
Communications networks A

Finalità

The course offers an introduction to the networking, presenting the concept of network architectures and protocols, Local and Wide Area Networks (LAN/MAN), Internet and its evolution towards new generation networks.

Programma

1) Introduction to telecommunication networks

Introduction

network taxonomy

2) Architectures and protocols

layered architectures, internetworking

communication functions and protocols (multiplexing, framing, addressing and switching/routing, error control, flow control, congestion control, etc.)

examples of protocols

OSI model and Internet

Local Area Networks (LAN)

switched Ethernet, Gigabit Ethernet

WirelessLAN (IEEE 802.11)

4) Internet

architecture

Internet protocol (IP)

routing protocols

transport protocols (UDP/TCP)

Internet evolution, IPv6, mobility

Attività d'esercitazione

Examples and exercises on various topics.

Modalità d'esame

Two examination tests (midterm and final), or writing/oral exam.

Testi consigliati

[1] A. S. Tanenbaum, "Computer Networks", 4th Edition, Prentice Hall, 2003

[2] D. E. Comer, "Internetworking with TCP/IP Vol.1: Principles, Protocols, and Architecture", 4th Edition, Prentice Hall, 2000

[3] J. F. Kurose, K. W. Ross, "Internet and Computer Networks", 2nd Edition (2003), McGraw-Hill