Blockchain, Cryptocurrencies, Digital Assets:
Business, Legal, and Regulatory Issues
LGST 2440-001, *Spring 2023*

Overview

Blockchain technology is a form of decentralized database that allows for the secure exchange of value without reliance on trusted intermediaries. Blockchain is the foundation for cryptocurrencies such as Bitcoin, as well as for distributed ledger platforms used by enterprise consortia in various industries. Many believe that blockchain solutions have revolutionary potential. They promise to replace legal enforcement with technical mechanisms of cryptographic consensus as the means of generating trust. The technology has generated significant excitement, investment, and entrepreneurial activity in recent years. However, the business value of blockchain-based solutions is uncertain, cryptocurrency valuations are speculative, and there are serious legal, regulatory, and governance challenges to be addressed. This course is designed to give students the tools for critical assessment of ongoing developments in this evolving area.

Instructor

Sami Ahmed
smahmed@wharton.upenn.edu
Office Hours: Wednesday 1:30-2:30pm

Learning Objectives

At the end of this course, you should able to:

1. Explain the essential features of blockchain, cryptocurrencies, and distributed ledger technology.
2. Evaluate current and potential business use cases.
3. Describe the major legal and regulatory challenges these technologies raise.

Requirements and Grading

The course is designed to be generally accessible. It does not require any technical skills, finance knowledge, or prior experience with cryptocurrencies.

In the spirit of accessibility and the general ethos of blockchain, I selected all readings which are publicly available online, saving students the cost and burden of textbooks or coursepacks.

The class meets once a week, for three hours (with a ten minute break in the middle of each class). For most weeks after the first few sessions, we will have a guest speaker for half the time. You are expected complete assigned readings and prepare for discussion with the guest speaker prior to each class. I will use a mixture of lecture, discussion, and in-class interactive activities; your active engagement is expected.

There will be no exams or quizzes. And there will be no written homework or problem sets, with the exception of questions for guest speakers. As a result, students will be expected to diligently engage the readings and prepare to be assessed on them.

As a former Wharton undergraduate, I understand the importance of grades and will try to be transparent and generous related to student performance throughout the course.

Your grade in the course will be comprised of the following elements:

Participation (25%)

- I will assess your overall contribution to the course.
- There will be several types of class participation but not all will be graded
    - Both random cold-calling and volunteer selection will be class methods to promote student learning. The Socratic method will be used at times, especially during review of cases. It is not important to answer the questions correctly, but the answers should demonstrate that the student appropriately read and engaged the material.
    - Every class session will start with students sharing important legal current events in the blockchain space (these will be a mix of cold-calling and volunteering).
    - Only the cold-calling portion of the course will be graded (as to not incentivize competition for airtime). As long as the student answers in a way that demonstrates they've done the readings (even if completely incorrectly), they will get full points for their response.
    - The first two class periods will not be graded for participation.

Attendance (25%)

- Attendance is mandatory.

Guest Speaker Questions (20%)

- We will have guest speakers for some of the class sessions. You must prepare questions for them. Submit your questions, and explanations for them, to the relevant assignment on Canvas. Your submissions will mostly be graded for completion, but extra points will be awarded to particularly insightful questions.

Final Project or Final Paper (30%)

- Students can form groups of up to three students and develop a pitch deck for their idea in the blockchain space.
- Students may opt out of the final project by instead submitting a final paper exploring an original thesis or idea related to the blockchain space.
- The pitch deck should place special emphasis on the legal and regulatory issues that their project might face and a proposed tactical outline for how to meet these legal and regulatory requirements.
- Pitch deck should be 10-15 slides.
- Students will give short (~15 min) presentations on their proposed idea.
- More detailed grading guidelines will be provided later, but the core components will be (i) the originality and viability of the business idea, (ii) rigor of the treatment of legal and regulatory obstacles, (iii) cogency of the presentation itself.

Industry Sources:

Due to the fast-changing nature of the subject matter students are encouraged to stay current with developments. For daily breaking news, excellent sources are:

• _CoinDesk : http://www.coindesk.com/
• _The Block: https://www.theblockcrypto.com
• _The Defiant: https://www.thedefiant.io
• _Matt Levine: https://www.bloomberg.com/account/newsletters/money-stuff

Class Telegram Channel:

Telegram is commonly used in the cryptocurrency industry to organize communities around a specific project and distribute information on the market. We will use a private Telegram channel to organize class discussions and share breaking news.

