Course Title: An Introduction to Blockchain Technology and its Applications
Course Code: CS 03
Course Dates: February 3rd - March 16th (no class on Feb 17th - Presidents’ Day)
Instructor: Ahmed Banafa (Professor of Engineering, San Jose State University)

Tentative Weekly Outline:

Week 1 February 3rd

Introduction and class policies
Introduction to current centralized systems
Structure of Blockchain
Examples of Blockchain
Case Study & Discussion
Reading: Class Notes

Week 2 February 10th

Principles of Blockchain Technology
Nodes and different networks of Blockchain
Verification process
Proof of Stake vs. proof of work
Encryption
Case Study & Discussion
Reading: Class Notes
Recommended Readings “Secure and Smart IoT” Book: Ch.11

Week 3 February 24th (No Class Feb 17th Presidents’ Day)

Blockchain beyond the Hype
What is cryptocurrency?
Bitcoin, Ethereum
Smart Contract concept
Financial and non-financial applications of Blockchain

Please contact the Stanford Continuing Studies office with any questions
365 Lasuen St., Stanford, CA 94305
continuingstudies@stanford.edu
650-725-2650
Skills needed for Blockchain
Reading: Class Notes
Case Study & Discussion

Week 4 March 2nd

Cybersecurity and Blockchain
Advantages of using Blockchain in Cybersecurity
Disadvantages of using Blockchain in Cybersecurity
Case Study & Discussion
Reading: Class Notes
Recommended Readings “Secure and Smart IoT” Book: Ch.19

Week 5 March 9th

IoT and Blockchain Challenges and Risks
Scalability issues
Processing power and time Storage
Case Study & Discussion
Reading: Class Notes
Recommended Readings “Secure and Smart IoT” Book: Ch.12

Week 6 March 16th

Myths about Blockchain Technology
Blockchain and AI
Blockchain and Digital Transformation
Reading: Class Notes
Recommended Readings “Secure and Smart IoT” Book: Ch. 16,18
Research Paper or Exam

Grade Options and Requirements:

- No Grade Requested (NGR)
  - This is the default option. No work will be required; no credit shall be received; no proof of attendance can be provided.
- Credit/No Credit (CR/NC)
  - Students must attend at least 80% of class sessions.
- Letter Grade (A, B, C, D, No Pass)
  - Students must attend at least 80% of class sessions and complete a piece of written work (to be discussed further in class).

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*Please Note: If you require proof that you completed a Continuing Studies course for any reason (for example, employer reimbursement), you must choose either the Letter Grade or Credit/No Credit option. Courses taken for NGR will not appear on official transcripts or grade reports.