Blockchain, Cryptocurrency and Bitcoin
Professional Development

Blockchain and Cryptocurrency Certification
$199 | CE Hours 4.5

The blockchain is an open, transparent, and verifiable system that will fundamentally change the way we think about exchanging value and assets, enforcing contracts, and sharing data. Blockchain was originally developed as the technology behind cryptocurrencies like Bitcoin, a vast, globally distributed ledger running on millions of devices, worldwide. Given the promise of Blockchain as a disruptive technology, leading businesses worldwide are investing in blockchain solutions and in 2017 traditional investors have invested over $400 million in early-stage startups.

In this course, you will learn the history, the language and the basics of Blockchain, Cryptocurrencies, and Cryptography. You will learn how a distributed global ledger can record and move anything of value...money, contracts equities, titles, deed...virtually any kind of the asset.

Course modules:

1. Introduction to Digital Currency | 1 hour and 17 minute
2. The Basics of Blockchain | 1 hour and 11 minutes
3. Bitcoin Technology Fundamentals | 1 hour and 10 minutes
4. Working with Bitcoin | 49 minutes

_____

Blockchain and Cryptocurrency Certification
Course Module Description

Course Module 1: Introduction to Digital Currency

Overview

In this course, you'll learn about digital currency, including the history of money and ledger economics and distributed consensus. You'll also be introduced to Blockchain and the history and uses of Bitcoin.

Learning Objectives

Introduction to Currency

- provide an overview of the history of money and currency
- describe the key aspects of money and currency
- describe distributed consensus
- identify the aspects of price derivation

Introduction to Blockchain

- describe the basic factors of Blockchain
- provide examples of Blockchain
- list the benefits of Blockchain

Types of Blockchain

- describe public Blockchain
- describe private Blockchain
- describe hybrid Blockchain

Practical Blockchain

- provide an overview of Blockchain and commodities
- describe the benefits and reasons why Blockchain provides a secure collaborative environment
- provide an explanation of market forecasting and Blockchain
- describe the factors of Blockchain adoption

Introduction to Bitcoin

- provide an overview of Bitcoin's early history between 2008 and 2011
- explain the impact of Bitcoin
- describe significant Bitcoin events in 2012 and 2013
- describe the progression of Bitcoin as a commonly-accepted form of currency
- describe various known Bitcoin scandals and hacks, and their impact

Course Module 2: Bitcoin Technology Fundamentals

Overview

Bitcoin is a digital currency system that's driven by a database technology known as Blockchain, but what's the underlying technology? In this course, you'll learn the technological fundamentals of Blockchain, including basic Bitcoin technology, transactions, the pros and cons of transactions, and Bitcoin mining.

Learning Objectives

Basic Bitcoin Technology

- explain the basics of Bitcoin addresses
- explain the basics of Bitcoin networks
- explain the basics of mining bitcoins
- describe improvement proposals for Bitcoin
- describe Blockchain explorers

Bitcoin Transactions

- explain how Bitcoin is purchased
- explain how Bitcoin is sold
- describe unspent transaction outputs (UTXOs)

Transaction Pros and Cons

- describe the aspects of anonymity when dealing in Bitcoin
- explain the volatility of Bitcoin
- discuss unconfirmed transactions
- describe irreversibility as it pertains to Bitcoin transactions

Introduction to Mining

- describe the mining process
- describe mining pools and centralization
- discuss mining and security issues with Bitcoin
- discuss Bitcoin wallet hardware

Bitcoin's Impact and the Future

- discuss experimental opportunities for Bitcoin and Blockchain
- explain Bitcoin's social impact
- explain the issues surrounding Bitcoin and its future

Course Module 3: Working with Bitcoin

Overview

Working with Bitcoin involves the use of wallets and clients, and it's important to understand the security and regulatory considerations when working with the digital currency. In this course, you'll learn about working with Bitcoin, including wallets and how they work, Bitcoin clients and design, and security and regulatory considerations for working with Bitcoin.

Learning Objectives

Bitcoin Mining

- explain the purpose of mining, the value to miners, and how new bitcoins are created

- describe Bitcoin mining, proof-of-work, and pooled mining
- explain mining and processing, and the purpose and types of mining hardware

Working with Wallets

- describe the types of wallets
- explain deterministic wallets
- describe how to secure wallets
- explain passphrase-encrypted wallets

Bitcoin Clients

- describe full node and thin clients and security issues relating to both
- explain the Wallet Input Format (WIF) and importing and exporting functionality in Bitcoin wallets
- explain how to backup Bitcoin
- explain Bitcoin transactions and fees
- describe the various security issues with Bitcoin

Bitcoin Design

- explain cold storage and offline Bitcoins
- discuss conjoining and block trades
- describe how merchants can accept bitcoins

Security Considerations

- describe payment processors and what they do
- describe the secure payment protocol (BIP70) and how it's used
- explain regulatory and compliance issues surrounding Bitcoin
- discuss the various tax implications of Bitcoin

Course Module 4: The Basics of Blockchain

Overview

Bitcoin is a cryptocurrency - a digital currency system that's protected through the use of cryptography and driven by a database technology known as Blockchain. In this course, you'll learn the basics of Blockchain, including Bitcoin keys, units, and transactions, the pros and cons of Bitcoin, and ledgers. You'll also learn about cryptocurrency and the underlying technology behind cryptography.

Learning Objectives

Bitcoin Basics

- describe how Bitcoin pricing is established
- describe the Bitcoin community
- describe the basic elements to start buying and selling Bitcoin
- describe the incremental Bitcoin units

Pros and Cons of Bitcoin

- provide an overview of capital markets and Blockchain technology
- describe the various problems with Blockchain technology
- provide an overview of current and future Blockchain opportunities

Ledgers

- describe the Blockchain ledger
- explain the differences between single, double, and triple entry accounting
- explain the purpose of ledgers, and the differences between local and distributed ledgers
- explain qualities, differences, benefits, and drawbacks of centralized and decentralized ledgers

Cryptocurrency and Cryptography

- explain the various aspects of cryptocurrency
- describe the basic elements of cryptography
- explain the application and uses of cryptography throughout history
- describe how encryption works

The Application of Cryptography

- describe hash functions
- explain the differences between symmetric and asymmetric cryptography
- describe digital signatures and their uses
- describe digital certificates and their uses