



## Subject card

Subject name and code	, PG_00051063						
Field of study	Technical Physics						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2021/2022		
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		blended-learning		
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		mgr inż. Katarzyna Tessmer 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: 60.0						
	Adresy na platformie eNauczanie: Analiza matematyczna I 2021/2022 - Moodle ID: 13665 <a href="https://enauczenie.pg.edu.pl/moodle/course/view.php?id=13665">https://enauczenie.pg.edu.pl/moodle/course/view.php?id=13665</a>						
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_U01		Student understands the importance of studying by himself. Student is practising by himself.		[SU2] Assessment of ability to analyse information		
	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		
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 applications 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	0.0%	10.0%
	Examination	50.0%	40.0%
	Colloquium 2	0.0%	25.0%
	Colloquium 1	0.0%	25.0%
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. Wrocław GiS 2017.  3. B. Wikeł, 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	Analiza matematyczna I 2021/2022 - Moodle ID: 13665 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13665">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13665</a>	
	Example issues/ example questions/ tasks being completed	Find extremum of the function          Find the limit of a function	
Work placement	Not applicable		