FI 4462/8462 – Blockchain and Business Disruption
Course Syllabus
Spring 2022

***NOTE**: This course syllabus provides a general plan for the course; deviations may be necessary.*

Instructor: Baozhong Yang, Ph.D.
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Office: RCB 1243, 35 Broad St.
Office Hours: By appointment
Course Section Number: 19288 - FI 8462 – 002 / 19844 - FI 4462 - 002
Meeting Time and Location: Wednesdays, 5:30pm-9:45pm, Buckhead Center 411
Jan 5, Jan 12, Jan 19, Jan 26, Feb 2, Feb 9, Feb 16, Feb 23
Note: Masks are ***strongly recommended*** for all classes for the protection of everyone's health.

Groupme: We will have a group on groupme for exchange of news and various discussion related to the class. Official announcements will still be sent via GSU email and iCollege.

Course Prerequisites :

Prerequisites: FI 8090 (Financial Data Analytics), MBA 8040 (Data Driven Decision Making), a similar course on data analytics or programming, or permission by the instructor.

Course Description:

Blockchain a transformative technology in finance and other businesses, including banking, payments, financing, securities exchanges, real estate, insurance, supply chains, healthcare, media, and other industries. This graduate course provides an introduction to blockchain technology and its disruptive roles in business. Students will have hands-on and problem solving experiences that can be useful in blockchain applications and innovation. Topics may include but are not limited to: fundamentals of blockchain technology, applications and use cases of blockchain technologies in different industries, implications of blockchain on business practice and regulation, blockchain and cryptocurrencies, initial coin offerings, decentralized financing, blockchain platforms (Ethereum, Hyperledger, Quorum, Corda, etc.), smart contracts, and web-based decentralized applications.

After successfully completing this course, students will be able to

- Understand recent developments in blockchain technologies and their impact on different industries
- Describe the technologies underlying cryptocurrencies and blockchains
- Design smart contracts and decentralized applications
- Engage in the process of blockchain innovation
- Learn to work with different blockchain platforms

Recommended Textbooks:

(Note: We will depend heavily on class slides, notes, and reading materials, but the following textbooks are recommended.)

Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction. by Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, Steven Goldfeder, Princeton University Press, ISBN-13: 978-0691171692. An online version of an earlier edition of the book is available here.

Mastering Ethereum: Building Smart Contracts and DApps. by Andreas M. Antonopoulos and Gavin Wood. O'Reilly Media. ISBN-13: 978-1491971949. An online version is available here.

COURSE SECTION POLICIES

Attendance Policy:

Each student is expected to attend **all** scheduled class meetings for the **entire duration** of the class meeting.

Any student who is absent from more than the equivalent of **two** class meetings (based on the 8-week full-mester schedule) will be dropped from the course by the instructor. Absences include the first week of class regardless of when a student registered for the course. The last day to withdraw and receive a "W" is the midpoint of the grading period (per GSU's academic calendar). If a student is withdrawn for excessive absences after the midpoint of the grading period, a final grade of WF will be assigned automatically.

Late or Make-up Work

No late or make-up projects or assignments will be allowed. Please hand in your projects/assignments before the due date.

iCollege:

Course materials, including slides, reading materials, problem sets, and solutions to quizzes or exams will be posted on the iCollege website of the course. The students are expected to check the iCollege website regularly and download the requisite materials.

Communication:

The students' GSU e-mail addresses (as shown in GoSOLAR) will be used as the primary means of communication. Students should therefore check their GSU e-mail accounts regularly. The instructor cannot reply to iCollege emails from their GSU email account.

ASSIGNMENTS AND EVALUATION CRITERIA

Grade Weights:

Presentation of papers	15%
Problem sets and quizzes	50%
Final group project	35%

Problem sets and final project will be completed on students' own laptop/desktop computers. Students are expected to spend substantial time on the projects, including but are not limited to

- Designing and implementing smart contracts
- Interacting with other students on markets for smart contracts
- Working on various blockchain applications.

We will use piazza for problem discussions as well as sharing any news/articles among the class (http://piazza.com/gsu/spring2021/fi84624462/home)

Problem Sets and Quizzes

Problem sets and quizzes will be given throughout the semester on iCollege. Your instructor will explain this component of your grade in detail during the first week of class.

Presentations of Papers and Articles

Academic research on blockchains has been growing very rapidly in the past two years, many of academic papers contain important insights and careful analysis. Each student should present at least one academic paper this semester. I will provide a list of papers and you can present papers that you're interested in. You can also pick papers outside my list but should seek my approval first. Each presentation including Q&A is expected to be around 20-30 minutes.

Final Group Project

The final group assignment asks groups of students to submit a paper that describes an innovative application of blockchain to business settings, provides business plans, and execution by using one of the blockchain platforms, such as Ethereum or Quorum. The students will also have the chance to present their paper at the last class. In this semester, we will ask students to research and explore extensions to existing blockchain applications.

The detailed requirements and deadlines for different stages of the final project are described in a separate document. Grades will be assigned according to the idea, coding, execution, writing, presentation, and peer evaluation of contribution to the project.

