



MODULE DESCRIPTION

Module code	full-time studies:	Z-ZIP1-E-721
	part-time studies:	Z-ZIPN1-E-721
Module name	Computer networks and network applications	
Module name in Polish	Sieci komputerowe i aplikacje sieciowe	
Valid from academic year	2023/2024	

MODULE PLACEMENT IN THE SYLLABUS

Field of study	MANAGEMENT AND PRODUCTION ENGINEERING
Level of education	1st degree
Studies profile	General
Form and method of conducting classes	Full-time and Part-time
Specialisation	Computer Science for Management and Modelling
Unit conducting the module	Department of Computer Science Technologies
Module co-ordinator	Małgorzata Lucińska, PhD
Approved by:	Dariusz Bojczuk, PhD, DSc

MODULE OVERVIEW

Type of subject / group of subjects	Specialist subject
Module status	Non-compulsory
Language of conducting classes	English
Module placement in the syllabus - semester	Semester VII
Initial requirements	No requirements
Examination (YES/NO)	NO
Number of ECTS credit points	2

Method of conducting classes		Lecture	Classes	Laboratory	Project	Other
Per semester	full-time studies:	15		15		
	part-time studies:	9		9		

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning outcomes
Knowledge	W01	A student has advanced knowledge of the types of computer networks and the OSI model of the network communication process, including detailed knowledge of network protocols 2-4 network layers.	ZIP1_W04
	W02	Has advanced knowledge of network configuration, including interfaces of network devices, i.e. routers and switches.	ZIP1_W05
	W03	Has knowledge of the configuration of network servers and network services such as DHCP, DNS and the configuration of web service applications, SFTP.	ZIP1_W04
Skills	U01	Can configure the network layer in the network client computer, i.e. in OS. Windows, and can configure network interfaces on active devices.	ZIP1_U01
	U02	Can install and perform basic configuration of services for Windows Server.	ZIP1_U01
	U03	He can install and perform basic configuration of web sites, SFTP.	ZIP1_U01
Social competences	K01	The student understands the need for constant replenishment of knowledge in the area of computer networks and understands the need to care for security in computer networks.	ZIP1_K01

TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	Types of computer networks, OSI model, network communication processes. Network protocols; selected network support programs in Windows environment. Selected issues of local network configuration - division into subnetworks. Communication in wide area networks (WAN) Examples of routing protocols. Configuration of routers and switches - on the example of CISCO devices.
Laboratory	Configuration and operation of a computer network client in Windows environment, network service programs in Windows operating system. Familiarization with network listening programs. Network operation on a client computer. Networking in Windows environment, FTP and DNS service servers. LAN configuration (computer-to-computer connections, switch-based networking). Configuration of connections between LANs. WAN configuration (interfaces and static routing). Configuration of routing protocols.

METHODS OF ASSESSING TEACHING RESULTS

Symbol	Methods of checking the learning outcomes (select X)					
	Oral exam	Written exam	Test	Project	Statement	Other
W01			X			
W02			X			
W03			X			
U01					X	
U02					X	
U04					X	
K01						X

FORM AND CONDITIONS OF PASSING

Form of classes	Form of credit	Passing conditions
Lecture	Credit with grade	Obtaining at least 50% of test points during the class.
Laboratory	Credit with grade	Positive evaluation of the reports on the performance of laboratory activities.

STUDENT WORKLOAD

Balance of ECTS points												
No.	Type of student's activity	Student's workload										Unit
		full-time					part-time					
		Lc	C	Lb	P	O	Lc	C	Lb	P	O	
1.	Participation in the activities	15		15			9		9			h
2.	Other (consultation, exam)	2		2			2		2			h
3.	Number of hours of a student's assisted work	34					22					h
4.	Number of ECTS credit points which are allocated for assisted work	1,4					0,9					ECTS
5.	Number of hours of a student's unassisted work	16					28					h
6.	Number of ECTS credit points which a student receives for unassisted work	0,6					1,1					ECTS
7.	Work input connected with practical classes	25					25					h
8.	Number of ECTS credit points which a student receives for practical classes	1,0					1,0					ECTS
9.	Total number of hours of a student's work	50					50					h
10.	Punkty ECTS za modul <i>1 ECTS=25 hours</i>	2										ECTS

LITERATURE

1. Kurose J., Ross K. (2017), *Computer Networking. A top-down approach*. Pearson Education, Inc.
2. Tannenbaum A., Wetherall D. (2013), *Computer networks*, Pearson Education, Inc.