

York University
Faculty of Liberal Arts & Professional Studies
Department of Economics
The Economics of Cryptocurrencies AP/ECON 3880 A
Fall 2026

Course Instructor:

Dr. Cheng Zhong

Teaching Assistant: TBA

Email: czhong@yorku.ca

Course Webpage: <http://eclass.yorku.ca>

Office Hours: Monday 2:30 pm – 3:30 pm

Office: TBD

Lecture Time and Location:

Mondays, 11:30 am; HNE B17

TA Hours: TBA

Prerequisite/Co-requisite:

AP/ECON 1000 3.00 and AP/ECON 1010 3.00 or equivalents.

This course will automatically count towards the BUEC/FBEC special course lists for students in those programs.

Course Description:

This course introduces cryptocurrencies from an economics perspective. Topics include price determination under the Proof of Work protocol, the use of a tax to restrain network electricity costs, the 51% network attack, the welfare costs and benefits of cryptocurrencies, the surrounding governance issues, central bank digital currencies and the effects of digital currencies on the monetary policies of central banks.

Required Course Materials:

Understanding Bitcoin: Cryptography, Engineering and Economics, by Pedro Franco
Cost: Physical: \$78 + HST; Digital Etext: \$63 (Tax Exempted)

Recommended Course Materials:

Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction, by Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder
Mastering Bitcoin: Programming the Open Blockchain, by Andreas M. Antonopoulos

Evaluation:

Test 1 (Topics 1, 2, 3, 4)	35%	Nov 2
Test 2 (Topics 5, 6 + Presentation)	20%	Dec 7
Class Presentation and Participation	45%	

This course will utilize the required course textbook in addition to numerous academic articles that are accessible to an undergraduate economics audience. We will engage in a “Flipped” Classroom Model where, during the semester, groups of students will be responsible for presenting papers and for responding to other students’ presentations. Class sessions will entail collaborative and active learning strategies including problem-solving and structured classroom discussions. Papers will be randomly assigned to the students by the professor and the assignments will be posted on eClass. The initial group presentation must be approximately 25-30 minutes long and must identify and directly address the main issues posed in the assigned article. Presentation responses from the class should be about 5 minutes long and students who contribute a response will receive credit toward their participation grade.

Topics:

Topic 1: Bitcoin Foundations and Technology: Money and Trust; Bitcoin Basics (Cryptography); Blockchain; Consensus; 51% Attack

Sept 14, 21 Franco Chapter 1, 2, 5, 6, 7; Narayanan et al. Chapter 3

Topic 2: Bitcoin Mining and Difficulty

Sept 28 Franco Chapter 9; Narayanan et al. Chapter 5

Topic 3: Ethereum and Smart Contracts

Oct 5 Franco Chapter 12; Ethereum Foundation

<https://ethereum.org/en/developers/docs/intro-to-ethereum/>

Oct 12 Reading Week

Topic 4: Stable Coins and Other Cryptotokens/NFTs

Oct 19 Franco Chapter 11; Narayanan et al. Chapter 10

<https://www.bis.org/publ/arpdf/ar2025e3.htm>

<https://www.bis.org/publ/work1270.pdf>

Topic 5: Central Bank Digital Currencies (CBDCs)

Oct 26 https://www.bis.org/publ/qtrpdf/r_qt1709f.htm

The People's Republic of China's Digital Yuan: Its Environment, Design, and Implications

<https://www.adb.org/publications/the-peoples-republic-of-chinas-digital-yuan-its-environment-design-and-implications>

Contingency Planning for a Central Bank Digital Currency – Bank of Canada

<https://www.bankofcanada.ca/2020/02/contingency-planning-central-bank-digital-currency/>

What we heard 2020–23 and what comes next – Bank of Canada

<https://www.bankofcanada.ca/digitaldollar/a-digital-canadian-dollar-what-we-heard-2020-23-and-what-comes-next/#what-comes-next>

Money and Payments: The U.S. Dollar in the Age of Digital Transformation – United States Federal Reserve Board

<https://www.federalreserve.gov/publications/files/money-and-payments-20220120.pdf>

Nov 2 Review; Test 1 (up to Topic 5)

Topic 6: Nov 9	Governance and stability Narayanan et al. Chapter 10 Notes on Blockchain Governance https://vitalik.eth.limo/general/2017/12/17/voting.html The Invisible Politics of Bitcoin: Governance Crisis of a Decentralized Infrastructure http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2852691 The Crypto Ecosystem and Financial Stability Challenges – International Monetary Fund https://www.imf.org/-/media/Files/Publications/GFSR/2021/October/English/ch2.ashx Fact Sheet: President Donald J. Trump Signs GENIUS Act into Law https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-president-donald-j-trump-signs-genius-act-into-law/ Executive Order on Ensuring Responsible Development of Digital Assets – President Joseph R. Biden Jr Executive Order https://bidenwhitehouse.archives.gov/briefing-room/presidential-actions/2022/03/09/executive-order-on-ensuring-responsible-development-of-digital-assets/ Canadian Securities Administrators Staff Notice 21-332 https://www.osc.ca/sites/default/files/2023-02/csa_20230222_21-332_crypto-trading-platforms-pre-reg-undertakings.pdf
Nov 16	Presentations
Nov 23	Presentations
Nov 30	Presentations
Dec 7	Test 2

Grading Policy:

- There is no final exam in this course. Test 2 will not be cumulative.
- If a student misses Test 1, there will be a make-up test. The student must provide the instructor with an attending physician's statement within one week of the missed exam.

Important Course Information:

Final course grades given by the instructor will use the standard York grading scale and may be

adjusted to conform to Program or Faculty grades distribution profiles. In addition, all students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage:

<https://secretariat.info.yorku.ca/files/CourseInformationForStudentsAugust2012-.pdf>

- Senate Policy on Academic Honesty and the Academic Integrity Website
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

Academic integrity is a fundamental and important value of York University. To maintain a fair and honest learning environment, students in this course are responsible for understanding and upholding academic integrity in all of their academic activities. To better understand expectations, familiarize yourself with the [Senate Policy on Academic Conduct](#). To learn more about how to demonstrate academic integrity in your courses and to access related resources and support, visit the [Academic Integrity website](#).

Course ADD/Drop Deadlines:

Last date to add a course without permission of instructor (also see Financial Deadlines)	Sept 22
Last date to add a course with permission of instructor (also see Financial Deadlines)	Sept 29
Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov 10
Course Withdrawal Period (withdraw from a course and receive a grade of "W" on transcript – see note below)	Nov 11 – Dec 8

Policy and Guidelines on Withdrawn from Course:

<https://www.yorku.ca/secretariat/policies/policies/academic-forgiveness-policy-senate/>