

### 1.3. Module/ course form

To be completed by Course Team	Module name : <b>NETWORK SECURITY MANAGEMENT</b>					Module code:	
	Course name: <b>Network security management</b>					Course code:	
	Faculty: <b>Institute of Applied Informatics</b>						
	Field of study: <b>Informatics</b>						
	Mode of study : <b>Full-time</b>		Learning profile: <b>Practical</b>			Speciality:	
	Year/ semester:		Module/ course status: <b>mandatory</b>			Module/ course language: <b>Polish/English</b>	
	Type of classes	lecture	lessons	lab	project	tutorial	other (please specify)
	Course load	<b>15</b>		<b>30</b>			

Module/ course coordinator	<b>Katarzyna Wasielewska, PhD</b>
Lecturer	<b>Katarzyna Wasielewska, PhD</b>
Module/ course objectives	The main goals of this module are: <ul style="list-style-type: none"> <li>- to meet basic security problems in computer networks,</li> <li>- to find out how we can increase security level</li> <li>- to learn how we can verify potential threats</li> <li>- to secure the computer network</li> </ul>
Entry requirements	Passed modules: Computer networks, Routing and switching

<b>LEARNING OUTCOME</b>		
Nr	LEARNING OUTCOME DESCRIPTION	Learning outcome reference
	<b>Knowledge</b>	
1	Knows the types of threats occurring in computer networks	K_W16, K_W17, K_W18
2	Knows ways to prevent network security threats	K_W16, K_W17, K_W18
3	Knows the basics of ICT networks, including security aspects	K_W08
	<b>Skills</b>	
4	Identifies possible threats in a computer network	K_U10, K_U14
5	Uses selected methods and hardware and software measures increasing the level of network security	K_U10, K_U14
6	Develops a security policy	K_U03

7	Performs tasks related to the maintenance of network devices that perform security-related tasks	K_U22
	<b>Social competence</b>	
8	Effectively communicates with supervisors and colleagues to jointly ensure the security of information resources in a computer network	K_K04

<b>CURRICULUM CONTENTS</b>	
<b>Lecture</b>	
<ol style="list-style-type: none"> <li>1. Modern threats in computer networks</li> <li>2. Basics of network security</li> <li>3. Threats on the computer network</li> <li>4. The magic cube of cyber security</li> <li>5. Malwares</li> <li>6. Basics of cryptography</li> <li>7. Access control</li> <li>8. Data integrity, digital signature, digital certificates</li> <li>9. Database integrity</li> <li>10. High availability systems (2x)</li> <li>11. System and device security</li> <li>12. Cyber security domains</li> <li>13. How to secure the wired and wireless LAN?</li> <li>14. Test</li> </ol>	
<b>Laboratory</b>	
<ol style="list-style-type: none"> <li>1. IOS user security</li> <li>2. Role-based access control mechanism</li> <li>3. Identification and configuration of privilege levels</li> <li>5. Access control lists</li> <li>6. Logging, time synchronization</li> <li>7. AAA configuration</li> <li>8. SSH configuration</li> <li>9. VPN configuration</li> <li>10. Radius configuration</li> <li>11. Network security policy</li> </ol>	

Basic literature	CCNA Security, J. Stuppi, O Santos, Cisco Press, 2017
Additional literature	

Teaching methods	Lecture, exercises in the laboratory	
	Assessment method	Learning outcome number
	Lecture - test	01, 02, 03
	Laboratory – test and work in the class	04, 05, 07, 08
	Homework	06

Form and terms of an exam	<p>Laboratory: activity, work with tasks; test. One absence is allowed.</p> <p>Lecture: test</p> <p>The requirement of passing the course is to obtain a positive grade first for the laboratory and then for the lecture. The cumulative final grade of the subject consists in 50% of the lecture grade and 50% of the laboratory grade</p>
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<b>STUDENT WORKLOAD</b>		
	Number of hours	
	In all	including practical
Participation in lectures	15	0
Independent study of lecture topics	5	0
Participation in tutorials, labs, projects and seminars	30	30
Independent preparation for tutorials*	40	40
Preparation of projects/essays/etc.*		
Preparation/ independent study for exams	10	
Participation during consultation hours	2	2
Other – exam		
<b>TOTAL student workload in hours</b>	<b>102</b>	<b>72</b>
<b>Number of ECTS credit per course unit</b>	<b>4 ECTS</b>	
Number of ECTS points assigned to the scientific discipline	Technical informatics and telecommunications <b>4 ECTS</b>	
Number of ECTS credit associated with practical classes	<b>2,8 ECTS</b>	
Number of ECTS for classes that require direct participation of professors	<b>1,8 ECTS</b>	