

Subject card

Subject name and code	Cybersecurity, PG_00177525						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2027/2028		
Education level	Master's studies	Subject group			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			6.0		
Learning profile	academic	Assessment form			exam		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Przemysław Jatkiewicz				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	45.0	0.0	0.0	60
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	60		4.0		86.0	150
Subject objectives	To introduce students to processes, best practices and technological solutions that help protect critical systems and networks from digital attacks.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[[iEMU2_W07] The student possesses a comprehensive understanding of regulations and legal, organizational, and ethical norms, particularly those related to the protection of intellectual property and relevant informatics tools.	The student is familiar with the 27000 series standards, the NIS Directive and the GDPR.	[SW4] test/exam - oral or written
	[[iEMU2_K02] The student is ready to perform professional roles responsibly, observe and develop the principles of professional ethics and act to comply with them, as well as to care for the development of achievements and maintain the ethos and tradition of professions related to econometrics, informatics or statistics.	The student is ready to perform the roles of Data Protection Officer, Cybersecurity Specialist, and Cybersecurity Auditor.	[SK4] test/exam - oral or written
	[[iEMU2_U05] The student can recognize and effectively apply legal, professional, and ethical standards within management, quality sciences, economics, and finance.	The student is able to conduct a risk analysis, plan an audit, and develop an information security policy.	[SU6] demonstration of practical skills
	[[iEMU2_U12] The student can adapt, design, create, and operate IT systems that support business entities.	The student is able to secure operating systems and network services.	[SU5] implementation of a problem task

Subject contents	<p>Lecture</p> <p>Regulations, standards, good practices related to cybersecurity.</p> <p>Personal data protection</p> <p>Threats and vulnerabilities of IT systems</p> <p>Physical security of servers</p> <p>Malware</p> <p>Audit, inspection, tests, checks</p> <p>Risk analysis methodologies</p> <p>Cryptography</p> <p>Exercises</p> <p>To familiarize students with the principles of protecting LAMP servers (Linux, Apache, Mysql, PHP).</p> <p>Identification. authentication, authorization.</p> <p>Server protection against malware</p> <p>Planning and preparation of the audit, conducting the audit, post-audit activities</p> <p>Audit support tools</p> <p>Conducting risk analysis</p>											
Prerequisites and co-requisites	None											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 1514 794 1541">Subject passing criteria</th> <th data-bbox="801 1514 1139 1541">Passing threshold</th> <th data-bbox="1145 1514 1482 1541">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 1550 794 1576">Problem-based tasks</td> <td data-bbox="801 1550 1139 1576">51.0%</td> <td data-bbox="1145 1550 1482 1576">50.0%</td> </tr> <tr> <td data-bbox="456 1585 794 1612">Written exam</td> <td data-bbox="801 1585 1139 1612">51.0%</td> <td data-bbox="1145 1585 1482 1612">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Problem-based tasks	51.0%	50.0%	Written exam	51.0%	50.0%
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Problem-based tasks	51.0%	50.0%										
Written exam	51.0%	50.0%										
Recommended reading	Basic literature	P. Jatkiewicz, Bezpieczeństwo systemów informatycznych firm, Wydawnictwo UG 2020										
	Supplementary literature	Molski M., Łacheta M., Przewodnik audytora systemów informatycznych, Helion 2006 E. Nemeth, G. Snyder, T. Hein, B. Whaley, Unix i Linux Przewodnik administratora systemów, Helion 2023										
	eResources addresses											

Example issues/ example questions/ tasks being completed	State the differences between symmetric encryption, asymmetric encryption and hash functions. Implement two-factor authentication using Google Authenticator.
Work placement	Not applicable

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