

Subject card

Subject name and code	Mathematical Analysis I, PG_00155232						
Field of study	Mathematical Modeling and Data Analysis						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2024/2025		
Education level	Bachelor's 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		Polish polish		
Semester of study	1		ECTS credits		9.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Institute of Mathematics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Barbara Wolnik				
	Teachers		dr Iwona Krzyżanowska dr Milena Matusik dr hab. Barbara Wolnik				
Lesson types	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		15.0		90.0	225
Subject objectives	The purpose of the course is to familiarize students with - elements of mathematical logic, in particular, logical calculus of statements and quantifiers and the application of them in conducting reasoning, - elements of multiplicity theory and topology, - concepts, theorems and methods of differential calculus of functions of one variable.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[MMiADL3_W01] knows the basic concepts, methods and theorems of mathematical logic and set theory	not applicable	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[MMiADL3_U08] is able to plan a way to solve a given problem and make a correct record of this solution, providing accurate and precise justifications for the correctness of their reasoning	not applicable	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[MMiADL3_U07] can comprehensively, in speech and in writing, formulate definitions and theorems and present correct mathematical reasoning regarding the issues learned	not applicable	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[MMiADL3_W02] knows the basic concepts, methods and theorems of mathematical analysis, and basic examples both illustrating specific concepts in this field, and allowing to refute incorrect hypotheses or unauthorized reasoning	not applicable	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[MMiADL3_W08] knows and understands well the role and importance of proof in mathematics, as well as the concept of the significance of assumptions	not applicable	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[MMiADL3_K01] is ready to accept the limitations of his/her own knowledge and understands the need for further education	not applicable	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work
	[MMiADL3_U02] correctly uses the concepts of mathematical analysis, is able - on a simple and medium level of difficulty - to apply the learned theorems and methods in this field, and is able to interpret the results obtained	not applicable	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[MMiADL3_K06] is ready to formulate opinions on basic mathematical issues	not applicable	[SK8] observation of student's independent or team work
	[MMiADL3_W06] knows the selected concepts, methods and theorems of topology	not applicable	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[MMiADL3_U01] correctly uses the learned concepts of mathematical logic and set theory	not applicable	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[MMiADL3_K04] is ready to understand and appreciate the importance of intellectual honesty in own and other people's actions; is ready to act ethically	not applicable	[SK8] observation of student's independent or team work
	[MMiADL3_K02] is ready to precisely formulate questions to deepen his/her own understanding of a given topic or to find missing elements of reasoning	not applicable	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work
	[MMiADL3_U06] correctly uses the learned concepts of topology	not applicable	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[MMiADL3_K09] is ready to critically evaluate arguments, find gaps in reasoning, and constructively criticise other people's reasoning	not applicable	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work
	[MMiADL3_W07] knows and understands the construction of mathematical theories, can use mathematical formalism to build and analyse simple mathematical models in other fields of science	not applicable	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion

Subject contents	not applicable		
Prerequisites and co-requisites	not applicable		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	not applicable	0.0%	5.0%
	not applicable	100.0%	0.0%
	not applicable	50.0%	50.0%
	not applicable	50.0%	45.0%
Recommended reading	Basic literature	not applicable	
	Supplementary literature	not applicable	
	eResources addresses		
Example issues/ example questions/ tasks being completed	not applicable		
Work placement	Not applicable		

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