

Certificate in Ethereum Blockchain Development



Certificate in Ethereum Blockchain Development

Ethereum Blockchain Development refers to the process of creating decentralized applications (dApps), smart contracts, and protocols on the Ethereum blockchain network. Ethereum is a decentralized platform that enables developers to build and deploy blockchain-based applications using Solidity (a programming language specific to Ethereum) and its underlying technology.

Ethereum supports the development of decentralized applications that operate on a distributed network of computers, offering various functionalities beyond just financial transactions.

Note: Please note that only assessment is provided and no learning resources will be provided.

Why should one take Certificate in Ethereum Blockchain Development?

Ethereum is a prominent platform for DeFi applications, enabling various financial services such as lending, borrowing, decentralized exchanges, and more without intermediaries.

Ethereum's open-source nature and developer-friendly environment foster innovation and the creation of new blockchain-based solutions and protocols.

The Vskills Ethereum Blockchain Development certification attests to your understanding and applying skills and knowledge in Ethereum Blockchain Development.

Who will benefit from taking Certificate in Ethereum Blockchain Development?

Blockchain developers, entrepreneurs, software engineers and programmers benefit immensely by opting for Vskills Certificate in Ethereum Blockchain Development so as to be noticeable amongst their colleagues as well as make progress in their respective careers.

Students taking the certification also gain by showcasing their understanding of Ethereum Blockchain Development and are able to increase their job opportunities.

Test Details

- **Duration:** 60 minutes
- No. of questions: 50
- Maximum marks: 50, Passing marks: 25 (50%)

There is no negative marking in this module.

Fee Structure

Rs. 1,999/- (Excludes taxes)*

*Fees may change without prior notice, please refer <u>http://www.vskills.in</u> for updated fees

Companies that hire Vskills Certificate in Ethereum Blockchain Development Professionals

Tech companies, consulting firms, blockchain startups, financial institutions exploring blockchain, cryptocurrency exchanges and wallet providers are constantly hiring skilled Ethereum Blockchain Development Testers.

Table of Contents

1. Introduction to the Course

1.1 Who Is This Ethereum Course For?

1.2 Course Structure - So You Get the Most Out of It

2. Remix IDE

- 2.1 Set Up Remix
- 2.2 Remix File Management
- 2.3 Starting, Stopping, and Interacting with Smart Contracts
- **2.4 Blockchain Basics**
- 2.5 Read and Write to Smart Contract
- 2.6 Congratulations

3. [Project] The Blockchain Messenger

- 3.1 Overview
- 3.2 Booleans
- 3.3 (Unsigned) Integers
- 3.4 Integer Rollover SafeMath
- 3.5 Strings and Bytes
- 3.6 Address Types
- 3.7 (Behind the Scenes) The Msg Object
- 3.8 Writing and Reading Functions View Versus Pure
- 3.9 Understanding the Constructor
- 3.10 The Blockchain Messenger Implementation
- 3.11 Congratulations

4. [Project] Smart Money - Deposit and Withdrawals

- 4.1 Overview
- 4.2 Installing and Configuring Metamask
- 4.3 Get Free Ether and Send Transactions
- 4.4 (Behind the Scenes) Metamask
- 4.5 (Behind the Scenes) An Ethereum Transaction
- 4.6 (Behind the Scenes) Hashing
- 4.7 Cancel or Update Ethereum Transactions
- 4.8 Remix and the Injected Web3 Provider
- 4.9 The Payable Modifier and Msg.value
- 4.10 (The Fallback Functions) Fallback and Receive
- 4.11 The Smart Money Implementation
- 4.12 Congratulations

5. [Project] Smart Wallet

- 5.1 Overview
- 5.2 Solidity Mappings
- 5.3 Mappings: A Wallet Example
- 5.4 Structs Versus Child Contracts
- 5.5 Structs and Mappings
- 5.6 (Exceptions) Require
- 5.7 (Exceptions) Assert
- 5.8 Try/Catch in Solidity
- 5.9 Low-Level Solidity Calls In-Depth
- 5.10 The Smart Contract Wallet Implementation
- 5.11 Congratulations

6. [Project] ERC20 Token Sale

- 6.1 Overview
- 6.2 Web3.js Introduction
- 6.3 Understanding the ABI Array
- 6.4 Events as Return Variables
- 6.5 Metamask, Web3.js, and Event Listeners
- 6.6 (Behind the Scenes) Events
- 6.7 Modifiers and Inheritance
- 6.8 (Behind the Scenes) Modifiers
- 6.9 (Behind the Scenes) Reserved Keywords
- 6.10 Destroying Smart Contracts with Self-Destruct
- 6.11 Block Explorers and Source Code Verification
- 6.12 The ERC20 Token Explained
- 6.13 Implementing an ERC20 Token Sale
- 6.14 Congratulations

