

Dongseo University

Division of Computer Engineering

Computer Network

Instructor(s): Hyotaek Lim
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Classroom:
Class Time:
Office Hours: by appointment

Course Description:

This course introduces the concepts and programming of computer communication networks, their protocols, and applications. Topics to be covered include overview of network architectures, applications, network programming interfaces (e.g., sockets), transport, routing, and data link protocols, addressing, local area networks, network security, network management, and emerging high-speed networks. Examples will be drawn primarily from the Internet (e.g., TCP, UDP, and IP) protocol suite.

Course Goals & Objectives:

At the conclusion of this course, the successful (passing) students will be able to

- Understand the concepts of computer networks, their protocol and applications
- Make some basic computer network programs such as Socket.

Course Outline:

- **Week 1:** Class overview, Computer Networks and the Internet (Internet architecture, protocols, circuit- and packet-switching)
- **Week 2:** Computer Networks and the Internet (access networks, physical media, delay and loss, layered architecture)
- **Week 3:** Application Layer (Web, HTTP, FTP)
- **Week 4:** Application Layer (Email, DNS, p2p file sharing)
- **Week 5:** Socket Programming
- **Week 6:** Transport Layer (intro, Multiplexing/demultiplexing, UDP, Principles of reliable data transfer)
- **Week 7:** Connection-oriented transport: TCP
- **Week 8:** Mid-Term Exam
- **Week 9:** Network Layer (intro, routing principles, routing algorithms)
- **Week 10:** Network Layer (IP)
- **Week 11:** Network Layer (hierarchical routing, RIP, OSPF, BGP)
- **Week 12:** Data Link Layer (intro, error detection/correction, multiple access protocols)
- **Week 13:** Data Link Layer (link-layer addressing, Ethernet, hubs and switches)
- **Week 14:** Wireless and Mobile Networks (intro, wireless links, 802.11 wireless LANs)
- **Week 15:** Final Exam

Textbook(s)

- Required: *Computer Networking: A Top Down Approach Featuring the Internet(5th Edition)*, J.F. Kurose and K.W. Ross, Pearson.
- Recommended:

Class Website: e-Class

Course Assignments & Grading:

- Exams: Midterm and Final exams
- Project: Team based project
- Assignments: Writing and programming assignments
- Grading: Midterm exam: 30%, Final exam: 30%, Assignment: 20%, Project: 10%, Attendance: 10%

Grading Policies:

- Late Work: All assignments must be submitted on time. Late assignments will not be accepted.
- Make-Ups: There will be no make-ups given for any of the assignments in this course.

Course Policies:

- Attendance: Students are required to attend more than 90% of classes
- Academic Misconduct Policy: We really do not expect it, so please do not disappoint us! However, any form of cheating will be penalized and may result in failing the course. All students should read, understand, and abide by the DSU Academic regulations