CS 6353
Unix and Network Security
Syllabus

Instructor: Ali Şaman Tosun
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Class Time: Tuesday, Thursday 6:00 pm - 7:15 pm
Class Location: TBA
Office Hours: Tuesday, Thursday 4:00 pm- 5:30 pm

Textbook: No required textbook
References:
1. Network Security Private Communication in a Public World
   Charlie Kaufman, Radia Perlman, Mike Speciner
2. Cryptography and Network Security
   William Stallings
3. Applied Cryptography
   Bruce Schneier
4. Hackers Beware
   Eric Cole
5. Hacking Exposed: Network Security Secrecs & Solutions
   Stuart McClure, Joel Scambray, George Kurtz
   Charles Pfeeger, Shari Pfeeger

Objectives: In this course you will learn
1. How hackers work and the tools they use
2. Terminology, underlying concepts and principles of network security
3. How to apply cryptographic tools to networking problems
4. How to do literature search, read research paper, write research paper

Prerequisites: Introductory computer networks course, programming experience in C, knowledge of Unix operating system

Grading: Based on Curve
Homeworks: 15% 4 Homeworks, lowest one dropped
Midterm 1: 20% Thursday, October 5
Midterm 2: 20% Thursday, November 16
Presentation: 10%
Project: 30% Tuesday, December 5
Attendance: 5%
**Topics:**
- Information Gathering about Networks
- Session Hijacking
- Buffer Overflow Attacks
- Denial of Service Attacks
- Viruses, Worms and Trojan Horses
- Firewalls
- Public Key Cryptography
- Symmetric Ciphers
- Cryptographic Hash Functions
- Digital Signatures
- IP Security
- Secure Sockets Layer
- Key Management
- IP Traceback
- Security in Sensor Networks
- Cloud Security
- Smartphone Security
- Other topics depending on availability of time

**Project:**
- Form groups of 2-4 students
- Find a relevant topic on network security
- Do literature search (find related material) 5%
- Read related material and implement a prototype
- Write a 10 page report in LATEX format 20%
- Presentation of the topic to class 5%

This Syllabus is provided for informational purposes regarding the anticipated course content and schedule of this course. It is based upon the most recent information available on the date of its issuance and is as accurate and complete as possible. I reserve the right to make any changes I deem necessary and/or appropriate. I will make my best efforts to communicate any changes in the syllabus in a timely manner. Students are responsible for being aware of these changes.