

HC 441: Is Bitcoin dead yet?
Fall 2024, TR 8:30 - 9:50, GSH 132

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Office hours: 1:30-2:30 monday, 10:30 -11:30 Thursday or by appointment (Fenton Hall)

Text:

- (Required) *Attack of the 50 foot blockchain*, by David Gerard.
- (Required) *Resistance money: a philosophical case for Bitcoin* by Andrew Bailey, Bradley Rettler and Craig Warmke
- (Required) *The Blocksize War*, by Jonathan Bier.
- Selected chapter from *Bitcoin: A Game-theoretic analysis*, (available as pdf on Canvas) by Micah Warren.
- "Fighting Monetary Colonialism with Open Source Code" by Alex Gladstein (available online). Possible other material that will be available online

Description:: Proponents of Bitcoin have hailed cryptocurrency as tool for resisting authoritarian governments, disrupting economic hegemony, defying censorship, banking the unbanked, disintermediating corrupt or self-dealing actors, and enabling powerful and useful technologies to bring third-world nations out of poverty and into prosperity. One of the goals of this class is to assess the feasibility of these claims, considering what is happening in the real world, and at the same time considering the underlying game theory. Bitcoin began 15 years ago after a whitepaper appeared describing innovative combination of Proof of Work, cryptography and game theory. We will explain Proof of Work and how it enables Bitcoin to function. Proponents of Bitcoin suggest that Proof of Work motivates the miners, who maintain the ledger, to be honest at all times. We will examine this more closely, looking at various aspect of this protocol, including stability (or lack thereof) against censorship, manipulation and fraudulent "double spend" or other attacks. We will discuss the suggested positive use cases for cryptocurrency as well as the not-so-positive use cases

Motivating question: In their book *Resistance Money* philosophers Bailey, Rettler and Warmke propose a "veil of ignorance" test as to whether Bitcoin is a good thing for humanity. There are many possible benefits brought by Bitcoin, but one has to wonder, to what degree has Bitcoin fulfilled these, and how possible is it to fulfill these promise in the future? Is Bitcoin anti-authoritarian or a convenient tool for authoritarians?

Final Writing Projects:

- Following the template provided in *Resistance Money* students will apply their own "veil of ignorance" test to Bitcoin. This will be a group project; Student will construct a variety of hypothetical humans and use these as a sample in evaluating the question.
- Individual writing: Short essay answering the course' title question.

Midterm Exam Week 8: Short answer essay and basic game theory. The point of the exam is so that I can fulfill my obligation of not letting anybody coast through the class using an LLM. Sample questions will be provided ahead of time.

Learning Outcomes:

- Develop an understanding of game theory underpinning Bitcoin and other cryptocurrencies
- Understand why some people want Bitcoin to work out (other than Number Go Up.)
- Identify the assumptions that must remain in place to hold Bitcoin together
- Apply critical thinking skills to arguments for and against blockchain technology
- Identify how Bitcoin is used today in practice
- Form original arguments which explore possible futures in which Bitcoin plays a role
- Construct a game tree and apply to basic games and situations involving conflicts of interest

Format and Workload: (See the course outline below) Most of the (80 minute) class periods will begin with a discussion of assigned reading material, followed by lectures on topics if needed to fill in gaps in the subject matter.

Reading responses are to be turned in on canvas by 8:10 am prior to class. I will print and distribute these randomly and anonymously, students are then to summarize and present the responses to the class, and they will be discussed.

Reading Responses: Less than a page: Provide a paragraph or two summary, and then a paragraph or two of your own response. This can be anything from agreement or disagreement with the arguments to stating points of confusion. Points of confusion are particularly valuable in stimulating class discussion. Obviously, there's no wrong answers, honesty is encouraged.

All assignments are to be turned in on canvas via upload: To keep it simple, late assignments do not receive credit.

Predicted reading schedule

week	Tuesday	Thursday
1	Introduction	Reading and response: Chapters 1,2 in Gerard and Chapter 1 in BRW
2	Reading and response: chs 3-6 in Gerard, Chapter 2 in BRW	Reading and response: chs 7-8 in Gerard, Chapter 3 in BRW
3	Reading and response: chs 9-11 in Gerard, Chapter 4 in BRW	Reading and response: Finish Gerard, Chapter 5 in BRW
4	Reading and response: Chapter 6 in BRW	Reading and response: Chapter 7 in BRW
5	Reading and response: Chapter 8-9 in BRW	Reading and response: Chapter 10 in BRW
6	Reading and response: finish BRW	topics TBD
7	Reading and response: chs 1-4 in Bier	Reading and response:e: chs 5-10 in Bier
8	Reading and response: chs 11-17 in Bier	Reading and response: chs 18- end in Bier
9	Chapter 13, 14, Warren	Thanksgiving
10	TBD	TBD

I will give due dates for drafts of the project as the course progresses, these should appear in Canvas

Attendance: Attendance is expected. We would like to take advantage of the small class to engage in productive discussions. Obviously if you are sick, we don't want to pass around COVID, please use your better judgment and keep me in the loop. The university attendance policy requires that I do not distinguish between excused and unexcused absences, excepting for certain classes of reasons: I can't distinguish between COVID and "sorry not feeling it today." So my policy is that 2 absences are freebies for the participation grade. Beyond that, for 3 absences you can do a makeup assignment: The first step of the makeup assignment is to email me before class and tell me how long you will expect to be absent, if you know. University policy forbids me from asking why you are absent, but does not forbid you from telling me. For more information and full list of absences exempt see

