CS:2620:0001
Networking and Security for Informatics

The University of Iowa
The College of Liberal Arts and Sciences
Department of Computer Science

Semester: Spring 2015
Location: W228 CB
Time: 1:30 pm - 2:20 pm MWF
Website: http://myweb.uiowa.edu/mshafiq/spring_2015_2620.htm

Instructor: M. Zubair Shafiq
Office Hours: 2:30 pm - 3:30 pm MWF (or by appointment) @ 201J MLH
Email: zubair-shafiq@uiowa.edu

Description

This course introduces students to the basics of computer networking and security. Topics include client-server socket model, flow and congestion control, routing, access networks, wireless and mobile networks, cloud and data center networks, streaming video, online social networks, symmetric and public key cryptography, botnets, Internet protocols (HTTP, IP, TCP, BGP), etc.

Prerequisites

The course does not assume any prior knowledge of computer networking or security, but requires prior programming experience in Python. Programming for Informatics (CS:2110) or an equivalent course is a prerequisite. This requirement will not be waived.

Format

Quizzes: There will be at least 1 quiz every week at the start of the lecture. Students who show up late will miss the quiz. No makeups.

Mini-Projects: There will be 4 programming mini-projects. These projects will require you to program in Python. Each project will last ~ 2 weeks. These are individual projects (i.e., no collaboration is allowed).

Final Exam: The final exam will be conducted at the end of the course.

Textbook (required readings every week)

Author: Kurose and Ross
Publisher: Pearson
Grading

CLAS recommended grade distribution - A: 18%, B: 36%, C: 39%, D: 5%, F: 2%, Average: 2.63. The course uses the +/- grading system.

- Quizzes: 40%
- Mini-projects: 40% (4 mini-projects, 10% each)
- Final Exam: 20%

Course Policies

- Attendance: Attendance is not required. But you will lose credits for missed quizzes. No makeups.
- Late Submission Policy: There are no late mini-project submissions unless you demonstrate in advance (and I agree) that a significant life-event prevents you from an on-time submission or if you have a documented emergency.
- Laptop/Cell phone: You are not allowed to use laptop/cell phones during the lectures.

Tentative Schedule

- Week 1: Background and basics
- Week 2: Introduction to the Internet
- Week 3: Application Layer
- Week 4: Application Layer
- Week 5: Transport Layer
- Week 6: Transport Layer
- Week 7: Network Layer
- Week 8: Network Layer
- Week 9: Link Layer
- Week 10: Link Layer
- Week 11: Security
- Week 12: Security
- Week 13: Video Streaming
- Week 14: Wireless Networks
- Week 15: Cloud and Data Center Networks

Administrative Home

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Academic Policies Handbook at http://clas.uiowa.edu/students/handbook.

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences (Operations Manual, III.15.2, k.11).
Accommodations for Disabilities

A student seeking academic accommodations should first register with Student Disability Services and then meet with the course instructor privately in the instructor's office to make particular arrangements. See www.uiowa.edu/~sds/ for more information.

Academic Honesty

All CLAS students or students taking classes offered by CLAS have, in essence, agreed to the College's Code of Academic Honesty: "I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (CLAS Academic Policies Handbook).

CLAS Final Examination Policies

The final examination schedule for each class is announced by the Registrar generally by the fifth week of classes. Final exams are offered only during the official final examination period. No exams of any kind are allowed during the last week of classes. All students should plan on being at the UI through the final examination period. Once the Registrar has announced the date, time, and location of each final exam, the complete schedule will be published on the Registrar's web site and will be shared with instructors and students. It is the student's responsibility to know the date, time, and place of a final exam.

Making a Suggestion or a Complaint

Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic Policies Handbook).

Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Department of Public Safety website.