



COURSE DESCRIPTION

Course code	full-time studies	
	part-time-studies	
Course name	Cyberbezpieczeństwo	
Course name in English	Cybersecurity	
Valid from academic year	2022/23	

PLACEMENT IN THE TEACHING PROGRAM

Field of study	Computer Science
Level of education	1st degree
Studies profile	General
Form and method of teaching classes	Full-time and part-time studies
Specialization	Information and communication technology
Organizational unit responsible for the course	Katedra Systemów Informatycznych
Course coordinator	dr inż. Mirosław Płaza
Approved by	Dean of the Faculty of Electrical Engineering, Automatic Control and Computer Science Roman Deniziak, KUT prof., DSc, PhD

GENERAL CHARACTERISTIC OF THE COURSE

Course affiliation	Speciality	
Course status	Obligatory	
Language	English	
Semester	full-time studies	Semester VI
	part-time-studies	Semester VII
Requirements	Computer networks, Routing and Switching Essentials	
Exam (YES/NO)	YES	
ECTS	4	

Course form		lecture	classes	laboratory	project	other
Hours per semester	full-time studies	15		30		
	part-time-studies	9		18		

LEARNING RESULTS

Category	Result Symbol	Learning Results	References to the field of study results
Knowledge	W01	Students know and understand contemporary cybersecurity issues.	INF1_W32
	W02	Students know and understand the solutions to design / run security services in the ICT network.	INF1_W32
Skills	U01	Students are able to match the appropriate level of security to ensure protection against threats.	INF1_U32
	U02	Students are able to design / run / test a security service in an ICT network.	INF1_U32
	U03	Students are able to plan and carry out experiments on protection of resources available through ICT networks.	INF1_U32
Social competence	K01	Students are prepared to assess the importance of cybersecurity in today's world.	INF1_K1 INF1_K2
	K02	Students are prepared to work and collaborate in a group in the field of creating security in the field of ICT.	INF1_K1 INF1_K2

COURSE CONTENT

Course Form	Content
lecture	<ol style="list-style-type: none"> Introduction to cybersecurity issues (cyberspace, cybercrime; types of vulnerabilities). Threats, vulnerabilities and attacks in the cyber world (malware and advanced protection mechanisms; DoS, DDoS attacks and how to respond to them). Selected types of attacks (access attacks; attacks on network infrastructure and services; attacks on wireless networks). Data theft prevention systems. Cloud computing (basic cybersecurity solutions operating in cloud computing). Security systems design (principles of security systems design and evaluation; information systems security policy). Selected legal aspects in the area of cybersecurity.
laboratory	<ol style="list-style-type: none"> Data protection in the cyber world – data integrity testing. Virtual machine security. Detection of threats and vulnerabilities in ICT security. Attacks on desktop and mobile devices. Examining traffic between client and remote website. Basic VPN tunnel configuration. User passwords recovery using system tools. Testing and basic configuration of firewall. Access control lists in cybersecurity issues.

LEARNING RESULTS VERIFICATION METHODS

Result Symbol	Learning results verification methods					
	Oral Exam	Written Exam	Midterm	Project	Report	Other
W01			X			
W02			X			
U01			X			
U02			X			
U03			X			
K01			X			
K02			X			

ASSESSMENT FORMS AND CRITERIA

Course Form	Assessment Form	Assessment Criteria
lecture	exam	Obtaining at least 50% of the points during the exam.
laboratory	pass with a grade	Obtaining at least 50% of the points from the pass tests during the laboratory classes.

STUDENT'S VOLUME OF WORK

ECTS Balance														
No.	Activity Type	Student Involvement										Unit		
		full-time studies					part-time-studies							
		Lec	C	Lab	P	S	Lec	C	Lab	P	S			
1.	Participation in classes according to the schedule	15		30			9		18					h
2.	Other (consultations, exams)	4		2			4		2					h
3.	Total with the direct assist of an academic teacher	51					33					h		
4.	Number of ECTS, that students obtains with the direct assist of an academic teacher	2,04					1,32					ECTS		
5.	Hours of unassisted student work	49					67					h		
6.	Number of ECTS that student obtains working unassisted	1,96					2,68					ECTS		
7.	Practical classes volume of work	30					18					h		
8.	Number of ECTS obtained by student at practical classes	1,20					0,72					ECTS		
9.	Total student's volume of work expressed in hours	100					100					h		
10.	ECTS	4												

BIBLIOGRAPHY

1. Charles J. Brooks, Donald Short, Christopher Grow, **Cybersecurity Essentials**, 2018
2. Materials on the NetAcad platform available for students during laboratory.