MODULE DESCRIPTION

Module title	Module code
Computer Networks II	

Lecturer(s)	Department where the module is delivered
Coordinator: Eduardas Kutka **Other lecturers:**	Department of Computer Science II Faculty of Mathematics and Informatics Vilnius University

Cycle	Type of the module
First	Optional

Mode of delivery	Semester or period when the module is delivered	Language of instruction
Face-to-face	5th semester	Lithuanian and English

Prerequisites
Prerequisites: Computer networks

Number of credits allocated	Student's workload	Contact hours	Self-study hours
5	130	66	64

Purpose of the module: programme competences to be developed

Purpose of the module – to increase knowledge of computer networks. Learn to design, maintain and troubleshoot small computer networks.

Generic competences:

- Communication and collaboration *(GK1).*
- Life-long learning *(GK2).*

Specific competences:

- Knowledge and skills of underlying conceptual basis *(SK4).*
- Technological and methodological knowledge and skills, professional competence *(SK6).*

Learning outcomes of the module: students will be able to	Teaching and learning methods	Assessment methods
An ability to present, information, ideas, problems, and suggested solutions about small computer networks convincingly in official and second (foreign) language for specialists and non-specialists in written and verbal form.	Literature reading, Analysis of examples, practical tasks, Consulting	Practical exercises, self-tests and self-assignments, partial exams (tests), Final exam.
An ability independently to acquire new knowledge, methodologies, and tools and to apply them in practice when implementing small computer networks.		
An ability to apply computer science theory, and algorithmic principles in development of computer network systems.		
An ability to combine theory and practice in designing, maintaining and troubleshooting of small computer networks, evaluating the technological, economic, social and legal context.		
Ability to use existing computer network hardware and software, identify, understand and apply the newest technologies in planning, designing and implementing small computer networks.		

Content: breakdown of the topics	Contact hours							Self-study work: time and assignments	
	Lectures	Tutorials	Seminars	Practice	Laboratory work (LW)	*Tutorial during LW*	**Contact hours**	**Self-study hours**	**Assignments**
Building a Small to Medium-Sized Network	2				2		**4**	**4**	
DHCP	2				2		**4**	**4**	
The Spanning Tree Protocol	2				2		**4**	**4**	
Link Aggregation	2				2	*6*	**4**	**4**	
Troubleshooting Layer 2 Issues	2				2		**4**	**4**	
Implementing EIGRP	2				2		**4**	**4**	Reading literature, self-tests and self-assignments, practical exercises, partial exam, Final exam.
Implementing Multi-Area OSPF	3				3		**6**	**6**	
IOS File Management	2				2		**4**	**4**	
Connecting to the WAN	2				2	*6*	**4**	**4**	
Configuring Serial Connections	2				2		**4**	**4**	
Broadband Solutions	2				2		**4**	**4**	
Securing Site-to-Site Connectivity	3				3		**6**	**6**	
Monitoring the Network	2				2		**4**	**4**	
Troubleshooting the Network	2				2		**4**	**4**	
Network Architectures	2				2		**4**	**4**	
Taking Final exam							**2**		
Total	**32**				**32**	*12*	**66**	**64**	

Assessment strategy	Weight %	Deadline	Assessment criteria
Self-tests	20%	During the semester, two weeks after theme is presented	Tests in virtual learning environment. Closed type questions, complete or partial correctness of responses.
Two practical exercises	30%	8th and 16th week of semester	Compliance with the requirements, the ability to argue decisions, answering questions, make minor changes
Partial exam (test)	25%	In the middle of semester	Test in virtual learning environment. Closed type questions, complete or partial correctness of responses
Final exam	25%	During exam session	Test in virtual learning environment. Closed type questions, complete or partial correctness of responses

Author	Publishing year	Title	Number or volume	Publisher or URL
Required reading				
Cisco	2013	CCNA Routing & Switching elektroninė medžiaga.		http://netacad.com
Wendell Odom	2013	Cisco CCNA Routing and Switching 200-120 Official Cert Guide Library		Cisco Press

Recommended reading				
N. Olifer, V. Olifer	2007	Computer Networks: Principles, Technologies and Protocols for Network Design,		Wiley Publishing, Inc.
Duglas E. Comer.	2009	Computer networks and internet	5th ed.	Pearson Prentice Hall
Andrew S. Tanenbaum, David J. Wetherall.	2011	Computer networks	5th ed.	Pearson, 2011