Study Guide Internet Protocols ETSF10 & ETSF05 2nd part

William Stallings "Data and Computer Communications", 10th ed, International ed, Pearson, ISBN 978-1-292-01438-8

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. Also, some functions/protocols are not too deeply described in the textbook; these parts are covered by extra material found on moodle or links found on the course page.

This document is subject to change.

Part 1:

Topic	Subtopic	Chapter (Stallings)
Routing	Inside a router Routing in packet switched networks RIP OSPF, BGP Address aggregation, longest match Multicasting (IGMP, PIM)	See lecture slides ch 19.1 pp615-620, lecture slides See lecture slides, links on course web, extra material on moodle ch 19.3, lecture slides, links on course web, extra material on moodle See lecture slides, extra material on moodle ch 21.1, lecture slides

Part2:

Topic	Subtopic	Chapter (Stallings)
Network Layer	Network Address Translation IPv4, ICMPv4 IPv6, ICMPv6, NDP, IPv4 to IPv6 transition VPN Fragmentation and MTU	See lecture slides, links on course web, extra material on moodle Ch 14.3, lecture slides See lecture slides, links on course web, , extra material on moodle Ch 14.5 Ch 14.2, 14.4
Transport Layer	TCP, UDP TCP Congestion Control	Ch 15 Ch 20.5

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Part 3:

Topic	Subtopic	Chapter (Stallings)
DNS DHCP		Ch 24.2 Ch 21.5
Application Layer: Streaming Multimedia	Real Time Traffic RTP; RTCP	Ch 25.1 Ch 25.4
Performance & QoS	Packet size: Comparision Circuit and Packet Switching Bandwidth-Delay Product ARQ performance issues Congestion Control (Performance, QoS, Traffic Shaping) Internetwork QoS IP Performance Metrics	Part of ch 9.5 See lecture slides, extra material on moodle, links on course web ch 16.3 Ch 20 (Intro -- ch 20.4), see lecture slides Ch 22 Intro, Ch 22.1) Ch 22.6