

Law W247.6, sec. 001 – Blockchain for Lawyers
Summer 2020, Quarter 2
1 Unit

Instructor Information

Instructor: Brian R. Israel
Email: bisrael@berkeley.edu
Phone: (202) 417-6157

Virtual Office Hours:

- Mondays (June 15 & 22): 4:30-5:00 PM PDT
- Tuesdays (June 16 & 23): 9:30-10:00 AM PDT

Zoom meeting IDs for office hours will be disturbed in bCourses and by email.

Course Information

Meetings: 4:00-6:30 PM PDT on:

- Thursday, June 11
- Tuesday, June 16
- Thursday, June 18
- Tuesday, June 23
- Thursday, June 25

Zoom ID: provided in bCourses and by email to students.

Textbook & Course Materials

The primary text for this course is Primavera De Filippi & Aaron Wright, *BLOCKCHAIN AND THE LAW: THE RULE OF CODE* (Harvard University Press, 2018) ([publisher link](#)). The e-book version is accessible free of charge to UC Berkeley students through UC Berkeley Library services ([link](#)).

All other assigned readings are linked from this syllabus. Reading assignments are specified in the class schedule table that follows. In addition to learning outcomes, each reading assignment includes notes about what I hope you'll take from it, and food for thought as you read.

Following the assigned readings for each class session I have provided some **Optional Resources** highlighted in this color, along with brief explanations of what you might gain from each. These are my recommendations for students wishing to delve more deeply into the topics we'll cover. I will present much of this material in class, but will not expect students to have read it.

Course Description

Blockchain technologies—decentralized databases utilizing public-private key cryptography and consensus mechanisms that would not normally be of interest beyond protocol engineering circles—have captured the imagination and attention of entrepreneurs, investors, multinational enterprises, and governments because of their transformative potential. Visions of “banking the unbanked,” enhancing democracy, and enabling new forms of global collective action. Fears of fueling illicit activity such as terrorist financing and money laundering. In these early days of this embryonic technology, much of this potential remains theoretical, most of the use cases experimental, and the application of existing legal and regulatory frameworks largely unsettled.

This course explores the theoretical potential and practical limitations of blockchain technologies, and the evolving legal and regulatory responses to early applications, with a view to distilling the most legally-salient attributes of blockchain technologies for evaluating their opportunities and risks in a range of practice settings.

bCourses

Our class bCourse site is: <https://bcourses.berkeley.edu/courses/1493124>.

Class Meetings Format

Class meetings will be offered online via web conference with Zoom. Zoom meeting IDs for each class will be circulated via email and bCourses. You are strongly encouraged to attend classes live on Zoom if that is possible for you. If you are not able to attend at the time the class takes place, then you must view the entire class recording. All recordings will be accessible through the Media Gallery in bCourses.

Whether you attend in real-time or view the recording, you are responsible for all content covered in each class meeting.

Remote Instruction Guidelines

The relevant skills to participate in remote instruction are not only technology skills. You also need to exercise good communication, judgement, and professionalism. To that end, please follow these recommendations for conduct in remote classes on Zoom:

- Your ability to engage meaningfully with your instructor and classmates, exercising the full range of your communication skills, will be enhanced if you can talk to each other and see each other. We realize that this will not always be possible for a variety of reasons. But please use video when it is possible, unless your instructor gives other instructions.
- The benefits of video will be compromised if your background is distracting. If you can't avoid being in a place with distractions in the background, consider using a virtual background. See instructions for that here: <https://support.zoom.us/hc/en-us/articles/210707503-Virtual-Background>
- Along the same lines, try to present yourself with the same professionalism you bring to in-person classes. In other words: wear appropriate clothes and sit upright facing your screen as you would face the instructor in class.
- Note that recordings of Zoom classes typically capture images of participants, screen-shared material, and a transcript of all chats that are displayed to the meeting host. So (1) all of your participation should be class-appropriate (i.e. avoid snarky comments in the chat); (2) you should not distribute the videos (which would have both copyright and privacy implications).
- Please Do not share your screen with the class unless instructed to do so by me.
- Please keep yourself on “mute” when you are not speaking. This will help to minimize background noise for everyone.
- When you would like to speak in class, please use the “raise hand” function in the participants pane. Then, wait for me to call on you before speaking.

Technology Help

If technical difficulties prevent you from completing course work, please alert your professor immediately. However, understand that the professor cannot assist you with technical problems. You must contact tech support and make sure you resolve any issues immediately. Be sure to document (save emails and transaction numbers) for all interactions with tech support.

