AI CERTs™

Blockchain Certification Program

Blockchain+ Developer™

Executive Summary

The Blockchain+ Developer certification offers a comprehensive journey into blockchain technology and smart contracts. Beginning with the origin and structure of blockchain, participants explore consensus mechanisms and the concept of smart contracts, delving into Ethereum Virtual Machine (EVM) and Solidity basics. Advanced topics cover Solidity structures, tokenization, and non-fungible tokens (NFTs). Development tools like Truffle and Ganache are introduced, along with testing techniques and DApp integration. Participants then explore private blockchain with Hyperledger Fabric, learning its architecture, Docker setup, and Golang programming. The course culminates in chaincode development, REST API integration, and chain code auditing.

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Blockchain+ Developer Exam Blueprint

Date Issued: 1/5/2024
Version: 1.1

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

Exam Blueprint

Number of Questions

50

Passing Score

35/50 or 70%

Duration

90 Minutes

Format

Online via AI Proctoring platform

Question Type

Multiple Choice/Multiple Response

Exam Overview

Module	Weight
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%
	100%

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Certification Modules

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 Openzepplin 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

Certification Outcome

Upon completion of this course, participants will gain a comprehensive understanding of blockchain and smart contracts. They'll delve into the origin and mechanics of blockchain, explore consensus mechanisms, and grasp the concept of smart contracts. Additionally, they'll master Ethereum Virtual Machine (EVM) and Solidity basics, learning to create wallets, deploy smart contracts, and work with advanced Solidity features. The curriculum covers tokenization, NFTs, development tools like Truffle and Docker, DApp integration, and a deep dive into Hyperledger Fabric, including Golang programming for Chaincode development. Participants will also learn chaincode development, error handling, and chaincode auditing, ensuring a robust understanding of blockchain technology.

Market Insight

As demand surges for blockchain expertise, markets witness a proliferation of courses catering to this need. Institutions offer diverse programs, from introductory to advanced levels, capitalizing on the growing interest in blockchain technology. This trend reflects a concerted effort to meet the evolving demands of the job market.

Value Proposition

Professionals benefit from blockchain courses, gaining expertise in decentralized systems, smart contracts, and cryptography. These courses offer hands-on experience in blockchain development, fostering skills highly sought after in industries like finance, healthcare, and supply chain management. Enhance your career prospects by acquiring comprehensive blockchain education.

Additional Features

Interactive Sessions: Engage in discussions with industry experts and peers. Hands-on Exercises: Practical tasks to apply learned concepts in real-world scenarios. Case Studies: Dive deep into real business challenges and AI-driven solutions. Post-Certification Support: Access to a community of Blockchain experts and enthusiasts for continuous learning and networking.

BLOCKCHAIN Experts

Mohammad Shankayi

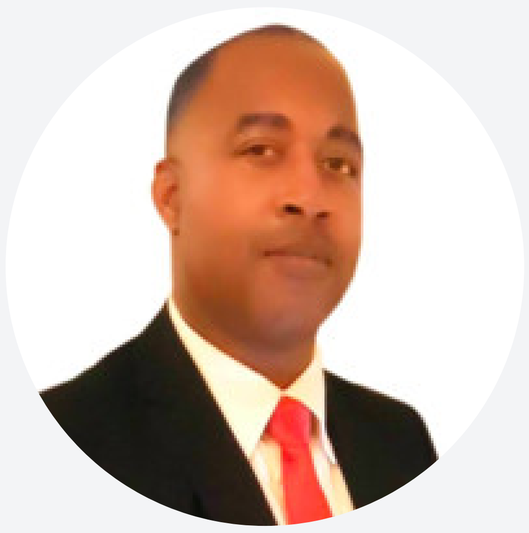
Blockchain Expert

With over 12 years as a versatile CTO/Lead Developer, I excel in managing teams, crafting roadmaps, and implementing optimized solutions across various tech domains. Proficient in numerous languages and adept at navigating new technologies.

Amit Chandra

Blockchain Expert

As Manager of Technology Consulting, I lead the Blockchain Center of Excellence for the State Government of India. Spearheading end-to-end delivery of innovative blockchain solutions, I ensure successful, on-time, and within-budget implementations.



Henry Jenkins

Blockchain Expert

With over 25 years of diverse expertise, I am a seasoned Project Manager, Blockchain Developer, IT Engineer, US Army Veteran, and Cybersecurity Specialist adept at delivering 54+ customer-centric solutions.

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AI & BITCOIN CERTIFICATIONS!

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