Discipline	COMPUTER NETWORKS code: 35	**summer semester**
Specialty	Computer Systems and Technologies	
ECTS credits: **5**	Form of assessment: ongoing assessment	
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	

Learning objectives:

The main objective of the course is to provide the students with basic knowledge about the purpose and operation of network devices, configuration of end devices and network devices. The students receive a basic knowledge of computer network performance; they differentiate different types of network devices, and know how to develop network solutions. The course makes the students familiar with current standards and modern terminology related to computer networks. In the context of local and Internet networks, security, performance, reliability and fault-tolerance are considered. They are familiar with the main diagnostic tools for monitoring and troubleshooting networking issues. Initial knowledge for building a physical topology and skills for designing logical topology of computer networks is given.

The discipline is related to next subjects "Administration of Local and Internet Networks" and "Computer and Network Security".

CONTENTS:		
Training Area	Hours lectures	Hours seminar exercises
OSI and TCP / IP model. Network protocols and communications. Rules of the communication. Collision and Broadcast Domains	2	2
Network layer. Addressing of networks. Types of IP addresses. IPv4 and IPv6 protocols.	2	2
Subnetting. Fixed length and variable length subnet masking (VLSM).	3	3
Protocols, running on the network layer. Router architecture.	3	3
Routing table. Access to local and remote network resources (direct and indirect routing).	3	3
Distance Vector Routing Protocols. RiPv1, RIPv2, RIPng.	3	3
Link-state Routing protocols. OSPF	3	3
Transport layer. TCP and UDP protocols.	3	3

Application layer. Application protocols and services - DHCP, NAT, FTP, HTTP, SMTP, DNS.	2	2
Configuring and testing the local network. Selection of devices, protocols. Managing of configuration files.	2	2
Wireless Technology. Home networking technologies. VPN	2	2
Network and Information Security. Types of threats.	2	2
TOTAL: 60 h	**30**	**30**