuation in the DeFi Space
 - Specific valuation models for DeFi projects and assets
- 8. Strategies for Managing Crypto Portfolios
 - Principles for creating and managing a crypto asset portfolio
 - Tools and tactics for diversification and risk management

Module/Course 9. TECHNICAL AND FUNDAMENTAL ANALYSIS OF CRYPTO ASSETS

Number of Credits: 1.00 ECTS Delivery Mode: Distance Learning Start-End Dates: March 25 - March 31 Schedule: Distance learning, unscheduled module/course

- 1. Introduction to Technical Analysis in Crypto Assets
 - Basic concepts and tools of technical analysis
 - Differences between technical analysis in cryptocurrencies and traditional markets
- 2. Candlestick and Chart Patterns in Cryptocurrencies
 - Interpretation of Japanese candlesticks in the context of crypto assets
 - Recognition of chart patterns and their meaning
- 3. Technical Indicators and Oscillators for Cryptocurrencies
 - Use of Exponential Moving Average (EMA), Relative Strength Index (RSI), MACD
 - Application and limitations of other oscillators in cryptocurrencies
- 4. Analysis of Volume and Liquidity in the Crypto Asset Market
 - Relationship between volume and price movements
 - Trading strategies based on liquidity analysis
- 5. Trading Strategies and Risk Management
 - Techniques of scalping, day trading, and swing trading
 - Implementation of stop loss and take profit in cryptocurrencies
- 6. Advanced Technical Analysis for Altcoins
 - Specific methodologies for altcoin analysis
 - Practical cases of analysis and trend prediction
- 7. Automated Trading and Bots in Crypto Assets
 - $\circ~$ Introduction to the use of trading algorithms and bots
 - Risk assessment and ethical considerations in automated trading

Module/Course 10. TOKEN ENGINEERING: CREATING THE ARCHITECTURE OF THE TOKEN ECONOMY

Number of Credits: 1.00 ECTS

Delivery Mode: Distance Learning

Start-End Dates: April 1 - April 7

Schedule: Distance learning, unscheduled module/course

Content:

1. Financial Innovation and the Token Revolution

- Concepts of financial innovation through tokens
- Comprehensive view of the token economy and its differentiation from conventional finance
- 2. Designing Tokenized Financial Systems
 - Strategies and methods for developing financial systems based on tokens
 - Key aspects of creating and operating the token economy
- 3. Dynamics of Liquidity Pools and Their Importance in DeFi
 - Structures and mechanisms of liquidity pools
 - Challenges and opportunities in liquidity management
- 4. Decentralized Exchanges (DEX): A Pillar of the Token Economy
 - Operating principles of DEXs
 - Impact of DEXs on the availability and valuation of tokens
- 5. Market Control Mechanisms in Tokenized Ecosystems
 - Strategies for regulation and stability of token markets
- 6. Principles of Token Engineering
 - Components and phases in the design and development of a token
 - Lifecycle and evolution of a tokenized project
- 7. Exploration Phase: Defining the Value Proposition
 - Market research and definition of the value proposition for the token
 - Identification of stakeholders and mapping of the value chain
- 8. Mathematical Formulation for Token Design
 - Application of mathematical models for valuation and structuring of tokens
 - Testing and validation of models through quantitative analysis
- 9. Technical Implementation: From Theory to Blockchain
 - Practical steps for programming and deployment of token smart contracts
 - Tools and programming languages specific for token creation
- 10. Governance in Tokenized Systems
 - Strategies for effective governance for the long-term sustainability of the token ecosystem
 - Voting mechanisms, incentives, and collective decision-making in the token economy

Module/Course 11. TAXATION OF CRYPTO ASSETS

Number of Credits: 1.00 ECTS Delivery Mode: Distance Learning Start-End Dates: April 15 - April 21 Schedule: Distance learning, unscheduled module/course

Content:

