Digital Currency, Blockchains, and the Future of the Financial Services Industry

Profs. Geoffrey Miller, Max Raskin, and David Yermack
NYU Law School LAW-LW.12371
NYU Stern School FINC-GB.3324

KMC 1-70, 44 West 4th Street
Mondays & Wednesdays, 10:30 –11:50
Fall 2025

<u>*Course overview*</u>
Bloomberg in 2016 summarized a research report issued by McKinsey & Co:

> *Firing people won't be enough to save the world's biggest banks from technological and regulatory changes that have reshaped the industry - whole businesses must go, according to McKinsey & Co. Almost every bank will have to quash aspirations to be all things to all customers . . . Only three to five global full-service banks will survive, McKinsey said.*

In 2020, Goldman Sachs appointed a new Head of Digital Assets, who told CNBC in an interview that:

> *In the next five to 10 years, you could see a financial system where all assets and liabilities are native to a blockchain, with all transactions natively happening on-chain.*

This course covers digital currencies, blockchains, and related topics in the FinTech area, perhaps the most significant innovation in the financial world since the advent of double-entry bookkeeping centuries ago. The technology appears to represent an existential challenge for major parts of the finance industry. It is now commonly suggested by experts such as McKinsey that commercial banks and stock exchanges may no longer exist, or may become much smaller, within the next 10 to 20 years, with increasing volumes of payments and exchange taking place on a decentralized, peer to peer basis.

We will begin with a study of the nature of money and legacy payment and banking systems. We will then study the emergence of stateless, cloud-based digital currency systems since 2009. Further lectures will explore threats that blockchain technology poses to incumbent firms and their resulting attempts to co-opt the technology into existing business models. We survey related topics including "smart contracts" and decentralized finance (DeFi), stablecoins, central bank digital currency (CBDC), and emerging regulation such as the 2025 GENIUS Act in the United States.

<u>*Learning Outcomes*</u>*:* The goal of this course is to equip the students to better understand the law and business of blockchain technology, both in its initial application in the digital currency Bitcoin, as well as in the wide variety of emergent digital assets and

applications currently being explored for a wide variety of uses and functions. The course is also intended to create a bridge between law students and business students that will enhance the quality of their communications after they enter into their careers.

Course organization

The course meets twice a week, Mondays and Wednesdays from 10:30–11:50. The Stern School and Law School have somewhat different academic calendars. We will generally follow the Stern calendar, since our classroom is located there. Our first class meeting will be Wednesday, September 3, and our final class meeting will be Monday, December 8. We will not hold class on Monday, October 13, which is a holiday at both schools, nor on Wednesday, November 26, which is a holiday at Stern. All class meetings will be recorded for later viewing, with links available on the NYU Brightspace website via MediaSite (note that we do not use PanOpto, the Law School's media platform, which is similar to MediaSite in many respects).

The course will feature a number of guest speakers, and we may need to adjust the class schedule to accommodate their travel constraints.

Readings

Many readings for the course will be posted in .pdf or .ppt format on NYU Brightspace, or will be available through Internet links included in the syllabus below. The syllabus may be updated several times during the semester to reflect the availability of new readings or guest speakers.

We will also feature reading excerpts from two textbooks:

- Narayanan et al., *Bitcoin and Cryptocurrency Technologies* (2016). This book, a companion to Princeton University's Coursera open on-line course in digital currency, is available for purchase, but a full pre-publication draft can be downloaded at no cost.

- Carnell, Macey & Miller, *The Law of Financial Institutions* (6^{th} edition, 2017). Excerpts will be distributed to students via NYU Brightspace.

For further reading:

- Students are encouraged to stay current on the topic by following recent developments. For relevant daily breaking news, the authoritative source is the website Coindesk.

- A concise, non-technical and highly readable introduction to the field is Malekan, *The Story of the Blockchain* (2018).

- Another succint book, written at the intermediate-level book and more focused on Ethereum and decentralized finance is Harvey, Ramachandran and Santoro, *DeFi and the Future of Finance* (2021).

Evaluation
Evaluation will be based 90% on student papers or projects that will be due during the May exam period, and 10% on the "student participation" short writing assignments described below. Potential paper topics will be distributed early in the semester, although students are encouraged to propose their own subjects.

Student Participation
Each student shall turn in a 1 to 2-page essay analyzing or discussing a topic that was presented in class or addressed in the readings assigned during the prior month. The essay shall identify an issue or question that remains unsolved, or inadequately explored or resolved, and explain why that issue is important or impactful. The essay should be written in 12 point font, double-spaced, with standard margins and should include citations as necessary to the lecture, class assigned reading, and any other sources. All essays shall be submitted by 5:00 pm Eastern time on the below dates via NYU Brightspace in .docx or .pdf format. These essays will be graded on a pass/fail basis and will account for 10% of the student grade. *Essay due dates:* September 26, October 24, and November 21.

