uCertify

Course Outline

Blockchain For Business with Hyperledger Fabric

30 Oct 2025

1. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
2. Expert Instructor-Led Training
3. ADA Compliant & JAWS Compatible Platform
4. State of the Art Educator Tools
5. Award Winning Learning Platform (LMS)
6. Chapter & Lessons

   Syllabus

   Chapter 1: Preface

   Chapter 2: Blockchain and Decentralization

   Chapter 3: Introduction to Hyperledger and Composer

   Chapter 4: Basics of Hyperledger Fabric

   Chapter 5: Frameworks, Network Topologies, and Modeling

   Chapter 6: Chaincode in Hyperledger Fabric

   Chapter 7: Fabric SDK: Interaction with Fabric Network

   Chapter 8: Fabric SDK: Building End-to-End Application with Fabric Network

   Chapter 9: Fabric in Production

   Videos and How To

1. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

2. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

3. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

4. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution

2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform
    2. Best Instructional Solution in Other Curriculum Areas
    3. Best Learning Relationship Management Solution

- **2019**
    1. Best Virtual Learning Solution
    2. Best Content Authoring Development or Curation Solution
    3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

5. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Preface

Chapter 2: Blockchain and Decentralization

- Definitions
- Cryptocurrency
- Bitcoin
- Blockchain
- How Bitcoin works
- Wallets
- Basics of blockchain

- Mining in blockchain
- Cryptography
- Building blocks of blockchain
- Blocks
- Transactions
- Smart contracts
- Virtual machine
- Nodes
- Peer-to-peer network
- State machine
- Consensus
- Structure of blockchain
- Working of Blockchain
- Fundamentals of secure transaction processing
- Decentralization
- History of decentralization
- Decentralization using blockchain
- Decentralized ecosystem

- Blockchain for enterprise
- Enterprise blockchain platforms
- Considerations for using blockchain
- Distributed systems
- Byzantine Generals problem
- Types of blockchains
- Summary

Chapter 3: Introduction to Hyperledger and Composer

- Blockchain for business
- Advantages of Hyperledger Fabric
- Problems with existing blockchain technology
- Hyperledger Fabric architecture
- Consensus in Hyperledger
- Hyperledger tools
- Hyperledger Composer
- Hyperledger components
- Hyperledger application using Composer
- Composer query language

- Fabric Composer Playground
- Summary
- References

Chapter 4: Basics of Hyperledger Fabric

- Hyperledger and blockchain
- Blockchain for enterprises
- Hyperledger frameworks and tools
- Fabric and its components
- How does a transaction happen in Hyperledger Fabric?
- Difference between Bitcoin, Ethereum, and permissioned blockchain
- Hyperledger Fabric releases and differences
- Fabric 0.6
- Fabric 1.0
- Fabric 1.1
- Fabric 1.2
- Fabric 1.3
- Fabric 1.4 LTS

- World state and states
- Membership service provider (MSP)
- Generate MSP certificates and their signing keys
- Node.js SDK for Hyperledger Fabric
- Peers returning transaction proposal
- Chaincode in Node.Js
- Init(stub) Asynchronous
- Invoke(stub) Asynchronous
- Summary
- References

Chapter 5: Frameworks, Network Topologies, and Modeling

- Unlisted company network in Hyperledger
- Hyperledger network and application model
- Blockchain network
- Build a sample network
- Creating network from scratch
- Certificate authority
- Network administration node

- Consortium definition
- Channel for consortium
- Adding peers and ledgers to network
- Client/application and chaincode
- Exploring Hyperledger frameworks
- Hyperledger Sawtooth
- Hyperledger Fabric
- Hyperledger Indy
- Hyperledger Burrow
- Hyperledger Iroha
- YAC consensus algorithm
- Transaction privacy and security
- Understanding pre-requisites
- Docker
- Process of creating Hyperledger network
- Hands-on with network
- Summary
- References

Chapter 6: Chaincode in Hyperledger Fabric

- Demystifying chaincodes
- Chaincode for developers
- Deploying and testing the chaincode
- Chaincode best practices
- Creating a token using Convector tool
- Writing unit tests for chaincode
- Chaincode development using IBM blockchain platform
- Chaincode for operators
- Packaging the chaincode
- Creating the package
- Package signing by other owners
- Installing package
- Instantiating the chaincode
- Upgrading, starting, and stopping the chaincode
- System chaincode
- Summary
- References

Chapter 7: Fabric SDK: Interaction with Fabric Network

- Prerequisites Start Fabric network
- Install Node.js and NPM
- Create a Node.js SDK project
- Install Fabric npm modules
- Process of working with the network
- Enrolment and registration of admin and user using CA server
- Registration and enrolment of the user
- Chaincode invoke and query
- Invoking createProperty from the chaincode
- Invoking ChangePropertyOwner from Fabric SDK
- Summary

Chapter 8: Fabric SDK: Building End-to-End Application with Fabric Network

- Prerequisite
- Creating the API project
- Modifying our previous project files
- Creating the APIs

- Using Fabric for advanced use cases
- Creating a channel using Fabric SDK
- Joining the channel using SDK
- Instantiate the chaincode
- Summary

Chapter 9: Fabric in Production

- Fabric deployment using Swarm
- Integrating solution for monitoring Hyperledger Explorer
- Step 1: Set up Hyperledger Fabric.
- Step 2: Set up Hyperledger Explorer.
- Step 3: Install PostgreSQL.
- Step 4: Generate the Hyperledger Fabric network.
- Step 5: Configure Hyperledger Explorer on Fabric.
- Step 6: Build Hyperledger Explorer.
- Step 7: Run Hyperledger Explorer.
- Hyperledger Fabric in Clouds
- Fabric in AWS
- Hyperledger Fabric in Azure Cloud

- IBM blockchain platform
- Summary

You can’t stay away! Get

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