

Parsons School of Design
Art, Media, and Technology

Currents: Blockchain

PSAM 5600; CRN: 2342

SPRING 2018

Wednesdays, 3:50—6:30pm

Location: 6 East 16th Street, Room: 1206

Instructor: Daniel Sauter, Associate Professor

sauter@newschool.edu

Office hours by appointment via Starfish

Tuesdays/Thursdays, 11:30am—12pm

Course website: <https://canvas.newschool.edu/courses/1384286>

Course Description

Blockchains are distributed consensus mechanisms for building trust. Focusing on decentralized applications in a social context, this course surveys existing blockchain technologies and analyzes their peer structures and cryptographic principles. In data networks where accuracy and security determine the value of information, blockchain applications range from cooperative housing to medical records and government-issued digital identities—with great potential for creative applications. Popularized by cryptocurrencies, blockchain industries have rapidly evolved to form new organizational structures, economic paradigms, and services built on peer computation. The primary form of learning in this course is praxis. Participants will interact with blockchain platforms, and write smart contracts and decentralized applications. Extensive computer use and intermediate programming knowledge is required.

Learning Outcomes

By the successful completion of this course, students will be able to:

- Demonstrate knowledge of cryptocurrencies and blockchain technology.
- Conceptualize and implement code for smart contracts and decentralized applications.
- Demonstrate a deeper understanding of how to find, access, and filter relevant blockchain resources.

- Demonstrate the ability to create a web-based application interfaces that interact with blockchain networks.
- Understand and communicate the impact of blockchain technology in a social and business context.

Assessable Tasks

Coursework

Quantity in and of itself is not a marker of quality or growth. Students are expected to be producing work of high caliber. The work should articulate intended ideas and concepts and demonstrate an independence of thought and be original in nature. The execution of the work should effectively employ technical, formal, and/or conceptual strategies that effectively work together to communicate the intended meaning of the work.

Critiques, presentations, and meetings

Students are expected to possess a knowledge and understanding of their own work and the issues surrounding it and be able to articulate them. Participants are expected to be well prepared for all presentations and meetings. A lack of attendance and considered preparation overall will impact the final grade. As a contributing member of a collaborative academic group, students are expected to evaluate the work of other participants and express critique in a professional, constructive manner.

Assignments and projects

Thorough and on-time completion of all assignments is essential. Failure to meet deadlines, late or incomplete assignments will dramatically reduce your grade. Repeated or chronic lateness or incomplete assignments will result in a failing grade for the course.

Attendance

Grading is based on careful consideration all factors listed above. Please be aware that unexcused and/or excessive absence from class will also impact your grade. As a graduate student you are required to maintain a 3.0 GPA to remain in good standing.

Final Grade Calculation

Attendance & Participation	15%
Exercises	25%
Reading Discussion	10%
Final Project	40%
Documentation and reflection	10%
TOTAL	100%
Course Outline	

WEEK 1

1/24

Cryptocurrencies

- Syllabus Handed Out
- Screening: Banking on Bitcoin
- Assigned:
 - Reading 1: Beyond the Bitcoin Bubble
 - Class Reader (Reading 2-7): Artists re:thinking the blockchain
 - Research Discussion

WEEK 2

1/31

Blockchain Principles

- Distributed consensus
- Keys as identities
- Incentives
- Proof of Work
- Due:
 - Reading 1 (Discussion)

WEEK 3

2/7

Peer Networks

- Computing infrastructure
- Configuration
- Protocols
- Testing
- Due:
 - Reading 2 (Discussion)
- Assigned:
 - Exercise 1

WEEK 4

2/14

Ethereum

- Geth
- Accounts
- Wallets
- Mining
- Due:
 - Exercise 1

- Assigned:
 - Exercise 2

WEEK 5

2/21

Social Constructs

- Altcoins
- Workshop
- Due:
 - Reading 3 (Discussion)

WEEK 6

2/28

Smart Contracts

- Solidity
- Due:
 - Exercise 2
- Assigned:
 - Exercise 3

WEEK 7

3/7

Anonymity

- Limitations
- Zerocash
- Due:
 - Reading 4 (Discussion)

