ECE 332:559, (Advanced) Information and Network Security
Information Sheet and Syllabus
Fall 2007

- **Course Overview:** This course is an advanced graduate course that will cover a diverse set of topics related to information and network security. The class will cover a mix of mathematics and programming, covering aspects of security from theory to practice. This course is primarily aimed at giving graduate students the resources needed to follow the state of the art in security research. This does not mean that this class is a research class, but it does mean that advanced levels of independent study is required.

- **Course Specifics:**

  - Place and Time: Tu 5:00-8:00PM, at CORE 538.
  - Instructor: Wade Trappe. Phone: x50611 . Office: CORE 523.
    Email: trappe@winlab.rutgers.edu. Office Hours are Tu 3:30-5:00pm.
  - TA: None.

- **Handouts and Materials:** All course related materials will be available at the course website www.winlab.rutgers.edu/~trappe/AdvSec_F07.html. Homework assignments will be posted on this website and announced in class.

- **Prerequisites:** This class will rely heavily upon mathematics and computer programming skills. Students should have received a B+ or higher in either Stochastic Processes, Comm Nets I, Computer Networks I (CS), Algorithms, or Digital Communications, or should have my permission to take this class. Students should be willing to program, and comfortable with learning new programming languages.

- **Texts:** <u>Introduction to Cryptography with Coding Theory</u>, by Trappe and Washington, Prentice Hall, 2nd edition. <u>Introduction to Computer Security</u>, by Matt Bishop, Addison Wesley. Additional (recommended) book: <u>Applied Cryptography</u>, by Bruce Schneier, John Wiley and Sons.

- **Grading:** The grade for the class will be based upon regular quizzes, programming projects, and a term project.

  - Homework: (0%) There will be regular homework assignments. The homework assignments will not be due. Instead, students are expected to work on the homework independently. This is an advanced graduate class– students are expected to figure out the solutions for themselves.
  - Quizzes: (50%) There will be 7 short 20 minute quizzes, one a week starting the second week. These quizzes will typically have one or two short/quick problems on security, ranging from math to writing pseudocode for something, to discussing the merits of a scheme. After 7 quizzes, the pain will end and I will stop giving quizzes.
  - Small Computer Project1: (20% total) There will be one small programming assignment sometime during the course of the semester.
  - Term Report/Project: (30%) Students will break up into teams of no more than two members and will choose a research topic of their interest (related to security) with which to investigate, implement, and research. By October 10th, students are expected to have formed their teams and have had their topics approved by the instructor. At the end of the semester, the teams will present their projects to other teams. The report is expected to follow ACM/IEEE research paper format. As good security analysts, everyone is expected to ask questions!