Lecture topics
An approximate list of the course's lecture topics appears below. We may deviate from this schedule based upon factors including the pace of individual lectures and the availability of guest speakers, and events that occur in industry. Additional readings may be supplied and posted on NYU Brightspace when they become available.

Wednesday, September 3 GM/MR/DY Introductory class

- *The Economist*, 2015, "The Great Chain of Being Sure About Things."
- Ferguson, 2020, "Bitcoin Is Winning the COVID-19 Monetary Revolution."
- *The Economist*, 2021, special report on The Future of Banking.

Monday, September 8 GM The nature of money

- Carnell, Macey & Miller (19-21; 31-40; 199-204).

Wednesday, September 10 GM Payment systems

- Narayanan et al, Preface pp 3-22.
- Carnell, Macey & Miller (50-56; 65-78).

Monday, September 15 GM Bank failures

- Carnell, Macey & Miller (238-249; 260-267) .

Wednesday, September 17 DY The road to Bitcoin
Monday, September 22

- Nakamoto, 2008, "Bitcoin: A Peer-to-Peer Electronic Cash System."
- Segal, 2014, "Eagle Scout. Idealist. Drug Trafficker?"
- Narayanan, et al. Preface, pp 3-22.

- *Optional:* For a possible narrative of the mysterious circumstances surrounding the creation of Bitcoin, visit http://vu.hn/bitcoin%20origins.html and see the discussion at https://blocksplain.ricmac.org/2018/02/15/satoshi-nakamoto-scronty/

Wednesday, September 24 DY Blockchains and mining
Monday, September 29

- Narayanan, et al. Ch. 1.
- Haber & Stornetta, 1991, "How to Time-Stamp a Digital Document."
- Böhme, Christin, Edelman, and Moore, 2015, "Bitcoin: Economics, Technology, and Governance."
- Huang, O'Neill, & Tabuchi, 2021, "Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?"

Wednesday, October 1 DY Forks, attacks, and "code=law"

- Narayanan, et al. Ch. 5
- Kiernan, 2023, "Bitcoin's Future Depends on a Handful of Mysterious Coders."

Monday, October 6 DY Ethereum and proof of stake

- Leisig, 2017, "The Ether Thief."
- CoinMetrics, 2022, "Mapping Out the Merge."

Wednesday, October 8 | DY | Altcoins and tokens; ERC-20 ICOs and ERC-721 NFTs

- Howell, Niessner, & Yermack, 2020, "Initial Coin Offerings: Financing Growth with Cryptocurrency Token Sales."
- Chow, 2021, "NFTs Are Shaking Up the Art World—But They Could Change So Much More."
- Upson, 2021, "The 10,000 Faces That Launched an NFT Revolution."

Wednesday, October 15 | [DY] | Blockchains, NFTs, provenance, and the art market

Guest speaker: **Amy Whitaker**
NYU Steinhardt

- McAndrew, 2023, *Art Basel Market Report*, pp. 16-54.
- Corbett, 2023, "The Inheritance Case That Could Unravel an Art Dynasty."

Optional:
- Keefe, 2023, "How Larry Gagosian Reshaped the Art World,"
- Miller, "Want to Buy This Painting? First You'll Have to Audition for It."

Monday, October 20 | [DY] | Blockchain tracing and forensics

Guest speaker: **Jonathan Levin**
CEO, Chainalysis

Wednesday, October 22 | MR | Criminal litigation and crypto assets

- *SEC v. Shavers*, case no. 4:13-CV-416 (E.D. Tex. Aug. 6, 2013)
- *U.S. v. Faiella*, 39 F. Supp. 3d 544 (S.D.N.Y. 2014)
- *U.S. v. Ulbricht* sentencing transcript (S.D.N.Y. 2015) (pp. 63-98)
- *Van Loon v. Department of the Treasury*, No. 23-50669 (5th Cir. 2024)
- (Optional) Bilton, 2022, "The Ballad of Razzlekhan and Dutch, Bitcoin's Bonnie and Clyde."
- *Ending Regulation by Prosecution*, dated April 7, 2025 ("Blanche Memo")

Monday, October 27 | MR | Smart contracts

- Narayanan et al., Ch. 9.
- Szabo, 1996, "Formalizing and Securing Relationships on Public Networks."

