

uCertify

Course Outline

**Smart Contract Development with Solidity and
Ethereum**



14 May 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-The Concept, The Genesis

Chapter 3: Blockchain - Cryptographic Principles

Chapter 4: Distributed Applications

Chapter 5: Setting Up Ethereum Blockchain on Azure

Chapter 6: Setting up an Environment for Smart Contracts Development

Chapter 7: Programming Smart Contracts

Chapter 8: Blockchain-Offerings and Usages

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-The Concept, The Genesis

- The legacy and drawbacks
- The Bitcoin blockchain - Genesis
- Blockchain
- Characteristics of blockchain
- Transactions and blocks
- Securing your data
- Conclusion
- Questions

Chapter 3: Blockchain - Cryptographic Principles

- Authenticated hashing (HMAC)
- Digital signatures
- Conclusion
- Questions

Chapter 4: Distributed Applications

- Denominations
- Transactions
- Conclusion
- Questions

Chapter 5: Setting Up Ethereum Blockchain on Azure

- Ethereum on Microsoft Azure
- Azure account setup
- Ethereum account setup on Azure
- Set up a second account with MetaMask
- Conclusion
- Questions

Chapter 6: Setting up an Environment for Smart Contracts Development

- Azure
- Azure account setup
- Conclusion
- Questions

Chapter 7: Programming Smart Contracts

- Building blocks - Smart contracts
- Byte code
- EVM
- Smart contracts and solidity
- Truffle and test RPC
- Developing a smart contract
- Test smart contract
- Conclusion
- Questions

Chapter 8: Blockchain-Offerings and Usages

- Need, usages, and offerings
- Impact of blockchain technology in education

- Conclusion
- Questions

You can't stay away! Get

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