

## Recommended reading for written part of exam

### WLAN

1. Basic in radio communication: frequency spectrum, bandwidth, channel separation, carrier frequency, noise, signal attenuation, Co-channel interference
2. Modulation methods (CDMA, OFDM, FHSS, DSSD)
3. Standards IEEE and 802.11
4. Security in WLAN -WEP, WPA, WPA2, AES, 802.1x/EAP framework,
5. Antennas
6. WLAN topology (SSID, Mesh-network, Ad-hoc, Roaming, VLAN)
7. QoS in WLAN

### IP-telephony

1. Analog-to-Digital Voice Encoding
2. Nyquist Theorem
3. Codecs
4. Voice Quality Measurement
5. Connecting router to a Phone line (FXO, FXS, T1/E1)
6. VoIP Signaling and Call Control
7. Gateway protocols (H323, MGCP, SIP)
8. Three models of QoS (Best-effort, IntServ, DiffServ)
9. QoS DiffServ implementation (classification, marking, congestion management, congestion avoidance, policing and shaping, Link Efficiency)
10. Applying QoS in the Campus
11. QoS in the WAN