Grading Policy - Department of Finance:

In accordance with Departmental policy, for masters level courses (MBA and FI prefixed), it is expected that no more than 35 percent of the students in a given class section will receive a grade of A+, A, or A-. The majority of the remaining students are expected to receive grades of B+, B, or B-. Those students demonstrating significantly lagging performance shall earn grades at the C-level or lower as appropriate.

The finance department employs the +/- grading system. A grade of "C-" is considered a passing grade for this course and a "C-" is considered passing for prerequisite purposes for this course as well as for all finance electives. Refer to the University catalog for information concerning +/- grading and quality points for GPA calculations.

Academic Honesty:

The Department of Finance **adheres strictly** to the University's policy on academic honesty as contained in the **Academic Regulations** section of the University catalog. Any student found copying during exams or quizzes, signing someone else's name to the attendance list, using stored formulas in programmable calculators, using non-authorized formula sheets or other notes during exams, collaborating on and/or copying any in-class or take-home assignments, or the like will receive an F for the course and possibly be subject to additional University disciplinary action.

In general all university and college regulations concerning academic honesty shall apply. Students are expected to recognize and uphold standards of intellectual and academic integrity. The university assumes as a minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts.

It is particularly important that students read and understand the portions of the University Policy on Academic Honesty that relate to plagiarism, unauthorized collaboration, falsification, and multiple submissions. As mentioned before, the University Policy on Academic Honesty is explained in detail in the Student Handbook (available online at http://studenthandbook.gsu.edu) and the Student Code of Conduct (available online at http://codeofconduct.gsu.edu). This Policy represents a core value of the University. All members of the University community are responsible for knowing and abiding by its tenets. Students are expected to carefully review the online Policy prior to undertaking any research or other assignments.

Students are encouraged to discuss freely with faculty any questions they may have pertaining to the provisions of the Policy on Academic Honesty prior to submitting assignments. ***Lack of knowledge of the contents of the University Policy on Academic Honesty is not an acceptable defense to any charge of academic dishonesty.***

Disabilities or Special Needs:

Students who wish to request accommodation for a disability may do so by registering with the Office of Disability Services. Students may only be accommodated upon issuance by the Office of Disability Services of a signed Accommodation Plan and are responsible for providing a copy of that plan to instructors of all classes in which accommodations are sought. Please let your instructor know if you have a disability or special need that requires accommodation.

Miscellaneous Policies:

- Students are expected to be punctual for class –- being tardy means missing important course announcements and disrupting the learning process for others.
- Given the online nature of the class, there will be 10 to 20-minute breaks during classes to make the class less tiring. It will occur at regular intervals or based on the flow of the material.
- E-communication devices should not be used during class and must not be used during examinations.
- A computer/iPad or other digital devices should only be used during class to access course materials and to work on relevant course content
- All students are to conduct themselves consistent with University policies concerning behavior in the classroom and toward others in the University community. Students should consult the student handbook (available online at http://studenthandbook.gsu.edu) for details on these policies.

Student Assessment:

Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State and helping to improve this course for future students. Upon completing the course, please take time to fill out the online course evaluation.

Course Schedule
The follow schedule offers a tentative plan of an 8-week class. Deviations and revisions may be made at any time.

Class	Topics	Readings
Class 1	**Introduction to Blockchain Technology** Blockchain Disruption, Cryptographic Hash Functions, Digital Signature, Public and Private Keys, Blockchains, Consensus Mechanisms, Proof of Work, Proof of Stake	Narayanan et al., Chapters 1 to 5 Reading Materials on iCollege
Class 2	**Kickoff Meetings of Final Projects** **Blockchain Business Disruption** Benefits and costs of blockchain solutions, disruptive innovation, Use cases in Retail, Government, Real Estate, Finance, and other industries, Implications of blockchain technology **Student Presentations**	Reading materials on iCollege
Class 3	**Cryptocurrencies and Applications** Cryptocurrencies, ICOs vs Venture Capital, Ecosystem, Regulation, Scaling, Cryptoeconomics, Stable Coins, DeFi, Digital currencies. **Student Presentations**	Narayanan et al., Chapters 6-11 Reading materials on iCollege
Class 4	**Ethereum and Smart Contracts**: Ethereum platform and Smart Contracts, Decentralized Applications, DAOs, Other Blockchains for Smart Contracts, Basics of Solidity Language, Lab Time **Student Presentations**	Antonopoulos and Wood, Ch. 1-2 Bahga and Madisetti, Chapter 1 Reading materials on iCollege
Class 5	**Ethereum Programming** More Solidity Language, Tokens, Oracles, Lab Time **Student Presentations**	Antonopoulos and Wood, Ch. 7 Bahga and Madisetti, Chapters 3, 4 Reading materials on iCollege
Class 6	**Smart Contracts and Decentralized Applications** Design of smart contracts and applications, Javascript, HTML, Lab Time **Student Presentations**	Antonopoulos and Wood, Ch. 7, 10, 11 Bahga and Madisetti, Chapters 5 and 6 Reading materials on iCollege
Class 7	**Decentralized Applications, Other Blockchain Platforms** More Javascript tools, Corda, Hyperledger Fabric, Quorum, etc. Lab Time **Student Presentations**	Antonopoulos and Wood, Ch. 12 Reading Materials on iCollege

Class	Topics	Readings
Class 8	**Presentation of Final Projects**	