Berkeley Law students are entitled to general software support for their computers from the law school, and certain free software downloads from UC Berkeley, while enrolled. UC Berkeley does not provide hardware support. Information, links, and instructions for many common computer/technical questions can be found in the law library's online computing guide:
<http://libguides.law.berkeley.edu/computing/home>.

For bCourses, Zoom, and technical support questions, please contact studentcomputing@law.berkeley.edu. In both cases, someone will respond to you during our regular business hours.

If you have research-related questions, please contact the reference librarians by filling out the form here: <https://www.law.berkeley.edu/library/dynamic/students/researchRequest.php>.

You can also reach reference librarians during business hours by using our chat service (<https://www.law.berkeley.edu/library/dynamic/internal/chat.php>) or by calling +1 (510) 642-0900.

Methodology & Learning Outcomes

The overarching objective of this 1 unit seminar is to impart a general counsel's awareness, understanding, and intuition for blockchain technologies. That means a generalist's broad awareness of the legal dimensions of this embryonic technology and a strategic perspective on potential applications, rather than a specialist's fluency in any of the myriad areas of law implicated by blockchains. Students should be able to identify legal issues presented by any application of blockchain technologies they encounter and understand these issues sufficiently to be able engage a specialist, and communicate these legal issues to clients. Students are not expected to develop a specialist's facility with securities or banking laws, for example.

Students should also develop a strategic perspective on how blockchain technologies may be employed as an *alternative* to legal instruments to achieve clients' goals.

As a course in blockchain for *lawyers* (as opposed to protocol engineers), we will take a functional, top-down approach to the technical dimensions: beginning from the *functions* that are most significant for lawyers, and delving no farther into the inner workings of the technology than necessary for legal analysis.

By the conclusion of this seminar, you should:

1. Develop a "general counsel's awareness" of the basic characteristics, elements, and actors common to public blockchain networks.
2. Be familiar with the potential and limitations of smart contracts as an alternative to legal contracts.
3. Understand how smart contracts can be structured for enforcement as legal contracts.
4. Be familiar with the basic characteristics of digital assets most salient to many systems of property law.
5. Be familiar with the emerging approach of the U.S. Securities and Exchange Commission to digital assets.
6. Be aware of Commodity Futures Trading Commission (CFTC) jurisdiction over digital assets.
7. Be aware of the know your customer (KYC) and anti-money laundering (AML) regulatory requirements relevant to cryptocurrencies.
8. Be familiar with the potential benefits and public policy concerns (from criminal activity to loss of "monetary sovereignty") presented by cryptocurrencies, including stablecoins.

9. Be familiar with theoretical and experimental applications of blockchain technologies to corporate governance, as well as to new forms of organization and collective action.
10. Be able to identify, and critically evaluate, potential opportunities to utilize blockchain technologies alongside or in place of traditional legal instruments.

More generally, students in the course will be expected to achieve the following Berkeley Law Learning Outcomes:

- (a) Knowledge and understanding of substantive and procedural law;
- (b) Legal analysis and reasoning, legal research, problem-solving, and written and oral communication in the legal context; and
- (c) Using the law to solve real-world problems and to create a more just society.

Exam

Students will be assessed by a 2 hour take-home exam available to students from **9:00 AM PDT on Saturday, June 27th to 11:59 PDT on Monday, June 29th**. The exam will be open book and is designed to evaluate the above Learning Outcomes.

Grading

As a 1-unit seminar, this course will be graded credit/no credit based solely on the exam.

School-wide Policies

- Student Services schedules all exams, including accommodated exams, as the law school is committed to anonymous grading. **Professors do not have the authority to reschedule exams.** Any student who seeks an accommodated or rescheduled exam for documented medical reasons, disability, or for religious observance, should contact [Student Services](mailto:kvalenti@berkeley.edu), 510-643-2744, kvalenti@berkeley.edu.
- The Academic Honor Code [[Academic Honor Code](#)] governs the conduct of all students during examinations and in all other academic and pre-professional activities at Berkeley Law. We expect students to adhere to this code scrupulously. If you have any question whether your conduct may violate the code, please contact your professor before you act. You may face severe consequences, including a failing grade in this class or removal from the program, if you violate the code, even if similar conduct is not considered wrong in your home country.
- A common and serious form of misconduct and Honor Code violation is plagiarism. You must cite the sources of any words or ideas that are not your own. Cite all sources — hard copy, web-based, and others — in proper academic format.

Course Schedule

Class Date	Topic	Assignment	Relevant Learning Outcome
June 11	Introduction & Overview	BLOCKCHAIN AND THE LAW pp. 1-9	<ul style="list-style-type: none"> ● Develop a “general counsel’s awareness” of the general characteristics, elements, and actors common to public blockchain networks.

