

# ECE 332:519, (Advanced) Information and Network Security

## Information Sheet and Syllabus

Fall 2013

- **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 class will involve a research component, and advanced levels of independent study is required.
- **Course Specifics:**
  - Place and Time: TuTh 12:00-1:20PM, at Core501.
  - Instructor: Wade Trappe. Phone: 732-932-6857 ext 644 . Office: CORE 523, or WINLAB.  
Email: [trappe@winlab.rutgers.edu](mailto:trappe@winlab.rutgers.edu). Office Hours are Tu 11:00-12:00pm (Core), or generally find me at WINLAB.
  - TA: None.
- **Handouts and Materials:** All course related materials will be available at the course website:  
[www.winlab.rutgers.edu/~trappe/AdvSec\\_F12.html](http://www.winlab.rutgers.edu/~trappe/AdvSec_F12.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 (just ask me!) to take this class. Students should be willing to program, and comfortable with learning new programming languages.
- **Texts:** Introduction to Cryptography with Coding Theory, by Trappe and Washington, Prentice Hall, 2nd edition.
- **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 class– students are expected to figure out the solutions for themselves.
  - Quizzes: (45%) There will be 3 short 20 minute quizzes, every other week starting the Xth week (we will discuss this). 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 5 quizzes, the pain will end and I will stop giving quizzes.
  - Term Report/Project: (45%) Students will break up into teams of two or three members and will choose a research topic of their interest (related to security) with which to investigate, implement, and research. Students are expected to produce (by the end of the semester) new research and an accompanying report suitable for submission to an IEEE/ACM/IACR conference/journal. At the end of the semester, the teams will present their projects to other teams!
  - Evaluate and Trash: (10%) All students will critique one or two of the projects and write a short 1-page report critiquing the projects.

Final comments: No cheating, work hard, evil is good...