GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Cybersecurity of Enterprise Infrastructure, PG_00053095		
Field of study	Data Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Rafał Leszczyna	
	Teachers	dr hab. inż. Rafał Leszczyna	

Lesson types and methods of instruction

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_U02] designs, analyses correctness and creates functional specification of IT systems, selects appropriate measures, creates quality models, prepares and assesses their design documentation.	Student: - Analyses cybersecurity policies of various organisations - Develops a dedicated cybersecurity policy - Chooses and indicates appropriate cybersecurity controls for an organisation based on selected standards	[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[K6_W04] Knows the architecture of computers, operating system processes, file systems, text processing programs, disk and ram memories management rules. Knows the problems of sharing the state, presentation and transformation of information in a distributed system, hypermedia technologies and related services, the architecture of interactive distributed simulation and agent interaction methods.	Student: - Identifies and describes (in regard to cybersecurity) IT infrastructure assets and information assets - Describes the IT infrastructure - Develops a diagram of the IT infrastructure	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge

Subject contents	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 LAB: Enterprise IT infrastructure analysis Risk assessment IT security cost assessment Documenting enterprise IT infrastructure 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
active participation in the course meetings	60.0%	5.0%
Lab work reports	60.0%	50.0%
Exam	60.0%	45.0%

Recommended reading

Basic literature	Ross J. Anderson. 2008. Security Engineering: A Guide to Building Dependable Distributed Systems (2 ed.). Wiley Publishing. NIST, An Introduction to Computer Security: the NIST Handbook, 1995, DOI:10.6028/NIST.SP.800-12. Peter Gutmann, Engineering Security, 2014, Computer security handbook. Vol 1 / ed. by Seymour Bosworth, M. E. Kabay, Eric Whyne, Hoboken : John Wiley & Sons, cop. 2009.

	Supplementary literature	John R. Vacca, Cyber Security and IT Infrastructure Protection, Syngress; 1 edition, September 23, 2013 Douglas Landoll, The Security Risk Assessment Handbook: A Complete Guide for Performing Security Risk Assessments, Second Edition, May 20, 2011. Bruce Schneier, Applied Cryptography, Second Edition, John Wiley & Sons, 1996. Sjaak Laan, It Infrastructure Architecture - Infrastructure Building Blocks and Concepts Second Edition, Lulu.com, February 24, 2013. Art Carapola, Lord of the Infrastructure: A Roadmap for IT Infrastructure Managers, NewVista Advisors, llc; 1 edition, March 27, 2016. John Yani Arrasjid, Mark Gabryjelski, Chris Mccain, It Architect: Foundation in the Art of Infrastructure Design: A Practical Guide for It Architects, It Architect Resource, Llc, March 21, 2016.
	eResources addresses	Adresy na platformie eNauczanie:
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.	
Work placement	Not applicable	

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