

Subject card

Subject name and code	Automation of IT system building and deployment processes, PG_00183615						
Field of study	Informatics						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
Mode of study	full-time studies		Mode of delivery		e-learning		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	practical		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Jakub Neumann				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 30.0						
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	30		0.0		0.0	30
Subject objectives	Learn the principles of organizing IT teams in the context of building and delivering services. Understand the principles of DevOps "culture" in project teams, which has become one of the most important principles for delivering new solutions in cloud environments. Learn how to design continuous integration (CI) processes to verify the quality of developed software. Learn how to design continuous deployment (CD) processes for solutions in runtime environments.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[INFL3_W08] has knowledge of the use of software development, maintenance and test tools and environments		In this course, students will learn about selected aspects of DevOps departments' work related to building and delivering services. They will also learn about methods for designing continuous integration and continuous deployment processes.		[SW2] presentation/project/paper/report		
	[INFL3_U04] can create, run and test programs using dedicated tools and design patterns		Students will create containerized applications in laboratories using dedicated tools and services related to automation and CD/CI processes.		[SU2] presentation/project/paper/report		

Subject contents	1. Organizing IT teams in the context of building and delivering services. 2. Automation processes: • Application containerization • Code integration (CI) • Application deployment (CD) • Infrastructure development (IaC) 1. DevOps culture. 2. Cloud solution implementation architectures.		
Prerequisites and co-requisites	Passed the course "Object-Functional Programming"		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project / application evaluation	51.0%	100.0%
Recommended reading	Basic literature	• N. Forsgren, J. Humble, G. Kim, Accelerate: The Science of DevOps. Building and Scaling High Performing Technology Organizations, 2018 b. M. Skelton, M. Pais, Team Topologies, 2019	
	Supplementary literature	• J. Humble, J. Molesky & B. O'Reilly, Lean Enterprise, 2020 • J. P. Kotter, Leading Change, 2012 • R. Leszko, Continuous Delivery with Docker and Jenkins, 2022	
	eResources addresses	Basic https://docs.aws.amazon.com/index.html - Amazon Web services online documentation https://www.jenkins.io/doc/ - Jenkins online documentation https://docs.docker.com/get-started/ - Docker online documentation https://www.terraform.io/docs - Terraform online documentation https://docs.microsoft.com/en-us/azure/devops/ - Azure DevOps online documentation	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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