



Subject card

Subject name and code	, PG_00057625						
Field of study	Mathematics						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2024/2025		
Education level	second-cycle studies		Subject group				
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		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Divison of Nonlinear Analysis -> Institute of Applied Mathematics -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Karol Dziedziul				
	Teachers		Kazimierz Najmajer dr hab. Karol Dziedziul				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	30.0	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		0.0		0.0	60
Subject objectives	the aim of the course is to enrich the statistical approach with optimization methods. This gives you another machine learning method. all this is immersed in modern analytical methods, such as frames, the Kadison Singer hypothesis						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
Subject contents	Essentially we have three main roots of that lecture: paper S. Smale, Y. Yao Online Learning Algorithm, Vapnik V., Statistical Learning Theory, Wiley-Interscience, 1 edition, 1998, Regularization: From Inverse Problems to Large-Scale Machine Learning Ernesto De Vito, Lorenzo Rosasco, and Alessandro Rudi, 2021. All others part are consequence of that choice.						
Prerequisites and co-requisites	probability and three courses in statistics						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	lecture 50 lab 50%		50.0%		100.0%		

Recommended reading	Basic literature	<p>PAULSEN, MRINALRAGHUPATHI An Introduction to the Theory. of Reproducing Kernel Hilbert Spaces .Cambridge University Press 2016</p> <p>Heinz Werner Engl, Martin Hanke, A. Neubauer Regularization of Inverse Problems</p> <p>Springer Science \& Business Media, 31 lip 1996</p> <p>S. Smale, Y. Yao Online Learning Algorithms, Found. Comput. Math. 145170 (2006), Springer</p> <p>Vapnik V., The Nature of Statistical Learning Theory, Springer, 2000. s. 38</p> <p>A. Christmann and I. Steinwart. Support Vector Machines. Springer, Berlin, 2008</p>
	Supplementary literature	W. Rudin Functional Analysis
	eResources addresses	Adresy na platformie eNauczanie:
	Data will be given. Present result of machine learning	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

Document generated electronically. Does not require a seal or signature.