

## Telekomunikacije, 1. Semester, Omrežja 1

### Networks I

The course provides an overview of the building blocks, protocols and basic concepts of networking. It explores the fundamentals of circuit and packet-switched systems and signalization, provides an introduction to access and transmission technologies (SDH, PDH, ATM, FR, Ethernet, xDSL, FTTx, DOCSIS), up-to-date connection methods, basic network building blocks as well as network, transmission and application protocols (DNS, FTP, HTTP, Telnet) and internet system services. Topics also include: basic network concepts (links, hierarchy, network elements, terminal equipment); packet and switch commutation (ways of forwarding and routing data flows, principle of connectivity); addressing (at different layers of the OSI model); classic signalling (SS7, DSS1); synchronization and telecommunication systems; network elements of circuit switched systems (PSTN and ISDN); IP network protocol (addressing, routing, DHCP, NAT, ARP, tools); IPv6 network protocol (addressing, routing, DHCPv6, tools); network elements of packet-switched (switch, router, firewall); and measurements (performance, throughput, protocol analysis).

1. Martin P. Clark: Data Networks, IP and the Internet: protocols, design and operation, Wiley (2003), ISBN 0-470-84856-1
2. Douglas Comer: Internetworking with TCP/IP Vol.1: Principles, Protocols, and Architecture (4th Edition), Prentice Hall; 4th edition (January 2000), ISBN 0130183806