



## Subject card

Subject name and code	Mathematical analysis II, PG_00037260						
Field of study	Technical Physics						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024		
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	2	ECTS credits			6.0		
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 hab. Paweł Możejko					
	Teachers	dr hab. Paweł Możejko mgr inż. Natalia Tańska					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
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	60	10.0		80.0	150	
Subject objectives	To equip students with the knowledge that supports technical items						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W03] Has systematized knowledge of higher mathematics, including algebra, analysis, probability theory and numerical methods, allowing for basic description, understanding and modelling of physical phenomena and some technical processes.	Student understands mathematical theorems and it uses with they of solving exercises. Can calculate integrals and knows applications of integrals. Study infinite series of numbers and series of functions. Student can make differential and integral calculus of multivariate function like partial derivatives, multiple integration.			[SW1] Assessment of factual knowledge		
	[K6_U01] Can learn independently, obtain information from literature, databases and other properly selected sources.	Student understands the importance of studying by himself. Student is practising by himself.			[SU2] Assessment of ability to analyse information		
Subject contents	Integral calculus of the function of one variable. An infinite series of numbers and functions (Taylor series, Fourier series). Differential and integral calculus of multivariate function - Partial derivatives, Multiple integration.						
Prerequisites and co-requisites	Student knows basics of differential calculus of the function of one variable.						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Colloquium 2	0.0%			26.0%		
	Colloquium 1	0.0%			26.0%		
	Exam	50.0%			44.0%		
	Activity	0.0%			4.0%		

Recommended reading	Basic literature	<p>1. M. Gewert, Z. Skoczylas, Analiza matematyczna 1 i 2. Definicje, twierdzenia, wzory. Wrocław, Oficyna Wydawnicza GiS 2014.</p> <p>2. M. Gewert, Z. Skoczylas, Analiza matematyczna 1 i 2. Przykłady i zadania. Wrocław, Oficyna Wydawnicza GiS 2014.</p> <p>3. W. Krywicki, L. Włodarski, Analiza matematyczna w zadaniach 1 i 2. Warszawa, PWN 2015.</p> <p>4. J. Dymkowska, D. Beger, Rachunek całkowy w zadaniach, Gdańsk, Wydawnictwo Politechniki Gdańskiej 2017.</p>
	Supplementary literature	<p>1. J. Topp, Matematyka. Funkcje jednej zmiennej. Gdańsk, Wydawnictwo UG 2016.</p> <p>2. G. M. Fichtenholz, Rachunek różniczkowy i całkowy. T 1 i 2. Warszawa, PWN 1994.</p>
	eResources addresses	<p>Adresy na platformie eNauczanie:  Analiza Matematyczna II - Moodle ID: 37840  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37840">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37840</a></p>
Example issues/ example questions/ tasks being completed	<p>Calculate the double integral</p> <p>Definition of Partial derivatives</p>	
Work placement	Not applicable	