



Enterprise Computing Solutions - Education Services

## TRAINING OFFERING

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**CODE:**      **LENGTH:**      **PRICE:**

AIC\_BL-200      30 Hours      £370.00

## Description

### Build the Foundations of Tomorrow with Blockchain Developer

- **Career-Focused:** Build expertise in blockchain and Bitcoin development
- **Hands-On Skills:** Tackle practical development work with future-oriented learning
- **Innovation-Driven:** Learn strategies for digital transformation and decentralized innovation

### At a Glance: Course + Exam Overview

- Included: Self-paced course + Official exam + Digital badge
- Delivery: Projects & case studies
- Outcome: Industry-recognized credential + hands-on experience

### The following tools will be explored in this course:

- Etherscan
- Remix IDE
- Hyperledger Fabric
- Hardhat

### What's Included (One-Year Subscription + All Updates):

- High-Quality Videos, E-book (PDF & Audio), and Podcasts
- AI Mentor for Personalized Guidance
- Quizzes, Assessments, and Course Resources
- Online Proctored Exam with One Free Retake
- Comprehensive Exam Study Guide
- Access for Tablet & Phone

## Objectives

- Tokenization and ICO Management
- Blockchain Analytics and Visualization Tools
- Blockchain Interoperability and Cross-Chain Solutions
- Distributed Ledger Technology (DLT)
- Blockchain Performance Optimization

## Audience

- Blockchain Developers: Gain the technical expertise needed to build and implement blockchain-based applications and solutions for diverse industries.

- Software Engineers: Learn how to integrate blockchain technology into software development to enhance security, scalability, and efficiency.
- Tech Innovators: Dive deep into blockchain development to stay at the forefront of technological advancements.
- Fintech Developers: Explore blockchain's role in transforming financial services, from digital wallets to decentralized finance (DeFi) applications.
- Enterprise IT Professionals: Understand how to leverage blockchain to improve operational efficiencies, data integrity, and transparency within large organizations.

## Prerequisites

- Familiarity with general programming concepts like data structures, algorithms and networks.
- Understanding of at least one legacy programming stack (e.g. Python, JavaScript, Java or similar).
- Fundamental knowledge to use command line consoles on any operating system.
- Ability to understand developer concepts like SDKs, APIs, application development tools etc.
- Experience with building end to end tiered applications.

## Programme

### Course Introduction

#### Module 1: Introduction to Blockchain and Smart Contracts

- 1.1 Origin of Blockchain
- 1.2 What is Blockchain?
- 1.3 Consensus Mechanisms
- 1.4 What are Smart Contracts?
- 1.5 Bitcoin Blockchains

#### Module 2: Ethereum Virtual (EVM) and Solidity Basics

- 2.1 What is an EVM and Ethereum?
- 2.2 Wallets Introduction and Creation
- 2.3 Introduction to Remix Editor with Metamask
- 2.4 Smart Contract Basic Structure
- 2.5 Variables, If/Else, Strings, Loops, Arrays, Test Tokens

#### Module 3: Advanced Solidity and Structures

- 3.1 Libraries, Interfaces, Modifiers
- 3.2 Structures, Enums, ABI, Calldata, Events, and Transfers
- 3.3 Contract-to-Contract Calls
- 3.4 Address and Address Payable
- 3.5 Receive and Fallback Functions
- 3.6 Upgradeable Contracts
- 3.7 Openzeppelin Libraries

#### Module 4: Tokenization and NFTs

- 4.1 ERC20 Token Creation
- 4.2 NFT, NFT Minting, IPFS, Security, and Pinata Cloud

#### Module 5: Development Tools and Techniques

- 5.1 Truffle, Ganache, and Hardhat
- 5.2 Metamask Wallet
- 5.3 Remix Development Environment
- 5.4 Localnet and Testnet Deployment

#### Module 6: DApp Integration and Testing

- 6.1 Web3.0 Integration with JS
- 6.2 Wallet Creation and Sending Transactions

#### Module 7: Introduction to Private Blockchains - Hyperledger Fabric

7.1 Public Vs Private vs. Consortium Blockchain Frameworks

7.2 Introduction to the Hyperledger Fabric

7.3 Hyperledger Projects

## **Module 8: Deep Dive into Hyperledger Fabric**

8.1 Basic Concepts of HLF

8.2 Docker Introduction

8.3 Commands and Setup

## **Module 9: Golang Programming for Hyperledger Fabric**

9.1 Installation and Path Setup

9.2 VS Code Plugin Setup, Variables, Strings, Conditional Statements, and Loops

9.3 Basics of the Language

## **Module 10: Chaincode Structure and Error Handling**

10.1 Chain code Explanation using Fabric Samples and Test-network Explanation using Linux Scripting

10.2 Error Handling

10.3 Error Codes and Messages

10.4 Logging Errors

10.5 Handling Panics

## **Module 11: Custom Chaincode**

11.1 Extending the Default Chaincode

11.2 Chaincode Deployment

11.3 REST API Integration with Front End

## **Module 12: Smart Contract Auditing and Tools, Hyperledger Fabconnect, and Firefly**

12.1 Why Smart Contract Audits are Necessary

12.2 Introduction to Firefly, Fabconnect, and Blockchain Explorer

## **Follow on courses**

### **Recommended Certifications:**

- Bitcoin+ Everyone™ (BC-900) - Demystify Bitcoin: Simple, Accessible, Essential for All
- Bitcoin+ Executive™ (BC-100) - Empowering Executives with Bitcoin Innovation
- Blockchain+ Executive™ (BL-100) - Lead confidently in the Blockchain executive sphere
- Bitcoin+ Developer™ (BC-200) - Navigate the depth of development with Bitcoin
- Bitcoin+ Security™ (BC-300) - Defend Your Digital Wealth: Master Security Strategies

## **Test and Certification**

### **Exam Details**

- Duration: 90 minutes
- Passing Score: 70%
- Format: 50 multiple-choice/multiple-response questions
- Delivery Method: Online via proctored exam platform (flexible scheduling)

### **Exam Blueprint:**

- Introduction to Blockchain and Smart Contracts - 5%
- Ethereum Virtual (EVM) and Solidity Basics - 5%
- Advanced Solidity and Structures - 10%
- Tokenization and NFTs - 10%

- Development Tools and Techniques - 5%
- DApp Integration and Testing - 5%
- Introduction to Private Blockchains -Hyperledger Fabric - 10%
- Deep Dive into Hyperledger Fabric - 10%
- Golang Programming for Hyperledger Fabric - 10%
- Chaincode Structure and Error Handling - 5%
- Custom Chaincode - 10%
- Smart Contract Auditing and Tools Hyperledger Fabconnect, and Firefly - 5%

## Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
01 Jan 0001			English	Self Paced Training		£370.00

## Additional Information

This training is also available as onsite training. Please contact us to find out more.