

Certification Programme

Certified Blockchain Professional

Overview

The course is designed for all those who wish to acquire IT and business skills in the blockchain technology and will particularly appeal to both IT experts and business developers, including Information, Digital, Management and Business Administration professionals who seek an in-depth understanding of the blockchain technology and crypto currencies. It will provide an understanding of the full range of potential blockchain use cases and business models. As more and more blockchain-based applications evolve, an in-depth knowledge of the underlying technologies (such as Ethereum or Hyperledger) is becoming indispensable. Equipped with this knowledge, one can leverage blockchain opportunities to build their company's digital future.

Target Group

Innovation Managers, Chief Information/Digital Officers, Management/Business Administration Experts and individuals who like to learn more about the blockchain technology.

Programme Structure

The programme is structured in eight modules, followed by a final term paper

Learning Methodology

Interactive lecture, group work, practical practice activities, reflection

Degree

Certified Blockchain Professional (Frankfurt School of Finance & Management)

Duration

6 months

The programme consists of two 4-day weeks. It starts with the first 4-day course covering the blockchain basics.

Examination

The examination consists of one individual paper where every participant submits their own paper. Multiple topics for a paper will be provided and participants will be able to choose one topic. Partly these topics cover more business-oriented questions or, alternatively, more IT-related questions. Time to write the paper: 8 weeks (after having finished the 2nd week of the course).

Price

Certification programme course, including the exam and the certification: 4,950 Euro (8 days)

Programme Structure

Module 1: Blockchain fundamentals and ecosystem

Learning Target

The participants will learn about blockchain fundamentals and the breadth of use cases that allow for potential application of the blockchain technology. Further, ecosystems and consortiums will be presented. Basic technological building blocks will be presented in an overview over the technology. Here, further modules will provide more depth.

Content

- Potential impact on companies, organizations and industries
- Existing use cases
- Identification of new use cases
- Planning and budgeting prototypes
- Double-spend problem, transactions and blocks
- Private, consortium, and public networks
- Smart contracts
- Basics in consensus mechanisms
- Hash, public/private keys

Module 2: Public blockchains and enterprise blockchains

Learning Target

In this module, the participants will learn the key frameworks in both the do-main of enterprise blockchains and public blockchain. The former concerns the enterprise context, and the latter the environment of crypto currencies. Specific features such as consortiums and Initial Coin Offerings are also explained.

Content

- Enterprise blockchains: Ethereum, Hyperledger, Corda
- Public blockchains: Bitcoin, Ethereum
- The importance of consortiums to apply blockchain technology
- Crypto currency frameworks and Initial coin offerings (ICOs)

Module 3: Data protection, system security and integrity & Cryptography, mining, consensus and crypto economics

Learning Target

The goal is to discuss security and integrity issues with the participants. Data protection is currently a key facet of IT systems, and therefore, it needs to be reconciled with blockchain technology. Participants will learn about pseudonymity in public blockchain systems.

Furthermore, this module will provide deeper knowledge in cryptography, mining and consensus algorithms. These topics are primarily relevant in public blockchain architectures; however, cryptography is also a key element in the enterprise context. Additionally, students will learn about the scalability of blockchain solutions and game theoretical approaches.

Content

- Data protection
- Issues in security design
- Integrity of blockchain transactions
- Integrity of blockchain systems
- Basics in cryptography
- Mining and consensus algorithms
- Proof-of-work, proof-of-stake, proof-of-authority
- Scalability and side chains
- Crypto economics, game theory and market modelling

Module 4: ICOs and token economy

Learning Target

Through this module, participants will learn about the “tokenization of everything”. Blockchain technology allows the taking of assets and distributing them efficiently across a large number of owners. This process is being done for start-ups through Initial Coin Offerings (ICOs). Albeit limited, tokenization will be applicable to a large breadth of assets in the future (e.g. real estate, machinery). Therefore, it is important for the participants to understand this upcoming trend.

Content

- The token economy and securitization of everything
- Writing of ICO smart contracts
- ICO planning and best practices
- Legal aspects of an ICO

Module 5: Legal issues of regulation, tokens and smart contracts

Learning Target

This module covers how blockchain applications can be qualified from a legal perspective. Participants will learn how blockchain technology fits in the current scope of the German and European legal framework and what approaches for new legislation are currently discussed. The fields of law discussed during the module will have a focus on financial regulatory law, such as banking regulation, anti-money laundering law as well as capital markets law. In addition to that, the participants will also discuss how blockchain-tokens can be qualified under German private law.

Content

- Applicability of law for blockchain solutions
- Banking regulatory law
- Legal aspects concerning capital markets and anti-money laundering law
- Current limitations concerning legal issues and upcoming legislation

Module 6: Use cases and projects in finance, banking and insurance

Learning Target

Participants learn about the application of blockchain technology in business. To this end, use cases from finance, banking and insurance will be presented and explained. The technology stack used for these examples will be explained in detail.

Content

- Technology fit of blockchain
- Industry relevant use cases, evaluation and technology stack
- Detailed industry cases
- Field cases
- Case study: disrupting finance with blockchain

Module 7: Use cases and applications in logistics, IoT & Industry 4.0

Learning Target

Participants learn about the application of technology in non-financial fields such as logistics, the Internet of Things (IoT), or Industry 4.0. Of course, these use cases also involve financial transactions and smart contracts. However, in ecosystems related to logistics, IoT and manufacturing, finance will only be one aspect to consider. The participants will also learn to the technology stack and learn how to evaluate use cases.

Content

- Technology fit of blockchain
- Industry relevant use cases, evaluation and technology stack
- Detailed industry cases
- Field cases
- Case study: disrupting business with blockchain

Module 8: Public Ledger & Ethereum

Learning Target

The goal of the first part of the day is to explain Ethereum, one of the largest development frameworks. Ethereum works in the public domain and can also be utilized in private settings. The participants will learn how to interact with the Ethereum Virtual Machine through many practical hands-on examples. In the second part of the day the Hyperledger framework will be presented. Hyperledger is one of the largest blockchain development frameworks used both with companies and in a B2B context. It is mostly applied in consortia with broad ranging use cases. With the help of many practical hands-on examples, the participants will learn how to interact with Hyperledger

Content

- Ethereum technology
- Tooling and the Ethereum Virtual Machine
- Hands-on interaction with transactions, smart contracts and tokens
- Coding smart contracts with Solidity basics
- Future of Web 3.0
- Introduction to Fabric 1.0 framework
- Application in consortia, use cases and limitations
- Tooling for Hyperledger
- Modelling business logics