E2 232 August 2:1

TCP/IP Networking

Instructor

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Teaching Assistant

Email:

Department: Department of Electronic Systems Engineering

Course Time:

Lecture venue:

Detailed Course Page:

Announcements

Brief description of the course

The course is open to anyone interested in TCP/IP Networking. The emphasis is on in-depth understanding of protocols and technology. There is a very significant lab component that offers students exposure to actual hands-on networking, including client-server programming and kernel compilation, as well as familiarity and experience with several very useful networking tools and utilities.

Prerequisites

None

Syllabus

IP addressing, IP header; subnetting and supernetting, CIDR, routing table, Ethernet, ARP; Serial links, PPP, ICMP, UDP, TCP: header, connection establishment, ISN, half close, delayed acks, header flags, TCP state transitions, sliding window, Slow Start, Congestion Avoidance, Fast Retransmit, Fast Recovery; DNS; multicasting, IGMP; IEEE 802.11 wireless LANs; Bridges, L2 switches, Spanning Tree algorithm, VLANs; Mobile IP; Private IP; NAT; DHCP; http; routing protocols: RIP, OSPF, BGP; IPv6

Course outcomes

Students acquire detailed understanding of how TCP/IP networks operate.

Discussions of concepts and notions in class and a variety of lab exercises enable students to grasp the essentials, and prepare them to solve practical networking problems.

Grading policy

10% for lab assignments, 20% for mid-term 1, 20% for mid-term 2, 10% for lab final examination, 40% for final examination.

Assignments

Resources

TCP/IP Illustrated, vol 1 by W. Richard Stevens, RFCs from the IETF repository.