- Chamber of Digital Commerce, 2016, "Smart Contracts – 12 Use Cases for Business & Beyond."
- Raskin, 2017, "The Law and Legality of Smart Contracts."

- (Optional) Raskin & Millman, 2023 "An Introduction to Personal Growth Bets: Using Contract Law to Lose Weight and Quit Smoking."

Wednesday, October 29	[GM]	Privacy and crypto regulation

Guest speaker: **Peter van Valkenburgh**
Executive Director, Coin Center

Monday, November 3	DY	Decentralized finance (DeFi)

- *The Economist*, 2021, special report on Decentralized Finance.
- Schär, 2021, "On Blockchain- and Smart Contract-Based Financial Markets."
- Lehar & Parlour, 2025, "Decentralized Exchange: The Uniswap Automated Market Maker."

Wednesday, November 5	[DY]	De-banking of crypto companies

Guest speaker: **Juan Suarez**
Founder of Crypto Ratings Council
Former Deputy General Counsel, Coinbase

Monday, November 10	MR	Civil litigation and crypto assets

- Raskin, 2015, "Realm of the Coin: Bitcoin and Civil Procedure."

Wednesday, November 12	MR	Securities regulation and crypto

- Henderson & Raskin, 2019, "A Regulatory Classification of Digital Assets: Toward an Operational *Howey* Test for Cryptocurrencies, ICOs, and Other Digital Assets."
- Garlinghouse, 2020, "The SEC's Attack on Crypto in the United States."
- *SEC v. Ripple Labs*, case no. 20 Civ. 10832 (S.D.N.Y., July 13, 2023)
- Donald Trump, Speech at Libertarian Party National Convention (transcript) (2024)
- Congressional Research Service Report on H.R. 3633, the CLARITY Act (2025)
- Congressional Research Service Report on S. 1582 GENIUS Act (2025)

Monday, November 17 | DY | DeFi controversies and the emergence of Ethereum competitors

- Wahrstätter, Zhou, Qin, Sventinovic and Gervais, 2023, "Time to Bribe: Measuring Block Construction Markets."

Wednesday, November 19 | GM | Stablecoins, past and present

- Carnell, Macey & Miller (204-238).

Monday, November 24 | GM | Regulation of stablecoins

- Bank for International Settlements, 2025, "Stablecoin Growth – Policy Challenges and Approaches."
- Bank Policy Institute, 2025, "Closing the Payment of Interest Loophole for Stablecoins."
- DLA Piper, 2025, "EU Crypto-Assets Regulatory Framework: Application of the Landmark Markets in Crypto Assets Regulation (MiCA)."
- Paul Weiss, 2025, "GENIUS Act Ushers in Comprehensive Federal Regulation of Payment Stablecoins."
- PWC, 2025, "Global Crypto Regulation Report."
- Sidley Austin, 2025, "The GENIUS Act: A Framework for U.S. Stablecoin Issuance."
- State Financial Regulators Letter to Congress on the GENIUS Act
- American Bankers Association Letter to Congress on the GENIUS Act
- Fact Sheet: President Donald J. Trump Signs the GENIUS Act into Law

Monday, December 1 | DY | Private and social media stablecoins

- Brunnermeier, James, & Landau, 2019, "The Digitalization of Money."
- Tett, 2021, "Bankers Quietly Mould Crypto Innovations for Their Own Use."
- Kowsmann, Ostroff & Wexler, 2024, "Crypto Gets Blamed for a Real-Life Currency Crisis."
- Berwick & Foldy, 2024, "Inside the Russian Shadow Trade for Weapons Parts, Fueled by Crypto."
- Berwick, Foldy, Strasburg & Brown, 2024, "Howard Lutnick's Other Top Client: Crypto Giant Tether."
- Elder, 2025, "Stablecoins Might Revolutionise Payments, but What if They Don't?"

Wedensday, December 3 DY Central bank digital currency

- Dyson & Hodgson, 2016, "Digital Cash: Why Central Banks Should Start Issuing Electronic Money."
- Raskin & Epstein, 2023, "A Wall of Separation Between Money and State: Policy and Philosophy for the Era of Cryptocurrency."
- CBDC Tracker: https://cbdctracker.org/
- Atlantic Council: https://www.atlanticcouncil.org/cbdctracker/

Monday December 8 DY Crypto's impact on investing markets

- Le & Campbell, 2025, "Crypto and the Evolution of the Capital Markets"
- Livsey & Stafford, 2025, "Investors Pile into Tokenised Treasury Funds."
- Pantera Capital, 2025, "The Great Onchain Migration."
- Kaiko, 2025, "Perps Are Coming to America."