7. [Project] Non-Fungible Token (NFT)

7.1 Introduction to the NFT Project

7.2 Deploy ERC721 Token from OpenZeppelin as OpenSea NFT on Goerli Using Remix

- 7.3 How to Get Truffle Prerequisites on Your System for Windows, Linux, and Mac
- 7.4 Start a New Truffle Project Correctly and Understand the Folder Structure
- 7.5 Truffle Migrations and How to Run Them from the Command-Line Interface
- 7.6 Using the Truffle Console to Interact with Smart Contracts on All Networks
- 7.7 Write Your First Truffle Unit Test and Understand Advanced Event Assertions
- 7.8 Deploy a Smart Contract Using HDWallet Provider Versus Truffle Dashboard
- 7.9 Debug Smart Contracts #1: Using Console.Log Inside Solidity Using Ganache
- 7.10 Debug Smart Contracts #2: Using the Powerful Truffle Debugger and Chain Forking
- 7.11 Summary: Truffle and Smart Contract Development
- 7.12 ERC20 Versus ERC777 and ERC721 Versus ERC1155 Tokens Explained
- 7.13 Hardhat Setup and Configuration Overview

- 7.14 Deploying to Goerli with HardHat and Verifying Smart Contracts on Etherscan
- 7.15 Unit Testing with HardHat and Console.Log in Solidity
- 7.16 Installing and Configuring Foundry and Forge
- 7.17 Adding Our NFT Contract to Foundry
- 7.18 Writing Unit Tests for Foundry and Understanding VM Pranking
- 7.19 Deploy Smart Contracts Using Foundry Scripts and Seed Phrases with Verification
- 7.20 Outro and Thank You

Certifications

Accounting, Banking & Finance - Certified GST Professional

- Certified AML-KYC Compliance Officer
- Certified Business Accountant
- Certified BASEL III Professional
- Certified GAAP Accounting Standards Professional
- Certified Treasury Markets Professional

▶Big Data

- Certified Hadoop and Mapreduce Professional

➤Cloud Computing

- Certified Cloud Computing Professional

▶Design

- Certified Interior Designer

▶ Digital Media

- Certified Social Media Marketing Professional
- Certified Inbound Marketing Professional
- Certified Digital Marketing Professional

▶Foreign Trade

- Certified Export Import (Foreign Trade) Professional

▶ Health, Nutrition and Well Being

- Certified Fitness Instructor

➤Hospitality

- Certified Restaurant Team Member (Hospitality)

≻Human Resources

- Certified HR Compensation Manager
- Certified HR Staffing Manager
- Certified Human Resources Manager
- Certified Performance Appraisal Manager

Office Skills

- Certified Data Entry Operator
- Certified Office Administrator

▶ Project Management

- Certified Master in Project Management
- Certified Scrum Specialist

▶Real Estate

- Certified Real Estate Consultant

►Marketing

- Certified Marketing Manager

▶Quality

- Certified Six Sigma Green Belt Professional
- Certified Six Sigma Black Belt Professional
- Certified TQM Professional

Logistics & Supply Chain Management

- Certified International Logistics Professional
- Certified Logistics & SCM Professional
- Certified Supply Chain Management Professional

≻Legal

- Certified IPR & Legal Manager
- Certified Labour Law Analyst
- Certified Business Law Analyst
- Certified Corporate Law Analyst

➤Information Technology

- Certified Angular JS Professional
- Certified Basic Network Support Professional
- Certified Business Intelligence Professional
- Certified Core Java Developer
- Certified E-commerce Professional
- Certified IT Support Professional
- Certified PHP Professional
- Certified Selenium Professional

Mobile Application Development

- Certified Android Apps Developer
- Certified iPhone Apps Developer
- ➤Security
 - Certified Ethical Hacking and Security Professional
 - Certified Network Security Professional

▶Management

- Certified Corporate Governance Professional
- Certified Corporate Social Responsibility Professional - Certified Leadership Skills Professional

▶Life Skills

- Certified Business Communication Specialist
- Certified Public Relations Officer

≻Media

- Certified Advertising Manager
- Certified Advertising Sales Professional

➤Sales, BPO

- Certified Sales Manager
- Certified Telesales Executive

& many more job related certifications

Contact us at: V-Skills 011-473 44 723 or info@vskills.in www.vskills.in