

## **ESE 360 Network Security Engineering Spring 2017**

**Instructor:** Carlos Fernando Gamboa

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**Office Hours:** Tuesdays 5:00 PM to 5:45 PM or by appointment.

**Office Location:** Room 258a, Light Engineering building

**Text:**

Cryptography Engineering: Design Principles and Practical Applications. N. Ferguson, B. Schneier, T. Kohno. Wiley; 1 edition (March 15, 2010)

**Grading:**

- Test 1 30%
- Test 2 30%
- Project 40%

**Week 1:**

Introduction to network topology  
Review computer network technologies  
Review OSI layered protocol

**Week 2:**

Introduction to Cryptography  
Block Cipher and Modes

**Week 3:**

Hash Functions and Message Authentication Codes

**Week 4:**

The Secure Channel

**Week 5:**

Implementing cryptographic systems (issues)

**Week 6:**

The prime numbers in the cryptography context

**Week 7:**

Public-key cryptography

**Week 8:**

Introduction to cryptographic protocols  
Key negotiation protocol

**Week 9:**

Implementing cryptographic systems (issues), continuation.

**Week 10:**

Centralized key servers.

Introduction of a Public-Key Infrastructure.

**Week 11:**

Implementation of the Public-Key Infrastructure.

**Week 12:**

Implementation issues of the Public-Key Infrastructure.

**Week 13:**

Storing secret information.

Society and networks security

**Week 14:**

Final

*Note: If you have a physical, psychological, medical or learning disability that may impact on your ability to carry out assigned course work, I would urge you to contact the staff in the Disabled Student Services office (DSS) 631-632-6748. DSS will review your concerns and determine with you what accommodations are necessary and appropriate. All information and documentation of disability are confidential.*