CS 6353
Unix and Network Security
Syllabus

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Class Time: Tuesday, Thursday 6:00 pm - 7:15 pm
Class Location: MH 3.03.14
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 Secrets & Solutions
   Stuart McClure, Joel Scambray, George Kurtz
   Charles Pfleeger, Shari Pfleeger

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.