Syllabus

Class	Date		*Any materials that are listed as "skim" means you are not responsible for knowing any specifics about the material. They are mostly for you to have access to additional materials that may help bolster your understanding of certain concepts.*
1	January 18	**What is Money / Why Bitcoin or Blockchain?** - Course overview - Introduction to blockchain - Varying roles and concepts of money/currency and government - Digital currency impact on central banking	Read • On the Origin of Money • Island Money (skim) • The Many Traditions of Nongovernmental Money (skim) • Some Simple Economics of the Blockchain (1-24) • Digital Currencies, Decentralized Ledgers, And The Future Of Central Banking (first 2 pages)
2	January 25	**Technical Deep-Dive into Cryptocurrency and Consensus Systems** - Public and private keys - Digital signatures - Hashing - Byzantine fault tolerance - BTC, ETH, XRP Origins	Read • Princeton Bitcoin Book (Chapters 3, 5, 6, 7) • Proof-of-stake vs. proof-of-work • SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies (read for general understanding; don't need to know minute details) • Bitcoin Whitepaper • Ethereum Whitepaper (skim) • XRP Whitepaper (skim) • SHA256 Online Hash Function (play with this)
3	February 1	**Macroeconomic Perspective: Concept of Legal Tender and Monetary Policy Under CBDCs vs. Cryptocurrencies** - Deposit accounts - Bank runs - Coinage Clause - Role of FDIC - Role of the Central Bank - Inflation	Read • 31 U.S.C.A. § 5103 • 12 U.S.C.A. § 225a • Coinage Clause of the Constitution • Norman v. Baltimore & O.R. Co. • FDIC Cease and Desist Letters (read FTX letter; others are optional) • El Salvador's Experiment with Bitcoin as Legal Tender • What Does the Cryptocurrency Decline Mean for Bitcoin Countries? • What are CBDCs? A beginner's guide to central bank digital currencies • Crypto will become an inflation hedge — just not yet
4	February 8	**Applications of Blockchain and Novel Blockchain-Based Technologies** - Revolutionary potential across industries - MEV / Censorship issues - Zero-knowledge proofs	Read • The Security Token Thesis • Blockchain Use Cases • 34 Blockchain Applications and Real-World Use Cases (skim) • The Open Social Map • MEV: The Censorship Dilemma • Introduction to zk-SNARKs

5	February 15	**Stablecoins** - Purpose of stablecoins - Types: Algorithmic, Synthetic, Over-collateralized, Fiat-backed - Terra/Luna Collapse	Read • Luna Brothers, Inc. • Tether Original Whitepaper (skim) • Paxos Standard Whitepaper (skim) • Terra Whitepaper • Timeline of Terra Crash • Central Bank or Crypto • Inflation-resistant Stablecoins
6	February 22	**Brief History of ICOs/SEC Enforcement** - *Howey* Test - Application of *Howey* - Telegram, Kik, LBRY (be prepared to apply *Howey* to any of these)	Read • SEC v. Howey • Howey Scorecard • Economic Unreality: What SEC ICO Precedents Mean for Ripple • Cooley Alert: SEC v. Telegram: Key Takeaways and Implications • SEC v. Kik Complaint • SEC wins LBRY case, but the victory may have little impact in the greater cryptoverse • Ripple Brief for Summary Judgment (focus on Argument section) • SEC Brief for Summary Judgment Against Ripple (focus on Argument section)
7	March 1	**Securities Law: Deeper Dive** - Aggressive "everything is a security" approach - ATS - Retail investor protection	Read • Framework for Analysis of Digital Assets • Prepared Remarks of Gary Gensler On Crypto Markets, Penn Law Capital Markets Association Annual Conference • 17 CFR § 242.301 - Requirements for alternative trading systems • SEC EtherDelta Settlement • SEC Statement on Securities Law Considerations for Digital Asset Securities • SEC Charges Kim Kardashian for Unlawfully Touting Crypto Security
8	March 15	**Landscape of Crypto and Regulators** - Various verticals in crypto - Overview of various agencies and regimes with a hand in regulating crypto - Offshore crypto	Read • Blockchain & Cryptocurrency Laws and Regulations • Binance Research Industry Map • White House Framework for Responsible Development of Digital Assets • Executive Order on Ensuring Responsible Development of Digital Assets • Sushi To Set Up Shop In the Cayman Islands and Panama
9	March 22	**CFTC Enforcement: Ooki DAO** - What is a commodity - Regulation by enforcement - Battle between SEC and CFTC	Read • 7 U.S.C. § 1a(9) • CFTC Order Finds Ooki DAO Is Liable • Ooki Complaint • Dissenting Statement of Commissioner Summer K. Mersinger Regarding Enforcement Actions Against: 1) bZeroX, LLC, Tom Bean, and Kyle Kistner; and 2) Ooki DAO

			• Motion to Serve Ooki DAO via Chatbox (granted by court)
10	March 29	**Decentralization: DeFi and DAOs** - Power of decentralization - Legal treatment of DAOs - How DeFi works	Read • A Beginner's Guide to DAOs • DAO Landscape • DAOs and Other Terminology Guide (Vitalik Buterin) • DAO Legal Framework • DAO Trying To Buy U.S. Constitution--Again • Intro to DeFi
11	April 5	**FinCen/OFAC** - AML-KYC regime - Base layer neutrality	Read • Sanctions Compliance Guidance for the Virtual Currency Industry • FinCEN Digital Asset Action Plan • U.S. Treasury Sanctions Notorious Virtual Currency Mixer Tornado Cash • Base Layer Neutrality • Monero: The Privacy Coin Explained
12	April 12	**NFTs** - Different standards / blockchains - Royalties - Fractionalization	Read • How NFTs Create Value • ERC-721 vs. ERC-1155 • 9 Legal Issues That Stand Behind NFTs • NFT Class Action Against Yuga Labs and Celebs • Former Employee Of NFT Marketplace Charged In First Ever Digital Asset Insider Trading Scheme
13	April 19	**Taxation** - Crypto as property - Wash sale rules - Staking and mining taxation	Read • IRS Guidance 2014-21 on the taxation of virtual currencies • Wash Sale Trading in Crypto • Cryptocurrency Taxes • The Latest DeFi Alpha is Tax-Optimized Staking • Opinion on Celsius Earn Account Ownership • Beware the Potential DeFi Tax Trap
14	April 26	**Class presentations**	