**Network Administration**

1. Network administration. Standards. Network administration models.  
2. Domain naming system (DNS). Structure. Name servers. Name resolution process.  
3. DNS- Resource records.

4. Configure a DNS server. Zone files.  
5. Automatic setting of IP configuration. DHCP protocol. Principle of operation. Configuring a DHCP server.  
6. HTTP protocol. Types of headers. Basic methods.  
7. Apache HTTP server. Architecture.  
8. Access control to directories in Apache using the htaccess file. User authentication.   
9. Proxy servers. Transparent proxy. HTTP proxy.  
10. E-mail servers. Principle of functioning of e-mail. Components. SMTP protocol.  
11. POP, IMAP protocols. Principle of operation. Server states.  
12. Control of access to services. Superserver inetd. Windows Firewall.  
13. Network security. Risk Management. Security threats. Viruses, worms and trojans horses.  
14. Network attacks. Defense against attacks.  
15. Access control to network under Linux - Netfilter. IPtables.  
16. Firewalls. Build firewall architectures.  
17. Intrusion Detection Systems (IDS).  
18. Intrusion Prevention Systems (IPS). Signatures.  
19. Network Address Translation (NAT).  
20. Active Directory (AD) service. Logical and physical structure.  
21. Domain controllers. Scheme. Global catalog. Operation of AD.

**Sources:**

1. Венета Алексиева, Христо Вълчанов, Администриране на локални и Интернет мрежи. Ръководство за лабораторни упражнения, изд. Университетско издателство при ТУ-Варна, 2019, стр.132, 978-954-20-0797-5
2. Brotherston L. Defensive Security Handbook: Best Practices for Securing Infrastructure, O'Reilly Media, 2017, ISBN-10: 1491960388
3. Nemeth E., G. Snyder, T. Hein, B. Whatey. UNIX and Linux System Administration Handbook. Addison-Wesley Professional, 2017, ISBN-10: 0134277554.

**Exam:**

**Test with open questions and tasks up to 100 points.**