DESCRIPTION OF THE COURSE OF STUDY

Course code	0719-2ID-F42-BSK	
Name of the course in	Polish	***Bezpieczeństwo Systemów Komputerowych***
	English	***Computer Systems Security***

1. LOCATION OF THE COURSE OF STUDY within the system of studies

1.1. Field of studyData engineering	Data engineering
1.2. Mode of study	full-time studies
1.3. Level of study	first degree engineering studies
1.4. Profile of study*	all-academic
1.5. Person/s preparing the course description	Paweł Kankiewicz
1.6. Contact	pawel.kankiewicz@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE course of study

2.1. Language of instruction	English
2.2. Prerequisites*	operating systems, computer networks

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. **Form of classes**		lectures, laboratory classes
3.2. **Place of classes**		classes in the UJK teaching room/computer lab
3.3. **Form of assessment**		pass with a grade and written examination
3.4. **Teaching methods**		verbal methods (lecture, multimedia presentation, discussion), practical methods (exercises performed on computers)
3.5. **Bibliography**	**Required reading**	1. S. McClure, J. Scambray, G. Kurtz, Hacking Exposed 7, McGraw-Hill, 2012 2. G. Weidman, B, Penetration Testing, No Starch Press, 2014 3. N. Ferguson, B. Schneier, Practical Cryptography, Wiley, Wiley John + Sons, 2004
	Further reading	1. Wprowadzenie do bezpieczeństwa IT, Securitum, 2023 (Polish only) 2. P. Engebretson, The Basics of Hacking and Penetration Testing, Elsevier, 2013

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1. Course objectives *(including form of classes)*

C1-acquiring the ability to secure a simple network and use operating system security tools.
C2-using cryptographic keys and packages and programmes to handle them.
C3-the ability to build basic security strategies for a small workstation.
C4-using data protection tools.

4.2. Detailed syllabus *(including form of classes)*

Lectures

1. Introduction to security, basics of local Unix system security,
2. Data storage and protection issues,
3. Security in TCP/IP networks, elements of network security in Unix-type systems
4. Optimal configuration of network services, firewall systems, intrusion detection systems
5. Introduction to cryptology, key cryptographic methods and tools.

Classes (in laboratory)

1. Passwords, authentication, breaching
2. Encryption and cryptographic tools
3. Secure data deletion
4. Archiving
5. Working in an encrypted environment

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of **KNOWLEDGE:**		
W01	knows the basic concepts of computer system security, defines data security principles	ID1A_W07 ID1A_W11
W02	explains physical security issues	ID1A_W11
W03	has basic knowledge of personal data protection, privacy and copyright.	ID1A_W11 ID1A_W14
within the scope of **ABILITIES:**		
U01	formulates rules for data storage and secure management of information media and backups	ID1A_U08
U02	develops simple security strategies.	ID1A_U08
within the scope of **SOCIAL COMPETENCE:**		
K01	is aware of the issues arising from responsibility for personal data management, exercises caution and responsibility in data protection	ID1A_K02
K02	is sensitive to abuses related to computer security breaches	ID1A_K02

4.4. **Methods of assessment of the intended learning outcomes**

Teaching outcomes *(code)*	Method of assessment (+/-)																					
	Exam oral/written*			Test*			Project*			Effort in class*			Self-study*			Group work*			Others* e.g. standardized test used in e-learning		
	Form of classes			*Form of classes*			*Form of classes*			*Form of classes*			*Form of classes*			*Form of classes*			*Form of classes*		
	L	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*
W01	+																				
W02	+																				
W03	+				+																
U01					+									+							
U02					+									+							
K01	+				+						+										
K02	+				+						+										

****delete as appropriate***

4.5. **Criteria of assessment of the intended learning outcomes**

Form of classes	Grade	Criterion of assessment
Lecture (L)	**3**	Achievement of <50 - 60) % of the requirements applied in the assessment methods
	3,5	Achievement of <60 - 70) % of the requirements applied in the assessment methods
	4	Achievement of <70 - 80) % of the requirements applied in the assessment methods
	4,5	Achievement of <80 - 90) % of the requirements applied in the assessment methods
	5	Achievement of <90 - 100) % of the requirements applied in the assessment methods
Classes (C) in lab	**3**	Achievement of <50 - 60) % of the requirements applied in the assessment methods
	3,5	Achievement of <60 - 70) % of the requirements applied in the assessment methods
	4	Achievement of <70 - 80) % of the requirements applied in the assessment methods
	4,5	Achievement of <80 - 90) % of the requirements applied in the assessment methods
	5	Achievement of <90 - 100) % of the requirements applied in the assessment methods

5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

Category	Student's workload

	Full-time studies	Extramural studies
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/	***75***	
*Participation in lectures**	30	
*Participation in classes, seminars, laboratories**	30	
*Preparation in the exam/ final test**	15	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	***50***	
*Preparation for the classes, seminars, laboratories**	30	
*Preparation for the exam/test**	10	
Project	10	
TOTAL NUMBER OF HOURS	***125***	
ECTS credits for the course of study	**5**	

****delete as appropriate***

Accepted for execution *(date and legible signatures of the teachers running the course in the given academic year)*

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