

Óbuda University John von Neumann Faculty of Informatics		Institute for Cyber-Physical Systems		
Name and code: Network Technologies I. NIXHT1CBNE				Credits: 4
Computer Science and Engineering BSc programme				2021/22 year II. semester
Subject lecturers: Dr. Anna Bánáti, Dr. Eszter Kail				
Prerequisites (with code):		Computer Networks		
Weekly hours: 3	Lecture: 2	Seminar.: 0	Lab. hours: 1	Consultation: 0
Way of assessment:	mid-term tests, oral and laboratory exam			
Course description:				
Goal: To get familiar with LAN and WAN technologies, to plan, configure and manage small-to-medium size networks and to implement basic security considerations.				
Course description: The subject introduces the design goals of LAN and WAN networks, the typical methods of designing, the best practices of design and operating methods (including the systematic design methods e.g. : Cisco hierarchical network design, possibility and benefits of simulations, the hardware and software tools and devices of implementing, configuring, fine-tuning, troubleshooting, and implementation in practice, the implementation, operation, and network management issues of a designed network.				

Lecture schedule									
<i>Education week</i>	<i>Topic</i>								
1.	Protocols, Layered architecture of communication, Physical layer								
2.	Data-link layer								
3.	Network layer								
4.	Transport layer								
5.	Routing basics								
6.	Holiday								
7.	Advanced routing								
8.	Basic switching								
9.	Advanced switching								
10.	Application layer, DHCP								
11.	Holiday								
12.	STP								
13.	Summary								
14.	Test								
Midterm requirements									
<table> <tr> <th><i>Education week</i></th><th><i>Topic</i></th></tr> <tr> <td>7.</td><td>Test 1</td></tr> <tr> <td>13.</td><td>Test 2</td></tr> <tr> <td></td><td></td></tr> </table>		<i>Education week</i>	<i>Topic</i>	7.	Test 1	13.	Test 2		
<i>Education week</i>	<i>Topic</i>								
7.	Test 1								
13.	Test 2								

Final grade calculation methods

Achieved result	Grade
89%-100%	excellent (5)
76%-88<%	good (4)
63%-75<%	average (3)
51%-62<%	satisfactory (2)
0%-50<%	failed (1)

Type of exam

Lab activity & oral examination

Type of replacement

Once on the 14th week.

References

Mandatory: Lecture notes, Cisco Network Academy course material

Recommended: Tannenbaum A. S.: Computer Networks, 3rd extended edition, Prentice Hall-Panem, 2013

Anurag Kumar; D. Manjunath; Joy Kuri: Communication Networking - Analytical approach; Elsevier; 2004

Larry L. Peterson; Bruce S. Davie: Computer networks - a systems approach; Elsevier; 2007
TCP/IP Tutorial and Technical Overview; IBM; 2006