			<p>---</p> <p>Read this introductory chapter for a basic orientation to how blockchain tech is used, and more interestingly, visions for what it might transform. In particular, consider the authors' vision (p. 5): "These systems create order without law and implement what can be thought of as private regulatory frameworks—which we will refer to throughout this book as <i>lex cryptographica</i>." Don't worry if you don't yet have a clear picture of what a blockchain is; the next assignment will help, and we'll devote a significant portion of our June 11 class session to achieving a basic working understanding of blockchains.</p>
	Characteristics of Blockchains	BLOCKCHAIN AND THE LAW pp. 33-46	<ul style="list-style-type: none"> • Develop a "general counsel's awareness" of the general characteristics, elements, and actors common to public blockchain networks. <p>---</p> <p>Read this section to <u>begin</u> the process of understanding what a blockchain is and the attributes that are most important for lawyers to understand. Please don't worry if you don't understand some (or most!) of this material at this stage. We will discuss the core points I want you to take away in our June 11 class.</p>
		Chris Dixon, <i>What is Blockchain: Computers that Can Make Commitments</i>	<ul style="list-style-type: none"> • Develop a "general counsel's awareness" of the general characteristics, elements, and actors common to public blockchain networks. <p>---</p> <p>Venture capitalist Chris Dixon boils most of what you covered in the first two reading assignments into a relatively simple concept: "computers that can make commitments."</p>

June 11 Optional Resources	Decentralization applied: the vision of “Web 3”	Chris Dixon, Why Decentralization Matters (Feb. 18, 2018)	Venture capitalist Chris Dixon illustrates the practical importance of decentralization in the context of the history and future of the internet. This piece summarizes the vision of a “Web 3” enabled by blockchains.
	What blockchain applications is VC betting on?	Chris Dixon and Katie Haun, Crypto Fund II	This announcement of a new blockchain fund by venture capital firm Andreessen Horowitz (“a16z”) hints at the blockchain applications in which they see venture-scale potential.
		a16z crypto startup school (video lectures)	These video lectures from the “Crypto Startup School” recently organized by venture capital firm Andreessen Horowitz (“a16z”) covers topics ranging from the mechanics of blockchain networks, to perspectives on future applications, and blockchain business strategy.
June 16	Smart Contracts	BLOCKCHAIN AND THE LAW pp. 72-88	<ul style="list-style-type: none"> • Be familiar with the potential and limitations of smart contracts as an alternative to legal contracts. • Understand how smart contracts can be structured for enforcement as legal contracts.
		UK Jurisdiction Taskforce, Legal Statement on the Status of Cryptoassets and Smart Contracts ¶¶18-22 (p. 8).	<ul style="list-style-type: none"> • Understand how smart contracts can be structured for enforcement as legal contracts. <p>---</p> <p>This statement by a panel of eminent English lawyers provides high-level answers to questions about how digital assets fit into English property law, and how smart contracts mesh with English contract law. Whereas only 1 page is assigned, you can find the details of the Taskforce’s smart contracts analysis at ¶¶ 135-148 (pp. 31-34).</p>

	Digital Assets as Property	UK Jurisdiction Taskforce, <i>Legal Statement on the Status of Cryptoassets and Smart Contracts</i> ¶¶23-48(p. 9-14); ¶¶ 117-119 (p. 28).	<ul style="list-style-type: none"> • Be familiar with the basic characteristics of digital assets most salient to many systems of property law. <p>---</p> <p>Laws governing personal property vary by country (and by state within the United States, for example). Accordingly, read this report not as a universal statement of how jurisdictions around the world will handle property questions relating to digital assets, but rather as a thoughtful analysis of how the laws of England would treat digital assets. “Digital assets,” or “cryptoassets,” as used in the ¶¶ 23-48 of the report, encompass assets that exist solely within a blockchain network (e.g., a Bitcoin). ¶¶117-119 begin to explore the possibility of digital tokens serving as documents of title for physical assets.</p>
June 16 Optional Resources		Brian R. Israel, <i>Space Governance 3.0</i> , GA. J. INT’L & COMP. L, 715 (2020).	<ul style="list-style-type: none"> • Be familiar with the potential and limitations of smart contracts as an alternative to legal contracts. <p>---</p> <p>These published remarks explore the potential of smart contracts in the governance of the space domain. The remarks highlight the physical and legal characteristics of the space domain (i.e., an area beyond territorial sovereignty) that make it a particularly compelling use case for blockchain technologies.</p>
June 18	Digital Money Overview	BLOCKCHAIN AND THE LAW pp. 61-71	<ul style="list-style-type: none"> • Be aware of anti-money laundering regulatory requirements relevant to cryptocurrencies. • Be familiar with the potential benefits and public policy concerns (from criminal activity to loss of “monetary

