



Subject card

Subject name and code	Specialization seminar, PG_00049172						
Field of study	Mathematics						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		Optional subject group 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		Polish		
Semester of study	6		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Instytut Matematyki Stosowanej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Robert Krawczyk				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	30.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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		5.0		40.0	75
Subject objectives	The aim of the course is to prepare the student for the diploma examination, including the presentation of the specialization project underway, as well as familiarization with the questions for the diploma examination and learning more about these questions.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W05		He can use the basic mathematical concepts in the field of the work.		[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	K6_W04		He can use the basic mathematical concepts in the field of the work.		[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	K6_K01		the student is able to prepare a short presentation covering his bachelor's thesis and answer any questions about the work		[SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work		
	K6_K04		The student is able to answer the questions on the list prepared for the diploma examination		[SK4] Assessment of communication skills, including language correctness		
	K6_U12		Learned the basics of statistical reasoning and knows how to apply them to the studied issues.		[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		

Subject contents	mathematical analysis (number sequences, differential and integral calculus). Ordinary differential equations (basic methods of solving equations), linear algebra (matrix, determinant, linear transformation, eigenvectors and eigenvalues), analytic geometry (line equation, vectors and vector product, conic sections), algebra (groups, rings, bodies) . Basic concepts in financial mathematics (financial leverage, NPV, random component, Chow test,type I and II error)		
Prerequisites and co-requisites	Knowledge of the knowledge needed to complete the diploma project in your subject. Knowledge of the basic concepts of first-cycle studies, allowing you to understand the presentation of other speakers.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	prelection	50.0%	100.0%
Recommended reading	Basic literature	any	
	Supplementary literature	any	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. Continuity and differentiability of functions 2. Green and Stokes theorem 3. Conical curves 4. Transforms and orthogonal matrices 5. Derivative of a complex function. Cauchy-Riemann equations		
Work placement	Not applicable		