GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Specialization seminar, PG_00049172		
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	Zakład Analizy Nieliniowej -> Instytut Matematyki Stosowanej -> Faculty of Applied Physics and Mathematics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marcin Styborski	
	Teachers	dr inż. Marcin Styborski 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 develop exam questions for the diploma exam and to prepare students to present the results of their own work.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U12	The student knows the basics of statistical reasoning and is able to apply it to the studied issues in other fields of science	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools
K6_W04	The student knows the basic theorems regarding issues from the list of questions for the diploma exam	[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation
K6_K01	The student is able to prepare a presentation of the results of his or her own work	[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice
K6_W05	The student is able to use basic mathematical concepts in the scope of the subject of work.	[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 questions from the list of questions for the diploma exam	[SK4] Assessment of communication skills, including language correctness

Subject contents

- Exam questions, 1st degree mathematics, general questions
- Exam questions, 1st degree mathematics, specialization questions

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">Knowledge needed to prepare a specialty project. Knowledge of basic concepts from first-cycle studies enabling understanding of other speakers' presentations.</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td></td><td>0.0%</td><td>50.0%</td></tr><tr><td></td><td>0.0%</td><td>50.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Free choice</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Free choice</td></tr>
<tr><td>eResources addresses</td><td colspan="2">Adresy na platformie eNauczanie:
Seminarium specjalnościowe - matematyka finansowa lato 2023/24 - Moodle ID: 38539
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38539</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">• The implicit function, the implicit function theorem and the extrema of the implicit function.
• Integration of functions of many variables - iterated integrals, conversion of variables (polar, spherical and cylindrical coordinates).
• Green's, Gauss-Ostrogradski's and Stokes' theorems.
• Principle of mathematical induction. Application example.
• Definition of relations, equivalence relations and abstraction classes, order relations and their distinguished elements.
• The concept of equality and power of sets. Examples of countable and uncountable sets.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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