			<p>sovereignty”) presented by cryptocurrencies, including stablecoins.</p> <p>---</p> <p>Read this section for a sense of the promise of digital currencies (e.g., remittances and “banking the unbanked”) and the perils (money laundering, terrorist financing and other criminal uses). What are the privacy implications of mainstream use of digital currencies (given that they are pseudonymous, not anonymous?). Be aware that anti-money laundering (AML) regulations apply to issuers and exchangers of digital currencies (you can find more detail on this in the optional FinCEN memo). Would a global, widely-adopted cryptocurrency diminish the “monetary sovereignty” of central banks?</p>
	Stablecoins	Ben Regnard-Weinrabe, Heenal Vasu & Hazem Danny Al Nakib, Stablecoins , Harvard Law School Forum on Corporate Governance (Feb. 10, 2019).	<ul style="list-style-type: none"> • Be familiar with the potential benefits and public policy concerns (from criminal activity to loss of “monetary sovereignty”) presented by cryptocurrencies, including stablecoins. <p>---</p> <p>This short note introduces “stablecoins,” cryptocurrencies effectively pegged to a national currency. It introduces the three most common designs used to achieve stability: fiat/commodity-collateralized; crypto-collateralized; and non-collateralized.</p>
		G7 Working Group on Stablecoins, Investigating the impact of global stablecoins , Oct. 2019 §§ 2.1.1 (p. 5-6); 2.1.3 (p.7);	<ul style="list-style-type: none"> • Be aware of anti-money laundering regulatory requirements relevant to cryptocurrencies. • Be familiar with the potential benefits and public policy concerns (from criminal activity to loss of “monetary sovereignty”) presented by cryptocurrencies, including stablecoins. <p>---</p>

			<p>§2.11 is a high-level survey of pertinent questions about the legal rights of a stablecoin holder vis a vis the issuer or underlying assets. §2.1.3 is a similarly high-level statement of G7 members' intentions to subject stablecoins to the highest standards for combatting illicit finance.</p>
	KYC & AML Requirements for “Exchangers” & “Administrators” of Virtual Currencies	<p>Department of Treasury Financial Crimes Enforcement Network (FINCEN), Application of FinCEN's Regulations to Persons Administering, Exchanging or Using Virtual Currencies, March 18, 2013.</p> <p>Read pp. 1-3 (skip section a); pp 4-5 (sections b & c).</p>	<ul style="list-style-type: none"> • Be aware of the know your customer (KYC) and anti-money laundering (AML) regulatory requirements relevant to cryptocurrencies. <p>---</p> <p>Focus on the distinction between “users” of virtual currencies vs. “exchangers” and “administrators” in the application of FinCEN regulations.</p>
	Central Bank Digital Currency	<p>Tom Wilson, Explainer: Central bank digital currencies – Moving toward reality? (Reuters, Jan. 23, 2020)</p>	<ul style="list-style-type: none"> • Be familiar with the potential benefits and public policy concerns (from criminal activity to loss of “monetary sovereignty”) presented by cryptocurrencies, including stablecoins. <p>---</p> <p>This brief (~5 minute) primer by Reuters highlights the forces prompting several central banks to explore issuing central bank digital currencies (including the prospect of widely adopted global stablecoins, such as Libra).</p>
June 18 Optional Resources	How Stablecoins Work	<p>Coinbase, How Does Dai stay stable? (2 minute video)</p>	<p>This 2 minute video explains the mechanisms enabling Dai to remain stable relative to \$1.</p>
	AML Regulation of Virtual Currencies	<p>Michael del Castillo, Privacy Coins Monero, Zcash and Dash Face Uphill Battle in Japan, Forbes, May 12, 2020.</p>	<p>This is one recent data point of a government (Japan's financial regulator in this case) taking action against virtual currencies that undermine AML and terrorist financing controls. The author speculates that the root of regulators' concern may be less about the underlying technology of so-called “privacy coins” than the KYC</p>