WEEK 8

3/14

Tokens

- Issue
- Transfer
- Due:
 - Exercise 3
- Assigned:
 - Exercise 4

Spring Break

WEEK 9

3/28

DApps #1

- Workshop
- Due:
 - Reading 5 (Discussion)
 - Exercise 4
- Assigned:
 - Exercise 5

WEEK 11

4/4

Databases

- Blockchain Characteristics
- Private Blockchain
- Due:
 - Reading 6 (Discussion)

WEEK 11

4/11

DApps #2

- Workshop
- Due:
 - Exercise 5
- Assigned:
 - Final Project

WEEK 12

4/18

Financialization

- Markets
- Exchanges
- Regulation
- Stakeholders
- Due:
 - Reading 7 (Discussion)

WEEK 13

4/25

DApps #3

- Workshop

WEEK 14

5/2

DApps #4

- Final Project Lab

WEEK 15

5/7

Final Presentation

- Due:
 - Final Project

Required Reading

- Catlow, Ruth, Marc Garrett, Nathan Jones, and Sam Skinner. *Artists re:thinking the blockchain*. England: Torque editions, 2017. (Excerpts)
- Johnson, Steven. "Beyond the Bitcoin Bubble." The New York Times. January 16, 2018. Accessed January 21, 2018.
<https://www.nytimes.com/2018/01/16/magazine/beyond-the-bitcoin-bubble.html>.

Materials and Supplies

- Amazon Web Services (AWS) Educate Login:
 - <https://msdv.signin.aws.amazon.com/console>
- AWS Cloud Membership

Resources

The university provides many resources to help students achieve academic and artistic excellence. These resources include:

- The University (and associated) Libraries: <http://library.newschool.edu>
- The University Learning Center: <http://www.newschool.edu/learning-center>
- University Disabilities Service: www.newschool.edu/student-disability-services/

In keeping with the university's policy of providing equal access for students with disabilities, any student with a disability who needs academic accommodations is welcome to meet with me privately. All conversations will be kept confidential. Students requesting any accommodations will also need to contact Student Disability Service (SDS). SDS will conduct an intake and, if appropriate, the Director will provide an academic accommodation notification letter for you to

bring to me. At that point, I will review the letter with you and discuss these accommodations in relation to this course.

Grading Standards

Undergraduate

A student's final grades and GPA are calculated using a 4.0 scale. Please note that while both are listed here, the 4.0 scale does not align mathematically with the numeric scale based on percentages of 100 points.

A [4.0; 95 – 100%]

Work of exceptional quality, which often goes beyond the stated goals of the course □

A- [3.7; 90 – <95%]

Work of very high quality □

B+ [3.3; 87 – <90%]

Work of high quality that indicates higher than average abilities □

B [3.0; 83 – <87%]

Very good work that satisfies the goals of the course □

B- [2.7; 80 – <83%] □ Good work □

C+ [2.3; 77 – <80%]

Above-average work

C [2.0; 73 – <77%]

Average work that indicates an understanding of the course material; passable

Satisfactory completion of a course is considered to be a grade of C or higher. □

C- [1.7; 70 – <73%]

Passing work but below good academic standing □

D [1.0; 60 – <70%]

Below-average work that indicates a student does not fully understand the assignments;

Probation level though passing for credit

F [0.0; 0 – <60%]

Failure, no credit

Graduate

A Work of exceptional quality

A- Work of high quality

B+ Very good work

B Good work; satisfies course requirements

Satisfactory completion of a course is considered to be a grade of B or higher.

B- Below-average work

C+ Less than adequate work

C Well below average work

C- Poor work; lowest possible passing grade

F Failure

GM Grade missing for an individual
Grades of D are not used in graduate level courses.

Grade of W

The grade of W may be issued by the Office of the Registrar to a student who officially withdraws from a course within the applicable deadline. There is no academic penalty, but the grade will appear on the student transcript. A grade of W may also be issued by an instructor to a graduate student (except at Parsons and Mannes) who has not completed course requirements nor arranged for an Incomplete.

Grade of Z

The grade of Z is issued by an instructor to a student who has not attended or not completed all required work in a course but did not officially withdraw before the withdrawal deadline. It differs from an "F," which would indicate that the student technically completed requirements but that the level of work did not qualify for a passing grade.

