



Subject card

Subject name and code	Mathematics I, PG_00055649						
Field of study	Architecture						
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		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		English		
Semester of study	1		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Mathematics Center -> Vice-Rector for Education						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Magdalena Łapińska				
	Teachers		dr inż. Magdalena Łapińska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	30.0	0.0	0.0	0.0	45
	E-learning hours included: 0.0						
	Adresy na platformie eNauczenie: WA - Architektura sem.1 - Mathematics 1 2020/21 (M.Łapińska) - Moodle ID: 16406 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=16406						
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	45		8.0		47.0	100
Subject objectives	Students obtain competence in the range of using methods of mathematical analysis and linear algebra and knowledge how to solve simple problems that can be found in the field of engineering.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U04] is able to use analytical methods to formulate and solve project tasks		Student uses the methods of elementary mathematics, linear algebra, and analytic geometry to formulate and solve simple problems in the area of architecture. Student solves equations and inequalities with elementary functions. Student constructs inverse functions of exponential, logarithmic, trigonometric and cyclometric functions. Student solves exercises involving infinite sequences.		[SU4] Assessment of ability to use methods and tools		
	[K6_W01] knows and understands construction problems, building and engineering issues related to building design; principles, solutions, constructions and building materials used in simple engineering tasks in the field of architectural and urban design		Student names the basic properties of elementary functions and plots their graphs. Student understands the notion of a continuous function and uses limits of functions to determine continuity. Student analyses problems from analytical three-dimensional geometry.		[SW1] Assessment of factual knowledge		
Subject contents	1. Elementary functions 2. Sequences 3. Limit of the function 4. Continuity of a function 5. Elements of linear algebra 6. Analytic geometry in three- dimensional space 7. Conic curves						

Prerequisites and co-requisites	No requirements.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Midterms	50.0%	100.0%
Recommended reading	Basic literature	<ul style="list-style-type: none">• "Matematyka - podstawy z elementami matematyki wyższej" WPG• K.T.Jankowscy "Zbiór zadań z matematyki" WPG• KT. Jankowscy Zadania z matematyki wyższej WPG• M.Gewert, Z.Skoczylas "Analiza matematyczna I - Przykłady i zadania"	
	Supplementary literature	<ul style="list-style-type: none">• W.Krysicki, L.Włodarski "Analiza matematyczna w zdaniach I"• W.Stankiewicz "Zadania z matematyki dla wyższych uczelni technicznych I"	
	eResources addresses	WA - Architektura sem.1 - Mathematics 1 2020/21 (M.Łapińska) - Moodle ID: 16406 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=16406	
Example issues/ example questions/ tasks being completed	1. Find the domain and range of the function $f(x)=\dots$. Determine the inverse function of f 2. Evaluate the limit of the given sequence (a_n) 3. Evaluate the limit of the given function $f(x)=$ at the point $x_0=$ 4. Analyse the continuity of the following function $f(x)=$ 5. Show that the points A, B, C, D do not lie on the plane. 6. Discuss the relative position of the given lines l_1 and l_2 .		
Work placement	Not applicable		