Syllabus

The aim of this syllabus is to outline the essential information about this course. It lists the to pics that will be addressed; it gives you information on what didactic material is going to be needed and which activities can be performed in order to make teaching and learning more attractive. Furthermore, it gives you information about the workload.

Target Groups

a) Financial operators and their decision-makers from different sectors such as:
   - Banks
   - Asset Management
   - Insurance companies
   - Incubators
   - Private equity
   - Venture capital
   - Consulting companies (including freelancers)

b) VET centres and their trainers/coaches

c) Financial services customers

d) Recent graduates from financial studies

Prerequisites

You should bring the following prerequisites with you before attending this course:

- Curiosity
- Motivation
- Time to refresh and deepen your knowledge about different topics related to Blockchain.

You should also be ready to apply yourself because there are various tasks waiting for you!

Duration of the Course

The course consists of three main modules. Each module consists of 5 Learning Units: one Reading task, two slide decks, one self-assignment/task, and one self-assessment questionnaire. Each learning unit takes circa 30/40 minutes to complete.

Module	Learning Units	Type	Content	Learning Outcomes
1. Financial Module	1.1 Cryptocurrencies and the Blockchain	Reading: Introduction to the topic	1. Scarcity & The Double Spend Problem 2. Cryptocurrencies 3. Smart Contracts, Tokens, and Decentralised Computation	After having completed this Learning Unit, you will have a basic understanding of what gives cryptocurrencies value, token economics, and foundational use cases.
	1.2 Use-Cases (Pros/Cons)	Slides	4. Introduction: Blockchains & DLT 5. Why Implement a Blockchain 6. Practical Implications 7. Public vs Private Blockchains	After having read these slides, you will understand when it could be useful to apply Blockchain Technology or when it would be better to use a different technology. Furthermore, you will know the differences between DLT and other Databases and the Pros and Cons of DLT. In addition to this, you will understand the differences between private and public Blockchain.
	1.3 Use-case development	Assignment/ Task	This self-assignment can be conducted after having completed Learning Unit 1.1 and Learning 1.2. It will take 30/40 minutes to develop a hypothetical use case for blockchain technology in your industry.	With this assignment, you will be able to demonstrate your understanding of various real-world use cases of blockchain technology and evaluate your ability to critically analyse their benefits and challenges

	1.4 Portfolio Management	Slides	1. Introduction: Crypto Assets & Portfolio Management 2. Vetting Digital Assets & Strategies 3. Trading Tools & Platform	After having completed this Learning Unit you will understand the most important terms connected to digital assets and you will know which considerations to take when adding exposure to crypto assets to your portfolio. Furthermore, you will have learned about different strategies useful when adding digital assets to your portfolio and about trading venues and trading tools.
	1.5 Self-Assessment Module 1	Quiz	Quiz consisting of 10 multiple choice questions. Each question will touch on key concepts and topics discussed, allowing you to reflect on your learning journey so far.	This quiz will help you measure your understanding of the material covered in Module 1
2. Digital Module	2.1 Tokenization & Regulation	Reading: Introduction to the topic	1. Tokenization and Security Tokens: A Primer 2. Security Tokens 3. The need for regulation 4. MICA	After having read this Learning Unit, you will have obtained a basic knowledge of the concept of tokenization, you will also have received a legal overview and have gained knowledge about the importance of Regulation and about the MICA regulation
	2.2 Blockchain Payments	Slides	1. Digital Payments 2. Scalability & Second Layers 3. Payment Tools	After having completed this Learning Unit you will have gained basic knowledge about stablecoins, payment tokens/e-

				money, the Lightning Network, and Central Bank Digital Currencies (CBDCs).
	2.3 Carbon Offset Tokenization	Assignment/Task	In this task, you will have to begin researching an example of tokenization that has already begun to gain some traction: tokenized carbon credits. You will need to conduct research and create a concise report of your findings. This report may be in text format or presented as PowerPoint slides. It will take you 30/40 minutes to complete this task.	After having completed this task, you will have gained an understanding of tokenized carbon credits, their advantages, challenges, real-world applications, and potential future implications. You will also have gained insight into how technological advancements can be leveraged in environmental sustainability efforts and how the digital and ecological realms can intersect.
	2.4 Data storage, GDPR, Oracles	Slides	4. Personal Data 5. GDPR 6. GDPR Issues in Blockchains 7. Data Connectivity & Oracles	After having studied these slides, you will know what personal data are, what your rights are with regard to the protection of your personal data, and what GDPR is about. Furthermore, you will have gained knowledge about the issues of blockchain connected to GDPR and about Oracles which aim at bringing data on-chain while aiming to minimize the need for trust in a single party.

	2.5 Self-Assessment Module 2	Quiz	Quiz consisting of 10 multiple choice questions. Each question will touch on key concepts and topics discussed, giving you an opportunity to reflect on your learning journey so far.	This quiz will help you measure your understanding of the material covered in Module 2
3. Technical Module	3.1 Wallets, Security, Interacting with Web3	Reading	1. Wallets & Security (Software wallets, Hardware wallets, Paper wallets, MultiSig Wallets, Custodial Wallets, Seed Phrase Back, Phishing attacks) 2. Interacting with Web3 (What is Web 3? Decentralized finance, Interacting with Web	After having completed this Learning Unit, you will have deepened your understanding of the security principles surrounding Blockchain technology. You will know the differences and similarities between software and hardware wallets, you will have learned about the master key/private key hierarchy, and you will gain knowledge about how you can use a wallet to interact with Web3 applications and platforms.
	3.2 Ethereum and Smart Contracts	Slides	1. Recap: Blockchains & Ethereum 2. Smart Contracts 3. Tokens 4. Decentralised Applications	After having completed this Learning Unit, you will have refreshed your knowledge about Blockchains and Ethereum. You will understand how smart contracts work and how they can be created and gain knowledge about their features. In addition to this, you will have learned about tokens, their creation, and the different Token types.

				Furthermore, you will know what decentralized applications are and understand their pros and cons.
	3.3 Token Creation	Assignment/Task	In this assignment, you will dive deep into one of the foundational aspects of the Ethereum ecosystem: ERC-20 tokens. This assignment will guide you through the process of deploying your very own ERC-20 token on the Ethereum network.	After having completed this task you will have familiarized yourself with the technical nuances, the functionalities an ERC-20 token provides, and the potential use cases it enables. By the end of this task, you will have a comprehensive understanding of token standards on Ethereum, the significance of ERC-20, and the practical knowledge of token deployment.
	3.4 Consensus Protocols	Slides	1. Introduction: Consensus 2. Proof of Work (PoW) 3. Alternative Consensus Protocols 4. Proof of Stake (PoS) 5. Permissioned Consensus Protocols	After having gone through this Learning Unit, you will understand why consensus protocols are important. Furthermore, you will have learned about different protocols used by different Blockchains in order to achieve consensus. You will have gained knowledge about Proof of Work used by Bitcoin and about Proof of Stake used by Ethereum. In addition to this you will understand what permissioned consensus protocols are and gain specific knowledge about the Byzantine Fault Tolerance (BFT) and Federated BFT which are prominent consensus mechanisms within permissioned systems.

	3.5 Self-assessment Module 3	Quiz	Quiz consisting of 10 multiple-choice questions. Each question will touch on key concepts and topics discussed, allowing you to reflect on your learning journey so far.	This quiz will help you measure your understanding of the material covered in Module 3