GDAŃSK UNIVERSITY OF TECHNOLOGY

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

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

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