

Faculty of Fundamental Problems of Technology						
COURSE CARD						
Name in polish	:	Bezpieczeństwo przetwarzania w chmurze				
Name in english	:	Security in Cloud Computing				
Field of study	:	Computer Science				
Specialty (if applicable)	:					
Undergraduate degree and form of	:	masters, stationary				
Type of course	:	optional				
Course code	:	E2_W31				
Group rate	:	Yes				
		Lectures	Exercides	Laboratory	Project	Seminar
Number of classes held in schools (ZZU)		30		30		
The total number of hours of student work-load (CNPS)		90		90		
Assesment		pass				
For a group of courses final course mark		X				
Number of ECTS credits		3		3		
including the number of points corresponding to the classes of practical (P)				3		
including the number of points corresponding occupations requiring direct contact (BK)		3		3		
PREREQUISITES FOR KNOWLEDGE, SKILLS AND OTHER POWERS						
Knows and administers chosen OS.						
COURSE OBJECTIVES						
<p>C1 The course targets: the security solutions for major platforms of cloud computing. The main goal is to review secure architectures, infrastructures, and software components using the user-centric and data-centric approach</p> <p>C2 The goal is to: train security procedures in cloud computing platforms, gain practical attack/defend skills in remote and virtual environment.</p>						

COURSE LEARNING OUTCOMES

The scope of the student’s knowledge:

- W1** Knows security aspects of hardware architectures for cloud computing
- W2** Knows security aspects of software architectures for cloud computing.
- W3** Knows cryptographic schema which of security extensions for cloud computing

The student skills:

- U1** Can manage cloud software as a security administrator
- U2** Can use client software and various extensions to provide secure data processing at cloud.
- U3** Can configure remote user environment for secure computing.

The student’s social competence:

- K1** Can present arguments for securing remote computation.
- K2** Can present legal aspects of cloud computing.

COURSE CONTENT

Type of classes - lectures

Wy1	Identity management	6h
Wy2	Securing communication	6h
Wy3	Data management	6h
Wy4	Reliability	4h
Wy5	Legal and procedural issues of cloud security	4h
Wy6	Case Studies	4h

Type of classes - laboratory

Lab1	Identity management	10h
Lab2	Securing communication	10h
Lab3	Data management	8h
Lab4	Reliability	2h

Applied learning tools

1. Traditional lecture
2. Multimedia lecture
3. Solving tasks and problems
4. Solving programming tasks

EVALUATION OF THE EFFECTS OF EDUCATION ACHIEVEMENTS

Value	Number of training effect	Way to evaluate the effect of education
F1	W1-W3, K1-K2	
F2	U1-U3, K1-K2	List of Lab Exercises.
$P = \% * F1 + 100\% * F2$		
BASIC AND ADDITIONAL READING		
<ol style="list-style-type: none"> 1. Chosen OS documentation. 2. Chosen cloud platform documentation. 		
SUPERVISOR OF COURSE		
dr Łukasz Krzywiecki		

RELATIONSHIP MATRIX EFFECTS OF EDUCATION FOR THE COURSE
Security in Cloud Computing
WITH EFFECTS OF EDUCATION ON THE DIRECTION OF COMPUTER SCIENCE

Course training effect	Reference to the effect of the learning outcomes defined for the field of study and specialization (if applicable)	Objectives of the course**	The contents of the course**	Number of teaching tools**
W1	K2_W02 K2_W05 K2_W07	C1	Wy1-Wy6	1 2
W2	K2_W05 K2_W07 K2_W13_S2BKM	C1	Wy1-Wy6	1 2
W3	K2_W02 K2_W03 K2_W04 K2_W05 K2_W13_S1ALG K2_W12_S2BKM K2_W13_S2BKM	C1	Wy1-Wy6	1 2
U1	K2_U01 K2_U02 K2_U21 K2_U23_S2BKM K2_U24_S2BKM	C1	Lab1-Lab4	3 4
U2	K2_U12 K2_U23_S2BKM K2_U24_S2BKM	C1	Lab1-Lab4	3 4
U3	K2_U01 K2_U15 K2_U23_S2BKM K2_U24_S2BKM	C1	Lab1-Lab4	3 4
K1	K2_K11 K2_K15	C1 C2	Wy1-Wy6 Lab1-Lab4	1 2 3 4
K2	K2_K01 K2_K04 K2_K15	C1 C2	Wy1-Wy6 Lab1-Lab4	1 2 3 4