Solidity and smart contract development

ECTS : 3

Description du contenu de l'enseignement :

This course introduces all major uses cases of the blockchain industry from a technical perspective. The course begins with an introduction of Github and Solidity coding fundamentals before diving into smart contract development. Participants will learn the most common ERC standards for tokens and NFTs before building more complex contracts for DAOs. Finally, a deep dive into the EVM and an outlook into the future of Blockchain - L2s.

The course schedule is as follows:

Lecture 1 - Blockchain Basics and Development

Lecture 2 - Solidity Fundamentals

Lecture 3 - Contracts and Complex Data Structures

Lecture 4 - ERC20 Tokens and Tokenomics

Lecture 5 - Intro to DeFi

Lecture 6 - Further DeFi Applications

Lecture 7 - NFTs

Lecture 8 - ReFi and NFT applications (Guest Lecture)

Lecture 9 - SDLC, Security and Testing

Lecture 10 - DAOs and Governance

Lecture 11 - Assembly and Gas Optimization

Lecture 12 - Scaling the future of Ethereum: L2s

Compétence à acquérir :

At the conclusion of this course, participants will gain a solid foundation of Solidity programming and smart contract development, enough to be considered a junior blockchain developer. Participants will also gain an understanding of the open source philosophy and collaboration style.

Mode de contrôle des connaissances :

The level of mastery will be continuously assessed throughout the course by:

1. A weekly presentation on a topic more in depth than what is presented in the lecture material
2. Weekly homeworks
3. Final smart contract project with oral presentation

Bibliographie, lectures recommandées :

Mastering Ethereum by Andreas Antonopoulos - https://github.com/ethereumbook/ethereumbook