GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00051063		
Field of study	Technical Physics		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	11.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Probability Theory and Biomathematics -> Faculty of Applied Physics and Mathematics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Joanna Cyman	
	Teachers	dr Maryna Shcholokova dr Joanna Cyman	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	60.0	60.0	0.0	0.0	0.0	120

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	120	10.0	145.0	275

Subject objectives

Endowment of student to mathematical knowledge helping technical objects

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W03	Student calculate limits of sequences of numbers and functions. Study monotonicity and extremas of a function. Student knows basic notions of differential calculus of functions of one variable. Can calculate indefinite integral using methods integration by parts and integration by substitution. Student understands mathematical theorems and it uses with they of solving exercises.	[SW1] Assessment of factual knowledge
K6_U01	Student understands the importance of studying by himself. Student is practising by himself.	[SU2] Assessment of ability to analyse information

Subject contents

Number sequences, convergent (divergent) sequences. Functions of one variable and their properties. Inverse trigonometric functions. Limit of function, continuous functions. Differential calculus of one variable. Derivative of function. Monotone function, convex (concave) function, extremum of function, asymptote of function. Rule of d'Hospital. Taylor's formula. Geometric and physical aplications of derivative. Indefinite integrals.

Prerequisites and co-requisites

Student knows basic mathematical notions

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exercise	50.0%	5.0%
Colloquium 3	50.0%	20.0%
Colloquium 3	50.0%	20.0%
Examination	50.0%	40.0%
Colloquium 1	0.0%	15.0%

Recommended reading	Basic literature	1. J. Topp, Mathematics. Function of one variable, Publishing House of University of Gdansk, 2016 2. M. Gewert, Z. Skoczylas. Mathematical analysis 1. Definitions, theorems, formulas. Wroław GiS 2017. 3. B. Wikieł, Matematyka. Basics with elements of higher mathematics, Wydawnictwo Politechniki Gdańskiej, 2015 4. J. Dymkowska, D. Beger - Differential calculus in tasks, Publishing House of Gdańsk University of Technology, 2016 5. J. Dymkowska, D. Beger - Integral calculus in tasks, Publishing House of Gdańsk University of Technology, 2017
	Supplementary literature	K. Jankowska, T. Jankowski, Set of exercises from mathematics. Publishing House of Gdańsk University of Technology, 2009
	eResources addresses	Adresy na platformie eNauczanie: Analiza matematyczna I 2022/2023 - Moodle ID: 23558 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=23558
Example issues/ example questions/ tasks being completed	Find extremum of the function Find the limit of a function	
Work placement	Not applicable	