

Study guide

ETSF10/ETSF05(2nd part) Internet Protocols

Forouzan, *Data Communications and Networking*, 5th edition, McGraw-Hill, ISBN 978-007131586-9.

This study guide shows the sections of the book which are part of the course. The course does not cover all of the contents in the textbook, but rather what we consider *The Important Stuff* within this field.

There are two study alternatives:

Included: This is part of the course, and you must be able to account for it.

Extended reading: This is part of the course, but if you only aim for mark 3 on the course you need not be able to account for it.

Included

| Topic | Subtopics | Chapters | Course section |
|---|--|---|----------------|
| Performance | Throughput Latency/Delay Bandwidth Delay Product Packet Loss Congestion Control | 3.6, 18.3 | 3 |
| Network Layer: Forwarding and IPv4 | IPv4 addresses (Classful, Classless) ICMPv4 Forwarding of IP packets Label switching, MPLS | 18.4.2 - 18.4.3 19.2 18.5 - 18.5.1 18.5.2 - 18.5.3 | 2 |
| Network Layer: IPv6 | The IPv6 protocol ICMPv6 Transition IPv4 -> IPv6 | 22 | 2 |
| Routing | Structure of a Packet switch Unicast Routing Protocols (RIP, OSPF, BGP) Multicast routing, IGMP NAT & Firewalls | 8.4.2 ¹⁾ 20.3 21 18.4.5, 32.4 | 1 |
| VPN | IPsec PPTP, L2TP, SSTP, OpenVPN | 32.1 - 32.1.2 ³⁾ Wikipedia | 2(?) |
| Transport Layer Protocols ²⁾ | UDP TCP (Services and features, Flow Control, Error Control, Congestion Control) | 24.1 - 24.3 18.3.4 | 2 |
| DNS DHCP | | 26.6 18.4.4 | 3 |
| Application Layer: Streaming Multimedia | Real Time Video RTP/RTCP | 28.3 - 28.4.3 | 3 |
| Quality of Service (QoS) | Flows Scheduling Traffic Shaping | 30.1 - 30.2 | 3 |

1) Up to and including introduction to Switching Fabric.

- 2) Repeat Go-Back-N in chapter 23
- 3) In chapter 32.1.2 only the very first paragraph; Security functions are covered in EIT060 Computer Security

Extended reading

| Topic | Subtopics | Chapters |
|--------------------------------------|-------------------|-----------------|
| Network Layer | Mobile IP | 19.3 |
| Transport Layer/Streaming Multimedia | STCP | 24.4 |
| Application Layer | FTP, Mail, TELNET | 26.2 - 26.4 |
| Network Management | SNMP | 27.1 – 27.2 |
| Streaming Multimedia | SIP, H.323 | 28.3.1 - 28.3.2 |
| Quality of Service | IntServ, DiffServ | 30.3 – 30.4 |