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CS5780: Advanced Information Security (Spring 2020)

Time and Location:

TH: 6:00 -- 8:45pm ETA 332

Instructor:

Huiping Guo
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323-343-6637
ET A318

Office hours: M/Tu: 10:00 -- 11:00am

Course Description:

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This is an advanced course on the Internet security. Topics covered a wide variety of security protocols including IPv6, Virtual Private Network, Secure Electronic Transaction (SET), Secure Election Protocols and advanced digital signatures etc.

Pre-requisites:

CS4780

Course goals:

At the end of this course, each student should be able to:

- understand advanced security protocols.
- understand digital signature schemes
- develop and implement a security protocol to solve real-world problem

Course topics:

- Review private and public key cryptography
- Web security
- Secure electronic transaction (SET)
- Digital cash
- IPV6 Security and Virtual Private Network
- Firewalls
- Denial-of-Service
- Public Key Infrastructure (PKI)
- Secure Election Protocols
- Secret Sharing Schemes
- Advanced Digital Signatures
- Secure Multiparty Communication

Class schedule:

Week	Date	Topics	Assignments	Projects
1	01/23	Lec1: Review 1		
2	01/30	Lec2: Review 2		
3	02/06	Lec2: Review 2 cont., Lec3: Review 3	Homework 1	Project 1
4	02/13	Lec3: Review 3 cont.		
5	02/20	Lect4: Review 4		
6	02/27	Midterm 1		
7	03/05	Lec4:Review 4 cont. Lec5: Key management		

Week	Date	Topics	Assignments	Projects
8	03/12	Canceled!		
9	03/19	Canceled!		
10	03/26	Lec6: SSL and SET Lec7: PGP and EVoting	Homework 2	Project 2
11	04/02	Spring Break		
12	04/09	project demo		
13	04/16	PKI, and SET	Homework 3	
14	04/23	PGP and ANDOS		
15	04/30	Lec8: Secret sharing Final review		
16	05/07	Project demo		
Final exam	05/14 5:00 -- 7:00pm			

Required textbook:

None

Grading policy:

- 2 programming projects (team work): 40%
- 1 midterm: 25%
- Final: 30%
- Attendance: 5%

A	[90, 100]
A-	[85, 90)
B+	[80, 85)
B	[75, 80)
B-	[70, 75)
C+	[65, 70)
C	[60, 65)