Grades of Incomplete

The grade of I, or temporary incomplete, may be granted to a student under unusual and extenuating circumstances, such as when the student's academic life is interrupted by a medical or personal emergency. This mark is not given automatically but only upon the student's request and at the discretion of the instructor. A Request for Incomplete form must be completed and signed by student and instructor. The time allowed for completion of the work and removal of the "I" mark will be set by the instructor with the following limitations:

Work must be completed no later than one year following the end of the class. Grades of "I" not revised in the prescribed time will be recorded as a final grade of "WF" (for Parsons and Mannes graduate students) or "N" (for all other graduate students) by the Office of the Registrar. The grade of "N" does not affect the GPA but does indicate a permanent incomplete.

Divisional, Program and Class Policies

- Responsibility

Students are responsible for all assignments, even if they are absent. Late assignments, failure to complete the assignments for class discussion and/or critique, and lack of preparedness for in-class discussions, presentations and/or critiques will jeopardize your successful completion of this course.

- Participation

Class participation is an essential part of class and includes: keeping up with reading, assignments, projects, contributing meaningfully to class discussions, active participation in group work, and coming to class regularly and on time.

- Attendance

Parsons' attendance guidelines were developed to encourage students' success in all aspects of their academic programs. Full participation is essential to the successful completion of coursework and enhances the quality of the educational experience for all, particularly in courses where group work is integral; thus, Parsons promotes high levels of attendance. Students are expected to attend classes regularly and promptly and in compliance with the standards stated in this course syllabus.

While attendance is just one aspect of active participation, absence from a significant portion of class time may prevent the successful attainment of course objectives. A significant portion of class time is generally defined as the equivalent of three weeks, or 20%, of class time. Lateness or early departure from class may be recorded as one full absence. Students may be asked to withdraw from a course if habitual absenteeism or tardiness has a negative impact on the class environment.

Whether the course is a lecture, seminar or studio, faculty will assess each student's performance against all of the assessment criteria in determining the student's final grade.

- Canvas

Use of Canvas may be an important resource for this class. Students should check it for announcements before coming to class each week.

- Delays

In rare instances, I may be delayed arriving to class. If I have not arrived by the time class is scheduled to start, you must wait a minimum of thirty minutes for my arrival. In the event that I will miss class entirely, a sign will be posted at the classroom indicating your assignment for the next class meeting.

- Electronic Devices

The use of electronic devices (phones, tablets, laptops, cameras, etc.) is permitted when the device is being used in relation to the course's work. All other uses are prohibited in the classroom and devices should be turned off before class starts.

- Academic Honesty and Integrity

Compromising your academic integrity may lead to serious consequences, including (but not limited to) one or more of the following: failure of the assignment, failure of the course, academic warning, disciplinary probation, suspension from the university, or dismissal from the university.

Students are responsible for understanding the University's policy on academic honesty and integrity and must make use of proper citations of sources for writing papers, creating, presenting, and performing their work, taking examinations, and doing research. It is the responsibility of students to learn the procedures specific to their discipline for correctly and

appropriately differentiating their own work from that of others. The full text of the policy, including adjudication procedures, is found at <http://www.newschool.edu/policies/#> Resources regarding what plagiarism is and how to avoid it can be found on the Learning Center's website: <http://www.newschool.edu/university-learning-center/student-resources/>

The New School views “academic honesty and integrity” as the duty of every member of an academic community to claim authorship for his or her own work and only for that work, and to recognize the contributions of others accurately and completely. This obligation is fundamental to the integrity of intellectual debate, and creative and academic pursuits. Academic honesty and integrity includes accurate use of quotations, as well as appropriate and explicit citation of sources in instances of paraphrasing and describing ideas, or reporting on research findings or any aspect of the work of others (including that of faculty members and other students). Academic dishonesty results from infractions of this “accurate use”. The standards of academic honesty and integrity, and citation of sources, apply to all forms of academic work, including submissions of drafts of final papers or projects. All members of the University community are expected to conduct themselves in accord with the standards of academic honesty and integrity. Please see the complete policy in the Parsons Catalog.

- Intellectual Property Rights: <http://www.newschool.edu/policies>