Wharton
University of Pennsylvania

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COURSE CERTIFICATE

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# Srikanth Deti

has successfully completed

## Cryptocurrency and Blockchain: An Introduction to Digital Currencies

an online non-credit course authorized by University of Pennsylvania and offered through Coursera

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# Cryptocurrency and Blockchain: An Introduction to Digital Currencies

by University of Pennsylvania

**About this Course**

What is Cryptocurrency and how is it an innovative and effective method of currency? This course was designed for individuals and organizations who want to learn how to navigate investment in cryptocurrencies. Professors Jessica Wachter and Sarah Hammer will guide you through developing a framework for understanding both Cryptocurrency and Blockchain. You'll learn how to define a currency, analyze the foundations of digital signatures and blockchain technology in cryptocurrency, and accurately assess the risks of cryptocurrency in a modern investment portfolio. By the end of this course, you'll have a deep understanding of the realities of Cryptocurrency, the intricacies of Blockchain technology, and an effective strategy for incorporating Cryptocurrency into your investment plans. No prerequisites are required, although "Fintech: Foundations, Payments, and Regulations" from Wharton's Fintech Specialization is recommended.

**More**

**Taught by:**
**Jessica Wachter**, Dr. Bruce I. Jacobs Professor in Quantitative Finance

Finance

**Taught by:**
**Sarah Hammer**, Senior Director of the Alternative Investments Initiative, Adjunct Professor of Law

The Wharton School / University of Pennsylvania Law School

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| **Basic Info** | Course 2 of 4 in the Fintech: Foundations & Applications of Financial Technology Specialization |
| **Commitment** | 2-3 hours per week |
| **Language** | English, **Subtitles:** French, Portuguese (European), Russian, Spanish<br>**Volunteer to translate subtitles for this course** |

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| **How To Pass** | Pass all graded assignments to complete the course. |
| **User Ratings** | 4.6 stars |

## Syllabus

### WEEK 1

#### Module 1: Introduction to Cryptocurrency

In this module, you'll define Bitcoin and understand its popularity as a currency. You'll discuss the methodology behind transacting with Bitcoin, and gain a deep understanding of the definition of currency and the critical importance of a shared common belief behind a unit of currency. You'll also analyze the growth of centralized intermediaries that facilitate dollar transactions using cash-alternative methodologies and their role in currency. By the end of this module, you'll have a more clearly defined understanding of why cryptocurrency and bitcoin is used as a cash-alternative method, and how Bitcoin derives its potential value in the current market.

**More**

4 videos, 1 reading

1. **Video:** Introduction and Summary
2. **Video:** Introduction to Cryptocurrency
3. **Video:** Transacting in Bitcoin
4. **Video:** Why Cryptocurrency?
5. **Reading:** Module 1 Lecture Slides

**Show less**

**Graded:** Module 1 Quiz: Introduction to Cryptocurrency

### WEEK 2

#### Module 2: Rules and Structure of Bitcoin

This module was designed to analyze the problems that a decentralized currency must solve in order to be successful, and how Bitcoin meets these challenges using cryptology and blockchain technology. After identifying the philosophy of identity behind the concept of property rights, you'll learn how Bitcoin utilizes digital signatures in their transactions to ensure privacy for individuals. Then, you'll examine how blockchain technology employs Hash Functions to detect tampering attempts. Finally, you'll explore the creation and concept of

**More**

Distributed Consensus Protocol and how Proof of Work incentivizes honest trading and stable currency creation. By the end of this module, you'll be able to identify the importance of digital signatures, Blockchain, and Proof of Work in the stability of Bitcoin as a currency.

1. **Video:** Introduction to Module 2
2. **Video:** The Digital Signature
3. **Video:** A Tamper Proof Ledger
4. **Video:** What is Blockchain?
5. **Video:** Examples
6. **Video:** Distributed Consensus
7. **Video:** Proof of Work
8. **Video:** Mining and Currency Supply
9. **Video:** Future Challenges
10. **Reading:** Module 2 Lecture Slides

