COURSE UNIT DESCRIPTION

Course unit title	Course unit code
Computer Networks for Professionals	**ITKTP**

Lecturer(s)	Department where the course unit is delivered
Coordinator: Eduardas Kutka	Department of Computer Science II Institute of Computer Science Faculty of Mathematics and Informatics Vilnius University

Cycle	Type of the course unit
First	Optional

Mode of delivery	Semester or period when the course unit is delivered	Languages of instruction
Face-to-face	6th semester	Lithuanian and English

Prerequisites
Computer networks

Number of ECTS credits allocated	Student's workload	Contact hours	Individual work
5	140	64	76

Purpose of the course unit: programme competences to be developed

Generic competences to be developed
- Ability to resolve problems *(BK4)*
- Ability to use information and communication technologies *(BK5)*

Subject-specific competences to be developed
- Ability to evaluate the need of the organization for hardware based on working principles of different computer architectures and various devices *(DK7)*
- Ability to ensure information security using management and security mechanisms of operating systems and software *(DK8)*

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Ability to define problems of complex computer networks and find solutions to the problems	Literature reading, Analysis of examples, Consulting Preparation of project, Preparation of presentation, Problem solving.	Project, and Defense of the Project, Chapter Tests, Final exam.
Ability to distinguish positive and negative aspects of product support, installation, compatibility with other equipment, know components of the hardware		
Ability to distinguish modern computer network components and their operating principles		
Ability to operate and manage a complex computer network and evaluate organization's needs for new hardware, new routing protocols (OSPF, EIGRP, BGP) or new addressing scheme (IPv6).		
Ability to test and troubleshoot computer network equipment, write requirements specification		
Implement infrastructural information security measures		

Course content: breakdown of the topics	Individual work: time and assignments

	Lectures	Tutorials	Seminars	Laboratory work (LW)	Consultations during LW	Contact hours	Individual work	Assignments
Packet Forwarding, STP, MSTP, VLAN, Etherchannel	3			3	2	6	3	Reading literature, self-assignments Chapter Tests, Project, Project Presentation, Final exam
IR Routing, EIGRP	3			3		6	6	
OSPF, OSPFv2	3			3		6	6	
BGP	4			4		8	6	
Multicast, QoS	2			1	2	3	6	
IP Services, Overlay tunnels	2			2		4	4	
Wireless infrastructure	3			2		5	2	
Troubleshooting Wireless Connectivity	2			2		4	2	
Enterprise Network Architecture	2			2	2	4	6	
Infrastructure Security	2			1		3	3	
Virtualization, Network Programmability and Automation	2			1		3	3	
Project	4			8	5	12	18	
Preparation for Final exam and taking Final exam							11	
Total	**32**			**32**	*11*	**64**	**70**	

Assessment strategy	Weight %	Deadline	Assessment criteria
Chapter tests	20%	during the semester	Tests in virtual learning environment. Complete or partial correctness of responses.
Project, Project Presentation	40%	during the semester	Compliance with the requirements, the ability to argue decisions, answering questions, make minor changes. Middle sized project can be made by one student; large project can be made by 2-4 student groups.
Final exam	40%	during session	Tests in virtual learning environment. Complete or partial correctness od responses

Author	Publishing year	Title	Issue No or volume	Publishing house or Internet site
Required reading				
Brad Edgeworth, Kevin Wallace, David Hucaby, Jason Gooley, Ramiro Garza Rios	2019	CCNP and CCIE Enterprise Core ENCOR 350-401 Official Cert Guide		Cisco Press
Optional reading				
Andrew S. Tanenbaum, David J. Wetherall.	2021	Computer networks	6th ed.	Pearson
Wendell Odom	2010	CCNP ROUTE 642-902 Official Certification Guide		Cisco Press
Wendell Odom	2010	CCNP SWITCH 642-813		Cisco Press

		Official Certification Guide		
Wendell Odom	2010	CCNP TSHOOT 642-832 Official Certification Guide		Cisco Press