1. Introduction to the Taxation of Cryptocurrencies

- Basic principles of the tax treatment of cryptocurrencies
- Tax considerations for individual investors and businesses
- 2. Tax Treatment of Cryptocurrencies in Personal Income Tax
 - Capital gains and losses derived from crypto assets
 - Methods for calculation and declaration in the income tax of individuals
- 3. Corporate Tax and Crypto Assets
 - Tax obligations of companies regarding crypto assets
 - Valuation and accounting record of cryptocurrencies in the business balance sheet
- 4. VAT and Cryptocurrencies
 - Application of VAT to cryptocurrency transactions
 - Recent criteria from the EU and the Tax Agency on VAT
- 5. Declaration and Obligations: Model 720
 - Requirements and procedure for declaration of Model 720
 - Consequences of non-presentation or incorrect declaration
- 6. Practical Cases and Common Issues
 - Analysis of real situations and resolution of common questions
 - Strategies for efficient management of taxation on crypto assets
- 7. Taxation in Mining and Staking
 - Tax implications of mining and staking cryptocurrencies
 - Differences in taxation between mining activities and staking rewards
- 8. Exchange between Cryptocurrencies and Tax Events
 - Tax treatment of crypto-to-crypto exchanges
 - Recognition of taxable operations and calculation of gains
- 9. Airdrops, Forks, and Other Income in Cryptocurrencies
 - Tax implications of airdrops and hard forks
 - How to declare these events and what practices to follow to comply with regulations

Module/Course 12. REGULATION OF CRYPTO ASSETS: GENERAL ASPECTS

Number of Credits: 1.00 ECTS

Delivery Mode: Distance Learning Start-End Dates: April 22 - April 30 Schedule: Distance learning, unscheduled module/course

- 1. Regulation and Compliance in Blockchain and Crypto Assets
 - Exploration of current laws on blockchain and crypto assets
 - Considerations on digital identity and its legal requirements
- 2. Smart Contracts: Legal Framework and Application
 - Legal nature and the regulatory environment of Smart Contracts
- 3. Oracles in Blockchain: Legal Perspective
 - Understanding the legal implications of using oracles in blockchain
- 4. Legality in Asset Tokenization
 - Details of the legal aspects in asset tokenization
- 5.KYC and AML: Implementation in the Crypto Space
 - Customer due diligence (KYC) policies and anti-money laundering (AML) prevention
- 6. MiCA Regulation: Analysis and Adaptation
- Evaluation of MiCA regulation and strategies for compliance
- 7. Regulations of the Testing Regime (Pilot Regime)
- Implications of the Pilot Regime for crypto asset markets and services
- 8. Guidelines on Advertising of Crypto Assets
 - Requirements of the CNMV and best practices in advertising of crypto assets

Module/Course 13. MARKET STRATEGY AND TOKEN LAUNCH

Number of Credits: 1.00 ECTS Delivery Mode: Distance Learning

Start-End Dates: May 6- May 12

Schedule: Distance learning, unscheduled module/course

Content:

1. Fundamentals of Marketing for Crypto Assets

- Marketing principles applied to token launches
- Building a strong brand in the crypto space
- 2. Preparation for Token Launch
 - Launch planning: phases and key timeline
 - Developing a clear and compelling brand message
- 3. Communication and Promotion Strategies
 - Content marketing and storytelling for crypto assets
 - Use of social media and specialized cryptocurrency platforms
- 4. Community Management and Engagement
 - Creation and maintenance of online communities
 - User engagement and loyalty strategies
- 5. Influencer Marketing in the Token Space
 - Collaboration with crypto and blockchain influencers
 - Measuring the impact and ROI of influencer campaigns
- 6. Pricing Strategies and Token Valuation
 - Methods for setting the initial token price
 - Presenting the value proposition to investors
- 7. Planning Airdrops and Reward Programs
 - Using airdrops and rewards as a marketing tool
- 8. Regulation and Compliance in Crypto Asset Marketing
 - Navigating the regulatory landscape in marketing campaigns
 - Adapting to crypto asset advertising guidelines
- 9. Launch and Post-Launch: Measurement and Analysis
 - Launch strategies and tracking token performance
 - Post-launch analysis and strategic adjustments
- 10. Case Studies: Successful Token Launches
 - Analysis of case studies of successful token launches
 - Lessons learned and best practices