

Discipline	NETWORK ADMINISTRATION	code: 41	winter semester
Specialty	Computer Science and Technologies		
ECTS credits: 7	Form of assessment: exam		
Lecturer	Assoc. Prof. Veneta Aleksieva, PhD Room 207-4 E Phone: +359 52 383 439 E-mail: valeksieva@tu-varna.bg		
Department	Computer Science and Engineering		
Faculty	Faculty of Computing and Automation		
<p>Learning objectives:</p> <p>The course "Network Administration" aims to give practical knowledge in the field of operating principles, methods of building, management and protection of local (LAN) and global (WAN) computer networks. Questions related to the use of network features, protocols, and tools on Linux, Cisco IOS, and Windows Server operating systems to build, configure and maintain local and Internet networks are addressed. Serious attention is paid to setting up and maintaining the base services in computer networks (DNS, E-mail, WEB, etc.). Particular attention is paid to the problems associated with network security, network attacks and the protection of network communications.</p> <p>The discipline is based on its predecessors: "Computer Communications Fundamentals", "Operating Systems", "Computer Networks", "Multiuser Operating Systems" and others. The course has initial links with the diploma project.</p>			
CONTENTS:			
Training Area		Hours lectures	Hours seminar exercises
Network administration. Standards. Network administration models		2	2
Internet naming system (DNS). Structure. Name Servers. Name resolution process		2	2
DNS. Resource records. Types. Purpose		2	2

Configuring a DNS server. Zone files	2	2
Automatic IP configuration. DHCP protocol. Principle of operation. Configuring DHCP server	2	2
HTTP protocol. Types of headers. Basic methods. HTTP Apache server. Architecture	2	2
Control access to Apache directories using the htaccess file. User authentication. Redirecting	2	2
Principle of e-mail. Components. SMTP, POP, IMAP protocols. Principle of operation. Server states	2	2
Control of access to services. Inetd super server. Windows Firewall	2	2
Network security. Risk management. Threats to security. Viruses, worms and Trojans	2	2
Types of network attacks. Protection against attacks	2	2
Traffic control. Linux packet filtering - Netfilter. IPtables	2	2
Network protection approaches. Building firewall architectures	2	2
Intrusion detection and protection systems (IDS, IPS)	2	2
Network addresses translation (NAT)	2	2
TOTAL: 60 h	30	30