



Subject card

Subject name and code	Mathematics I, PG_00055649						
Field of study	Architecture						
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		
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						
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_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		
	[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		
Subject contents	<ol style="list-style-type: none"> <li>1. Elementary functions</li> <li>2. Sequences</li> <li>3. Limit of the function</li> <li>4. Continuity of a function</li> <li>5. Elements of linear algebra</li> <li>6. Analytic geometry in three-dimensional space</li> <li>7. Conic curves</li> </ol>						
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"> <li>• "Matematyka - podstawy z elementami matematyki wyższej" WPG</li> <li>• K.T.Jankowscy "Zbiór zadań z matematyki" WPG</li> <li>• KT. Jankowscy Zadania z matematyki wyższej WPG</li> <li>• M.Gewert, Z.Skoczylas "Analiza matematyczna I - Przykłady i zadania"</li> </ul>
	Supplementary literature	<ul style="list-style-type: none"> <li>• W.Krysicki, L.Włodarski "Analiza matematyczna w zdaniach I"</li> <li>• W.Stankiewicz "Zadania z matematyki dla wyższych uczelni technicznych I"</li> </ul>
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>WA - A - Mathematics 2022/2023 (M.Łapińska) - Moodle ID: 24369  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24369">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24369</a></p>
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Find the domain and range of the function <math>f(x)=\dots</math> . Determine the inverse function of <math>f</math></li> <li>2. Evaluate the limit of the given sequence <math>(a_n)</math></li> <li>3. Evaluate the limit of the given function <math>f(x)=</math> at the point <math>x_0=</math></li> <li>4. Analyse the continuity of the following function <math>f(x)=</math></li> <li>5. Show that the points A, B, C, D do not lie on the plane.</li> <li>6. Discuss the relative position of the given lines <math>l_1</math> and <math>l_2</math>.</li> </ol>	
Work placement	Not applicable	

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