			and AML controls applied by the exchanges that convert these privacy coins into fiat or other virtual currencies.
		Libra white paper v.2.0, § 5: Compliance and the Prevention of Illicit Activity	The Libra project initiated by Facebook met significant controversy and regulatory scrutiny. Whereas the initial white paper was criticized for not supplying sufficient detail on arrangements for preventing illicit activity, the version 2.0 white paper released in April 2020 offers considerable detail compliance measures. Section 4 of the white paper outlines design changes to mitigate monetary sovereignty concerns.
	Central Bank Digital Currencies	Bank of England, Central Bank Digital Currency: opportunities, challenges and design (Discussion Paper) (March 12, 2020)	This March 2020 Discussion Paper offers one data point of the considerations weighed by central banks considering central bank digital currencies (CBDC).
June 23	Securities Regulation	<p>U.S. Securities and Exchange Commission (SEC), Framework for “Investment Contract” Analysis of Digital Assets.</p> <p>U.S. SEC, No Action Letter to Pocketful of Quarters, Inc. (July 25, 2019)</p> <p>Prof. Joseph A. Grundfest, Is Bitcoin a Security? (video)</p>	<ul style="list-style-type: none"> Be familiar with the emerging approach of the U.S. Securities and Exchange Commission to digital assets. <p>---</p> <p>The so-called <i>Howey test</i> for whether a digital asset constitutes an “investment contract” within the meaning of the Securities Act, requiring registration or an exemption, comes from the 1946 U.S. Supreme Court Case <i>S.E.C. v. W.J. Howey Co</i>, 66 S.Ct. 1100. By publishing this Framework, the SEC illustrates how it adapts a test forged in relation to sales of land and service contracts in a Florida citrus grove to analyze whether digital assets are securities.</p> <p>The Pocketful of Quarters No Action Letter is an application of this framework to a relatively easy case.</p>
	Commodities Regulation	Remarks of Commodity Futures Trading Commission	<ul style="list-style-type: none"> Be aware of CFTC jurisdiction over digital assets.

		(CFTC) Chairman Heath Tarbert , Oct. 10, 2019 (video: watch through minute 13).	<p>---</p> <p>Two takeaways to watch for: (1) around minute 5, Chairman Tarbert explains that while the CFTC’s regulatory jurisdiction encompasses derivatives (e.g., futures contracts), it has enforcement authority over fraud and manipulation in the spot markets (e.g., exchanging dollars for Bitcoin), which ultimately effect derivatives markets. (2) Around minute 9, he lays out a simple order of analysis for regulation of digital assets: first run the securities analysis. If it’s not a security, it’s probably a commodity.</p>
		CFTC Backgrounder on Oversight of and Approach to Virtual Currency Markets , January 4, 2018 (read first 1.5 pages; stop at “Virtual Currency Self-Certifications”).	<ul style="list-style-type: none"> • Be aware of CFTC jurisdiction over digital assets.
June 23 Optional Resources	SEC v. Telegram litigation	SEC’s Complaint	The Telegram litigation represents a relatively difficult and controversial application of the SEC’s approach to digital asset.
		SDNY Opinion	
		Coindesk Podcast, Making Sense of the SEC’s Case Against Telegram (April 12, 2020)	Insightful commentary on the Telegram case and its broader implications.
	Commodities Regulation	Agnosti, So, Vallabhaneni, Abedine & Boas Hayes, CFTC Jurisdiction Over Cryptocurrency – Implications for Industry Participants (Nov. 11, 2019)	This advisory prepared by White & Case attorneys provides an introduction and overview of the nature of conduct regulated by the CFTC.
June 25	Organizations & Governance	BLOCKCHAIN AND THE LAW pp. 131-136	<ul style="list-style-type: none"> • Be familiar with theoretical and experimental applications of blockchain technologies to corporate governance, as well as to new forms or organization and collective action. <p>---</p> <p>Blockchain technologies have been held out as both the enabler of incremental improvements in the</p>

			governance of existing organizations (e.g., corporate stock encoded with transfer restrictions) and a foundation of entirely new forms of organization (e.g., allowing people united by a common goal to pool and govern the deployment of their resources). In this final class, I encourage you to think creatively—and critically—about potential applications of these technologies to solve collective action challenges.
		SEC Report of Investigation on The DAO (July 25, 2017)	<ul style="list-style-type: none"> • Be familiar with theoretical and experimental applications of blockchain technologies to corporate governance, as well as to new forms or organization and collective action. <p>---</p> <p>While the DAO Report serves as a review of the SEC's approach to digital securities, I assigned the report primarily for its account of a real world experiment with a decentralized autonomous organization. What did the creators and participants in the DAO seek to accomplish? What lessons can be derived for the creation of new mediums of collective action?</p>
June 25 Optional Resources	Organizations Governance &	MakerDAO white paper	This white paper details how the decentralized MakerDAO community manages the Dai stablecoin. The Governance , Key External Actors , and announcement of the Dai Foundation , are particularly helpful for understanding how a project as complex as a stablecoin is managed by a decentralized open source community.