GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Cybersecurity of Enterprise Infrastructure, PG_00053095		
Field of study	Data Engineering, Data Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study 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	3	Language of instruction	English
Semester of study	6	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Informatics In Management -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Rafał Leszczyna	
	Teachers	dr hab. inż. Rafał Leszczyna	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	30.0	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	6.0	9.0	75

Subject objectives

The aim of the course is to acquire knowledge in the area of enterprise IT infrastructure and security management.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U04] formulates logical solutions to complex or unstructured problems	The student formulates logical solutions to complex IT security problems	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
[K6_U02] prepares and presents convincingly professional presentations of the results of undertaken activities, with their advanced interpretation	The student prepares and presents professional presentations of the results of IT security analyses, including risk and cost assessment	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
[K6_W04] demonstrates creative and entrepreneurial activity in formulating and implementing innovative ideas	The student demonstrates creative and entrepreneurial action in analyzing and assessing risks and costs related to IT security, formulating innovative solutions for protecting IT infrastructure and creating security documentation tailored to the specific needs of the enterprise.	[SW2] Assessment of knowledge contained in presentation

Subject contents	Course content – lecture Introduction Enterprise IT infrastructure IT security cost Risk management Risk assessment IT security standards IT threats Enterprise IT infrastructure documentation (including IT infrastructure description, security procedures description) IT infrastructure protection controls Course content – laboratory Enterprise IT infrastructure analysis Risk assessment IT security cost assessment Definition of a security policy Selecting IT infrastructure protection controls
Prerequisites and co-requisites	No requirements

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exam	60.0%	40.0%
Lab work reports	60.0%	60.0%

Recommended reading

Basic literature	1. ISO/IEC 27001 2. NIST SP 800-53 3. Ross Anderson, Security Engineering Third Edition,https://www.cl.cam.ac.uk/~rja14/book.html 4. Ryan Leirvik , Understand, Manage, and Measure Cyber Risk: PracticalSolutions for Creating a Sustainable Cyber Program, Apress Media, 2023,https://doi.org/10.1007/978-1-4842-9319-5
Supplementary literature	1. Weis, Dan, Boardroom Cybersecurity: A Director's Guide to MasteringCybersecurity Fundamentals, 2024, Berkeley, CA: Apress L. P 2. Stuart McClure, Joel Scambray, George Kurtz, Hacking Exposed: NetworkSecurity Secrets & Solutions, Osborne/McGraw-Hill, 2001 3. Matt Bishop, Introduction to Computer Security, Prentice Hall PTR 2004 4. Micki Krause, Harold F. Tipton, Information Security Management Handbook,Auerbach 2007 5. Steve Purser, A Practical Guide to Managing Information Security, Artech2004 6. Matt Bishop, Computer Security: Art and Science, Addison Wesley 2002 7. ISO/IEC 15408 (Common Criteria) 8. Sjaak Laan, IT Infrastructure Architecture Infrastructure Building Blocks andConcepts, Lulu Press Inc. 2017
eResources addresses	

Example issues/ example questions/ tasks being completed	Analyse enterprise IT infrastructure and prepare its documentation. Perform risk assessment of the analysed IT infrastructure. Propose protection controls for the analysed IT infrastructure. Present examples of critical infrastructures. Present and discuss basic functions of firewalls.
Practical activites within the subject	Not applicable

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