

於。GDAŃSK UNIVERSITY 奶 OF TECHNOLOGY

Subject card

Subject name and code	Compensatory object , PG_00021035								
Field of study	Mathematics								
Date of commencement of studies	October 2022		Academic year of realisation of subject			2022/2023			
Education level	second-cycle studies		Subject group			Obligatory subject group in the field of study			
						research in the field of study			
Mode of study	Full-time studies		Mode of delivery			at the university			
Year of study	1		Language of instruction			Polish			
Semester of study	1		ECTS credits			1.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Zakład Analizy Nieliniowej -> Instytut Matematyki Stosowanej -> Faculty of Applied Physics and Mathematics								
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Magdalena Chmara							
	Teachers		dr inż. Magdalena Chmara						
			mgr inż. Michał Krzemiński						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM	
	Number of study hours	0.0	30.0	0.0	0.0		0.0	30	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation i classes incluc plan	I didactic Participation in ed in study consultation hou		n ours	Self-study		SUM	
	Number of study hours	30		0.0		0.0		30	
Subject objectives	Repetition of selected problems from mathematics needed to study for the second level (for students of mathematics PG) and fill in the gaps for students of other specialties.								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	K7_U05		The revision and supplementation of knowledge from the basic mathematics sections necessary for further education at master's studies. Detailed discussion of the issues needed for a given specialization.			[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment			
	K7_W01		Supplementing knowledge of basic subjects in the scope appropriate for a given specialization.			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects			
	K7_U02		A reminder of many important theorems from the basic branches of mathematics, their proofs and practical applications. The ability to apply the acquired theoretical knowledge in practice in accounting and practical tasks.			[SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information			

Subject contents	Content tailored to the appropriate degree.						
	Data Analytics: statistics, probability, and their applications for datasets and generated datasets, R, RStudio.						
	Geometry and Computer Graphics: applications of linear algebra and mathematical analysis in geometry, projective space and homogeneous coordinates, quaternions, Python.						
	Financial Mathematics: statistics, probability and their applications, Python.						
Prerequisites and co-requisites	Basic knowledge of mathematical analysis, analytical geometry, linear algebra, measure theory, probability theory.						
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	Exercises	50.0%	100.0%				
Recommended reading	Basic literature	 Analityk danych: Suess, Eric A., Trumbo, Bruce E - Introduction to Probability Simulation and Gibbs Sampling with R, Springer 2010 J. Jakubowski, R. Sztencel - Wstęp do teorii prawdopodobieństwa 2010 Geometria i Grafika Komputerowa: Marc Peter Deisenroth, A. Aldo Faisal,Cheng Soon Ong - Mathematics for Machine Learning, Cambridge University Press 2020 Geometry for Computer Graphics Formulae, Examples and Proofs, John Vince A. Romanowski - Algebra liniowa 2003 Duncan Marsh, Applied Geometry for Computer Graphics and CAD, Springer 2005 Matematyka Finansowa: Marc Peter Deisenroth, A. Aldo Faisal,Cheng Soon Ong - Mathematics for Machine Learning, Cambridge University Press 2020 J. Jakubowski, R. Sztencel - Wstęp do teorii prawdopodobieństwa 2010 Suess, Eric A., Trumbo, Bruce E - Introduction to Probability Simulation and Gibbs Sampling with R. Springer 2010 					
	Supplementary literature	A. Białynicki-Birula - Algebra liniowa z geometrią B. Gdowski, E. Pluciński - Zadania z geometrii analitycznej F. Preparata, M. Shamos - Geometria obliczeniowa. Wprowadzenie M. Krzyśko - Wykłady z teorii prawdopodobieństwa G. James, D. Witten, T. Hastie, R. Tibshirani An Introduction to Statistical Learning (2017) C. Bishop Pattern Recognition and Machine Learning (2006) T. Hastie, R. Tibshirani, J. Friedman The Elements of Statistical Learning (2017) M. Evans, J. Rosenthal Probability and Statistics (2009)					
	eResources addresses	Adresy na platformie eNauczanie: Przedmiot Wyrównawczy (GiGK i MF) 2022/2023 - Moodle ID: 25248					
		https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25248 Przedmiot Wyrównawczy (GiGK i MF) 2022/2023 - Moodle ID: 25248 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25248					
Example issues/ example questions/ tasks being completed	Calculate conditional expected value [0,1], the sigma body is spanned by Lebesgue measure.	of the random variable X (t) = t ^ 2 dyadic intervals less than 1/8, and t	if the probability space is equal to he probability measure is equal to				
	Find the matrix of the oblique projection on the plane in space in homogeneous coordinates. Make a rotation with quaternions.						
Work placement	Not applicable						