



Subject card

Subject name and code	Specialization seminar, PG_00049175						
Field of study	Mathematics						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
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	dr inż. Robert Krawczyk dr hab. Piotr Bartłomiejczyk					
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							
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 exam, including the presentation of the implemented specialization project, as well as familiarization with the questions for the diploma exam and deepening knowledge about these questions.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_K01	the student is able to prepare a short presentation covering his bachelor's thesis and answer any questions about the thesis			[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice		
	K6_W05	He learned the basics of statistical reasoning and is able to apply them to the studied issues.			[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation		
	K6_K04	The student is able to answer the questions on the list prepared for the diploma exam			[SK4] Assessment of communication skills, including language correctness		
	K6_U12	He learned the basics of statistical reasoning and is able to apply them to the studied issues.			[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools		
K6_W04	He can use the basic mathematical concepts in the field of work.			[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation			
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 cross products, conic sections), algebra (groups, rings, fields) . Basic concepts in financial mathematics (almost periodic functions, basic types of bifurcations)						
Prerequisites and co-requisites	Knowledge of the knowledge needed to complete a diploma project in your subject. Knowledge of basic concepts from first-cycle studies allowing to understand the presentation of other speakers.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		prelection	50.0%
Recommended reading	Basic literature	any	
	Supplementary literature	any	
	eResources addresses	Podstawowe https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38505 - Adresy na platformie eNauczanie: Seminarium specjalnościowe 2023/24 stosowana - Moodle ID: 38505 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38505	
Example issues/ example questions/ tasks being completed	1. Continuity and differentiability of functions 2. Green and Stokes theorem 3. Conics 4. Transformations and Orthogonal Matrices 5. Derivative of a Complex Function. Cauchy-Riemann equations		
Work placement	Not applicable		