CS 408 - Computer Networks

Spring 2025 - 3 credits

Course Description

This is a 3-credit introductory computer networks course specializing on data-link and upper layer. Physical layer will not be examined in detail. Applications and protocols will be emphasized.

Prerequisites

CS 204 – Advanced Programming. Although Math 203 is not a formal prerequisite, probability knowledge is partially needed.

Course Staff

Instructor: Özgür Erçetin
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Teaching Assistants:

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Course Schedule

Lectures: Wednesdays 11:40 am - 1:30 pm FENS L045, Fiydays 8:40 am - 9:30 am FENS L045
Labs:

- Section A: Fiydays 2:40 pm - 4:30 pm FENS L045
- Section B: Thursdays 4:40 pm - 6:30 pm FENS L045

Note: No labs in the first and second week. Announcements will be made about their start date.

Course Materials

Main Text: Computer Networking with Internet Protocols and Technologies, William Stallings (out of print)

Alternative Text: Computer Networking: A top-down approach featuring the Internet, Kurose and Ross, 6th / newer ed.

References:

- Computer Networks, 4th or newer edition, Andrew Tanenbaum
- Computer Networks and Internets, Douglas Comer, 5th or newer ed.
- Data and Computer Communications, Stallings, 6th or newer edition

Course Outline

There will be 4 labs planned, spread across multiple weeks, with some spanning multiple sessions. Lab activities will take place over a total of approximately 6 weeks, with additional time reserved for recitations, project-related sessions, and extra lectures if needed. The labs will provide hands-on experience in:

- Python programming: Multithreading and GUI (Lab 1.1)
- Socket programming: Using Python (Lab 1.2 and Lab 1.3)
- Packet capturing & analysis: Using Wireshark (Lab 2)
- Network configuration: Cisco Labs (Lab 3.1 - lecture/demo, Lab 3.2 - in-lab performance)
- LAN design & IP subnetting: Practical implementation (Lab 4)

Important Note: The labs will not be direct applications of the lectures, but they are designed to be complementary to the course topics. Labs are not intended as recitations to help students get higher marks in the exams. Instead, they focus on practical skills development in networking, programming, and system configuration.

Tentative Grading (subject to change)

- Midterm exam 30% (closed everything)
- Final exam 35% (closed everything)
- Homework, project and labs 35% (individual weights will be determined later)

Important Dates

- Midterm Exam: To be determined later (probably around 10th week).
- Final Exam: as scheduled by SR
- Homework, project and lab deadlines will be specified separately.

Plagiarism

Plagiarism will not be tolerated. The sanction for plagiarism in projects, assignments, and lab work is a penalty of -100. For exams, any type of cheating—including having an electronic device other than a calculator in proximity—will be reported to the Dean's Office for disciplinary action.

Communication

- Announcements will be made via SUCourse+ and email. You can also join the class WhatsApp group using the following link: `https://chat.whatsapp.com/DpZ7PMYV2zm02RW4QCpQlz`.
- All materials will be posted on SUCourse+ after being covered in class