

## DESCRIPTION OF THE STUDY SUBJECT

### Title

**DATA TRANSFER AND MANAGEMENT TECHNOLOGIES**

### Scope of the subject

Semester	Mode of studies	Structure*				Total number of hours	Number of credits	Group and type of subjects
		L	Lw	C	S			
I	Full-time	12	32	8	54	106	4	Compulsory subject of the study field
II	Part-time	6	18	28	54	106	4	

\*L – lectures, PS – practical activities, seminars, LW – laboratory work, PR – practice, CP – course paper, C – consultations, S – self-study

### Aim of the subject

To know data transfer and management technologies, operation principles, standards of operating systems and computer networks, to be able to select their application solutions appropriate for implementation of multimedia solutions, to apply data security solutions.

### Necessary background knowledge for studying the subject

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### Content of the subject

Title of the topic and description of the content	Number of contact hours			S	Total number of hours
	L	Lw	C		
1. The concept of data transfer and management technologies. Computer network, its concept, data transfer principles. Operating system, its concept, data management principles.	2	-	-	-	2
Laboratory work: to harmonise the subsystem of the network of operating using IPv4 / IPv6 addressing.	-	5	2	8	15
<b>Preparation for the defence of laboratory works and their defence No. 1</b>		1		2	3
2. Standards, protocols of computer networks. Local, global, and wireless networks. OSI, TCP / IP. Network and Internet servers, the concept of network operating system. Cloud computing solutions, virtual operating systems.	3	-	-	-	3
Laboratory work: to prepare a web server / virtual operating system for work, to load data and combine services.	-	7	2	10	19
<b>Preparation for the defence of laboratory works and their defence No. 2</b>		1		2	3
3. Management technologies, users, access rights, services of Windows family operating systems.	2	-	-	-	2
Laboratory work: preparation of Windows operating system for work, software management.	-	5	1	8	14
<b>Preparation for the defence of laboratory works and their defence No. 3</b>		1		2	3
4. Management technologies, users, software management, charging management of Linux / Unix family operating systems. Management technologies of operating systems of mobile devices.	3	-	-	-	3
Laboratory work: preparation of mobile devices of Linux/Unix/ operating system for work, software adjustment.	-	5	1	8	14
<b>Preparation for the defence of laboratory works and their defence No. 4</b>		1		2	3
5. Secure data transfer technologies, application of cryptography, electronic signature, VPN and other solutions. Technologies for ensuring security of the operating system, redundant copies of data and other solutions. Electronic document, intellectual property, certificates.	2	-	-	-	2
Laboratory work: to ensure safe operation of the operating system /data transmission over the network , to prepare a data backup / to safely transfer it over the network.	-	5	2	10	17
<b>Preparation for the defence of laboratory works and their defence No. 5</b>		1		2	3
<b>Total number of hours</b>	<b>12</b>	<b>32</b>	<b>8</b>	<b>54</b>	<b>106</b>

**Assessment of learning outcomes**

Ten-point criteria-based assessment system as well as cumulative assessment using individual cumulative index (ICI) are applied. The overall grade is the sum of grades for the defence of laboratory works (DLw) multiplied by weighted coefficients.  
 ICI = 0,2 DLw 1 + 0,2 DLw 2 + 0,2 DLw 3 + 0,2 DLw 4 + 0,2 DLw 5.

**Recommended literature**

Key literature						
No.	Year of publishing	Author(s) and title of the publication	Publishing house	Number of copies and/or internet link		
				ŠSC library	Other premises	Other libraries *
1.	2015	D. Mažeika Kompiuterių tinklai. Paskaitų medžiaga.	VGTU DMA	http://dma.vgtu.lt/tinklai.html		
2.	2013	Leonavičienė B. Windows 8	Smaltija	1	-	-
3.	2012	Sarafinienė N., Lagzdinytė-Budnikė I. ir kt. Operacinių sistemų architektūros	Technologija	5	-	6
4.	2011	Skersys G. Informacijos sauga.	Technologija	https://www.ebooks.ktu.lt/eb/237/informacijos-sauga/		
5.	2008	Plėštys R., Rimkus D., Lagzdinytė I., Sarafinienė N. Tinklų sauga	Technologija	https://www.ebooks.ktu.lt/eb/432/tinklų_sauga/		
Additional literature						
No.	Year of publishing	Author(s) and title of the publication	Publishing house and/or internet link			
1.	2016	Kaklauskas L. Nuotolinis kursas „Duomenų perdavimo ir valdymo technologijos“	http://moodle.svako.lt			
2.	2011	Tanenbaum A.S. Computer networks	D.J. Wetherall. Boston: Pearson			
3.	2011	Štītis D. Elektroniniai nusikaltimai: metodinė priemonė	Mykolo Romerio universiteto leidybos centras			

\* ŠAVB – Šiauliai Region Povilas Višinskis Public Library, ŠU – library of Šiauliai University

**Required material resources and their short description**

- **Equipment (devices):** computers (16 units), computers connected to the local network and connected to the Internet, multimedia projector, printer, interactive board.
- **Software:** Windows 10 or later, operating systems administration tools (System tools) Hyena, Fixwin, hwinfo and the like, web filtering tools: K9 Web Protection, squid and the like.

**The description prepared by:**

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