<https://provost.uoregon.edu/course-attendance-and-engagement-policy>

Grading:

- 20% Reading Responses
- 20% Class participation
- 10% Drafts of project
- 10% Peer response to project
- 25% Final Project (Part group, part individual)
- 15% Exam

Grading standards for responses:

- Turned in on-time
- Provides evidence of engagement with material

Grading standards for participation:

- Student is in class
- Student engages in conversation

Grading standards for projects and peer responses:

- A: Demonstrates a nuanced understanding of the material
- B: Demonstrates a good understanding of the material
- C: Demonstrates a satisfactory ability to engage with material.
- D: Rudimentary understanding but no grasp of nuances.
- F: Unable to describe basic concepts .

A grade of A+ will be given only in exceptional circumstances, if a student exceeds the expectations of the class.

Statement on expected classroom behavior: Students are expected to behave respectfully toward each other and toward the instructor during class time. This includes refraining from using cell phones during lectures.

Academic Disruption due to Campus Emergency: In the event of a campus emergency that disrupts academic activities, course requirements, deadlines, and grading percentages are subject to change. Information about changes in this course will be communicated as soon as possible by email, and on Canvas. If we are not able to meet face-to-face, students should immediately log onto Canvas and read any announcements and/or access alternative assignments. Students are also expected to continue coursework as outlined in this syllabus

or other instructions on Canvas. In the event that the instructor of this course has to quarantine, this course may be taught online during that time.

Academic Misconduct: The University Student Conduct Code, available at

<https://conduct.uoregon.edu>,

defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students obligation to clarify the question with the instructor before committing or attempting to commit the act. Additional information about a common form of academic misconduct, plagiarism, is available at

<https://researchguides.uoregon.edu/citing-plagiarism>.

Technology: Laptops, tablets, and phones are OK during class (sometimes they may even be useful), but please be respectful of everyone else. I might get salty if it seems like more attention is being paid to the devices. Sounds, irrelevant media, and other distractions are violations of course policy. Please also talk to me before using any recording devices to protect the privacy of everyone in the course.

Accessible Education: The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in disability-related barriers to your participation. You are also encouraged to contact the Accessible Education Center in 360 Oregon Hall at 541-346-1155 or uoac@uoregon.edu.

Accommodation for Religious Observances: The university makes reasonable accommodations, upon request, for students who are unable to attend a class for religious obligations or observance reasons, in accordance with the university discrimination policy which says “ Any student who, because of religious beliefs, is unable to attend classes on a particular day shall be excused from attendance requirements and from any examination or other assignment on that day. The student shall make up the examination or other assignment missed because of the absence. To request accommodations for this course for religious observance, visit the Office of the Registrar’s website

<https://registrar.uoregon.edu/calendars/religious-observances>

and complete and submit to the instructor the “ Student Religious Accommodation Request” form prior to the end of the second week of the term.

Basic Needs: Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their

performance in the course is urged to contact the Dean of Students Office (346-3216, 164 Oregon Hall) for support. This UO webpage includes resources for food, housing, healthcare, childcare, transportation, technology, finances, and legal support:

<https://blogs.uoregon.edu/basicneeds/food>.

Inclement Weather: It is generally expected that class will meet unless the University is officially closed for inclement weather. If it becomes necessary to cancel class while the University remains open, this will be announced on Canvas and by email. Updates on inclement weather and closure are also communicated in other ways described here:

<https://hr.uoregon.edu/about-hr/campus-notifications/inclement-weather>.

Mental Health and Wellness: Life at college can be very complicated. Students often feel overwhelmed or stressed, experience anxiety or depression, struggle with relationships, or just need help navigating challenges in their life. If you're facing such challenges, you don't need to handle them on your own—there's help and support on campus.

As your instructor if I believe you may need additional support, I will express my concerns, the reasons for them, and refer you to resources that might be helpful. It is not my intention to know the details of what might be bothering you, but simply to let you know I care and that help is available. Getting help is a courageous thing to do for yourself and those you care about.

University Health Services help students cope with difficult emotions and life stressors. If you need general resources on coping with stress or want to talk with another student who has been in the same place as you, visit the Duck Nest (located in the EMU on the ground floor) and get help from one of the specially trained Peer Wellness Advocates. Find out more at health.uoregon.edu/ducknest.

University Counseling Services (UCS) has a team of dedicated staff members to support you with your concerns, many of whom can provide identity-based support. All clinical services are free and confidential. Find out more at counseling.uoregon.edu or by calling 541-346-3227 (anytime UCS is closed, the After-Hours Support and Crisis Line is available by calling this same number).

Reporting Obligations: I am an assisting employee, not a designated reporter. For information about my reporting obligations as an employee, please see Employee Reporting Obligations on the Office of Investigations and Civil Rights Compliance (OICRC) website. Students experiencing sex or gender-based discrimination, harassment or violence should call the 24-7 hotline 541-346-SAFE [7244] or visit safe.uoregon.edu for help. Students experiencing all forms of prohibited discrimination or harassment may contact the Dean of Students Office at 541-346-3216 or the non-confidential Title IX Coordinator/OICRC at 541-346-3123. Additional resources are available at

<https://investigations.uoregon.edu/how-get-support>.