



## MODULE DESCRIPTION

Module title	Module code
Computer Networks for Professionals I	

Lecturer(s)	Department where the module is delivered
<b>Coordinator:</b> Eduardas Kutka	Department of Computer Science II Faculty of Mathematics and Informatics
<b>Other lecturers:</b>	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	6th semester	Lithuanian and English

Prerequisites
<b>Prerequisites:</b> Computer networks, Computer networks II

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 and maintain routing in the complex computer networks and to solve problems.		
<b>Generic competences:</b> <ul style="list-style-type: none"> <li>• Communication and collaboration (<i>GK1</i>).</li> <li>• Life-long learning (<i>GK2</i>).</li> </ul>		
<b>Specific competences:</b> <ul style="list-style-type: none"> <li>• Knowledge and skills of underlying conceptual basis (<i>SK4</i>).</li> <li>• Technological and methodological knowledge and skills, professional competence (<i>SK6</i>).</li> </ul>		
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 complex computer network routing convincingly in official and second (foreign) language for specialists and non-specialists in written and verbal form.	Literature reading, Analysis of examples, Consulting Preparation of project, Preparation of presentation, Problem solving	Defense of Project, Tests, Topic Presentation, Final exam.
Recognition of the need for, and engagement in life-long learning using literature and other information sources.		
An ability independently to acquire new knowledge, methodologies, and tools and to apply them in practice implementing routing in complex computer networks.		
An ability to apply computer science theory, and algorithmic principles in routing development of complex computer networks.		
An ability to combine theory and practice in designing, maintaining and troubleshooting of routing protocols in complex 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 routing protocols in complex 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
Routing Services in complex Networks	2				2		4	2	
Configuring the EIGRP	5				4	2	9	5	
Configuring the OSPF	5				4		9	5	
Manipulating Routing Updates	4				3	2	7	3	
Implementing Path Control	3				3		6	3	
Implementing a BGP Solution for ISP Connectivity	5				4		9	5	
Implementing Routing Facilities for Branch Offices and Mobile Workers	4				3	2	7	4	
Implementing IPv6 in the Enterprise Network	4				3		7	4	
Project					6	4	6	31	
Taking Final exam							2		
<b>Total</b>	<b>32</b>				<b>32</b>	<b>10</b>	<b>66</b>	<b>64</b>	

Assessment strategy	Weight %	Deadline	Assessment criteria
3 Tests (virtual learning environment)	25%	8 <sup>th</sup> , 12 <sup>th</sup> , 15 <sup>th</sup> week of the semester	Tests in virtual learning environment. Complete or partial correctness of responses.
Project	30%	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.
Topic presentation	10%	during the semester	Ability to prepare slides, fluent language, answering questions
Final exam	35%	during session	Tests in virtual learning environment. Complete or partial correctness of responses

Author	Publishing year	Title	Number or volume	Publisher or URL
<b>Required reading</b>				
Wendell Odom	2010	CCNP ROUTE 642-902 Official Certification Guide		Cisco Press
<b>Recommended reading</b>				
Andrew S. Tanenbaum, David J. Wetherall.	2011	Computer networks	5th ed.	Pearson, 2011
Scott Empson, Hans Roth	2011	CCNP ROUTE Portable Command Guide		Cisco Press
Diane Teare	2011	Implementing Cisco IP Routing (ROUTE) Foundation Learning Guide: Foundation learning for the ROUTE 642-902 Exam		Cisco Press.