CIS700: Advanced Topics on Security Protocols and Blockchain Applications

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Learning Objectives

Students will be able to 1) Understand Ethereum internal mechanisms, 2) Analyze the security of Blockchain-based decentralized applications, 3) Design and develope Blockchain-based decentralized applications, 4) Understand and analyzing existing security protocols

Pre-requisite: 1) CIS600/FIN600, Blockchain and Cryptocurrency [ink] or 2) Completion of Blockchain labs [ink]

Texts

- Mastering Ethereum: Smart contract and decentralized applications, Andreas M. Antonopoulos, Gavin Wood [online book]
- Mastering Bitcoin: Programming the Open Blockchain, Andreas Antonopoulos, [online book]
- Information Security, Mark Stamp

Grading

Programming projects/paper presentations (50%), reports & lectures (50%).

- Late submission policy: 10% off within one day, 40% off within two days, 50% off within three days, 70% off within one week.
- All labs have to be finished individually; no collaboration will be allowed.

Course Schedule (Tentative)

- Ethereum source code reading
  - Reports & lectures
- Information-security protocols
  - Lectures
  - Research paper presentations
- Blockchain-based DApps
  - Programming projects