**Show less**

**Graded:** Module 2 Quiz: Rules and Structure of Bitcoin

## WEEK 3

### Module 3: Cryptocurrency as an Asset Class

In this module, you'll examine Cryptocurrency as an asset class, and delve deeper into whether Cryptocurrency has a place in individual investment portfolios. Through examining the theory and data perspective of traditional finance, you'll understand the risks and returns on Bitcoin and its place in a more stable and predictable portfolio. You'll also learn about the Capital Asset Pricing Model, and key concepts of Modern Portfolio Theory such as Tangency Portfolio and the Sharpe Ratio. Through calculating and specifying both Beta and Alpha of Bitcoins, you'll be able to accurately measure the systematic risk the investor takes in creating a portfolio with Bitcoin. By the end of this module, you'll be able to estimate and analyze the values of Beta and Alpha in Cryptocurrency, and effectively optimize utility in incorporating Cryptocurrency as an asset for your portfolio.

**More**

5 videos, 1 reading

1. **Video:** Cryptocurrency as an Asset Class
2. **Video:** Risk and Return to Cryptocurrency
3. **Video:** Review of Portfolio Theory
4. **Video:** Asset Allocation with Cryptocurrency
5. **Video:** Conclusion
6. **Reading:** Module 3 Lecture Slides

**Show less**

**Graded:** Module 3 Quiz: Cryptocurrency as an Asset Class

## Module 4: The Blockchain Ecosystem

In this module, you'll explore the Blockchain Ecosystem and the numerous use cases for Blockchain in different industries. Through examination of the key attributes of Blockchain, you'll discover how Blockchain is built. You'll also learn about the difference between Proof of Work and Proof of Stake, and the two interoperabilities of Blockchain. Through analyzing the different types of crypto finance, you'll explore the different use cases of Blockchain in business, gaming, and investing. By the end of this module, you'll have a deeper understanding of the fundamentals of Blockchain, be able to utilize Blockchain in many different contexts, and assess how Blockchain will affect both business and society in the future.

**More**

11 videos, 1 reading

1. **Video:** Module Introduction
2. **Video:** What is an Ecosystem
3. **Video:** Building the Blockchain
4. **Video:** Crypto Finance
5. **Video:** Business Use Cases
6. **Video:** Blockchain in Gaming
7. **Video:** Investing in Blockchain
8. **Video:** Government and Regulation
9. **Video:** Media and Advocacy
10. **Video:** Creating the New Frontier of FinTech - Securitize
11. **Video:** Creating the New Frontier of FinTech - Broadridge Financial Solutions, Inc.
12. **Reading:** Module 4 Lecture Slides

**Show less**

**Graded:** Module 4 Quiz

**View Less**

## How It Works

**General**

**How do I pass the course?**

To earn your Course Certificate, you will need to earn a passing grade on each of the required assignments—these can be quizzes, peer-graded assignments, or programming assignments. Videos, readings, and practice exercises are there to help you prepare for the graded assignments.

## Course 2 of Specialization

**What do start dates and end dates mean?**

Once you enroll, you'll have access to all videos, readings, quizzes, and programming assignments (if applicable). If you choose to explore the course without purchasing, you may not be able to access certain assignments. If you don't finish all graded assignments before the end of the course, you can reset your deadlines. Your progress will be saved and you'll be able to pick up where you left off.

**View the course in catalog**

## Related Courses

**What are due dates? Is there a penalty for submitting my assignment late?**

Within the course, there are suggested due dates to help you manage your schedule and keep coursework from piling up. Quizzes and programming assignments can be submitted late without consequence. However, it is possible that you won't receive a grade if you submit your graded assignment too late because classmates usually review assignments within three days of the assignment deadline.

**Can I re-attempt an assignment?**

If you want to improve your grade, you can always try again. To retry a peer-graded assignment, re-submit your work as soon as you can to make sure there's enough time for your classmates to review your work. In some cases you may need to wait before re-submitting a programming assignment or quiz. We encourage you to use this material during this delay.

Fintech: Foundations & Applications of Financial Technology

University of Pennsylvania


A Journey through Western Christianity: from Persecuted Faith to Global Religion (200 - 1650)

Yale University

Introduction to the Orbital Perspective

University of Arizona, University of Florida, Drexel University

Philosophy, Science and Religion: Religion and Science

The University of Edinburgh


Customer Insights: Quantitative Techniques

University of Illinois at Urbana-Champaign

Program Risk Management in ClickUp

Coursera Project Network


Programme
Management