CIS 3319 Wireless Networks and Security

Spring 2012

Prerequisite: CIS 2107, 2166, and 2168   **Credits: 4**

Instructor: Dr. James Du

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Lectures: 3:30pm - 4:50pm, Tuesday and Thursday; Tuttleman 0001A

Office Hours: 2:30pm - 3:30pm, Thursday

Lab: 1pm - 2:50pm, Tuesday, Wachman 207

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Rationale: With today's increasing number of cyber attacks, security becomes a critical research issue and practical concern. Wireless networks and technologies have been widely used and we have seen tremendous growth of wireless in the recent years. Wireless networks and security are important and very timely topics for computer and information science students.

Educational Objectives: The students are expected to learn fundamental knowledge of cryptography, several types of important wireless networks, and security issues and defenses in the wireless networks and systems.

Textbook: Wireless Communications and Networks, Second Edition, William Stallings, ISBN-10: 0131918354, ISBN-13: 9780131918351, Prentice Hall.

Reference: William Stallings, Network Security Essentials: Applications and Standards, 4th Edition, 2010, Prentice-Hall. ISBN-10: 0136108059; ISBN-13: 978-0136108054

Topics - This course introduces essential wireless networks and security issues, including:

1. Introduction
2. Symmetric Encryption and Message Confidentiality
3. Public Key Cryptography
4. Wireless Local Area Networks
5. Wireless Cellular Networks
6. Mobile Ad hoc Networks
7. Wireless Sensor Networks
8. 4G Wireless Networks

Grading

Item	Weight
Homework	5 %
In-Class Exercises	10 %
Lab	15 %
Technical Paper Reading & Presentation	15 %
Midterm Exam	25 %
Final Exam	30 %

Technical Paper Reading & Presentation

Each student is required to read a recent research paper in the areas of wireless networks and security. The papers are from recent top wireless/ security conferences (such as ACM WiSec, IEEE Infocom, ACM MobiCom, and ACM MobiHoc) and journals. The paper list will be given to students for selections. The purpose of the Technical Paper Reading is to let students know the up-to-date research frontier in networking area. Each student needs to prepare a presentation and talk about the main content of the technical paper.

Course Policy

- Students are expected to attend all classes. If a class is missed for any reason, the student is responsible for finding out the material covered, any assignment and handouts given, and any other announcements made in the class (e.g., exam date).

- Homework and other assignments should be submitted at the beginning of the class on the corresponding due date. Late work will be penalized at 5% of its full credit per day. You may discuss homework assignments with classmates but all solutions must be original and individually prepared.

- No make-up exam will be allowed except in cases of emergencies for which prior permission of the instructor must be taken.

- Cheating in an exam or an assignment (project, homework) can result in a grade of F in the course.