# CIS600/FIN600: Blockchain and Cryptocurrencies

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## Course Description

BitCoin/Blockchain is a disruptive technology across many industries, including banking, supply-chain, insurance, cloud, information-technology and beyond. This course teaches about the BitCoin/Blockchain technology from a practice perspective. The learning objective is for students to identify, design and develop business applications on BitCoin and Blockchain. Towards the goal, it will include lectures, case studies, labs and projects on BitCoin/Blockchain. The hands-on part of the course will be application design and development on real software (ethereum.org). It will cover Bitcoin and Blockchain in terms of their interfaces, applications and internal mechanisms.

This will be a 3-credit team-taught course. The lectures will cover the Blockchain technology and applications interspersed.

- Time: Monday/Wednesday 5:15PM - 6:35PM
- Room: Hall of Languages 114

## Learning Objectives

Students will be able to 1) analyze existing applications on Blockchain, 2) design and development applications on Blockchain/cryptocurrency, and 3) identify new Blockchain applications in various functional areas of business. The learning goals will lead to potential startup opportunities on Blockchain.

## Texts - Recommended

Bitcoin and Cryptocurrency Technologies, Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, Steven Goldfeder, [online-book version]

## Grading

Class participation (15%), labs (50%), project/technical reviews (35% choose one)

## Course Schedule (Tentative)

- Lectures
  - Blockchain as transaction storage
  - Blockchain as smart-contract execution platform
  - Blockchain as cryptocurrency mine
  - Issues in Blockchain
- Case studies of real-world Blockchain applications
  - SilkRoad, CryptoKitties, EggFry, CoinBase, etc.
- Labs
  - Lab 1: Blockchain transactions and storage
  - Lab 2: Smart contract programming in Ethereum/Solidity
  - Lab 3: Cryptocurrency exchange services and payment applications (CoinBase alike)
- Project sample topics (Choose one):
  - Supply-chain on Blockchain: operational transparency, counter-risk management, etc.
  - Initial Coin Offering (ICO)

- Blockchain logging on Cloud services