

Subject card

Subject name and code	Differential equations, PG_00100979						
Field of study	Mathematics						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2025/2026		
Education level	Bachelor's studies	Subject group					
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			5.0		
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. Tomasz Człapiński				
	Teachers		dr Danuta Jaruszewska-Walczak dr hab. Tomasz Człapiński				
Lesson types	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		0.0		0.0	60
Subject objectives	The student learns the basics of the theory of ordinary differential equations.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
Subject contents	<ol style="list-style-type: none"> 1. Linear differential equations, equations with separable variables, other elementarily integrable equations. 2. Existence and uniqueness of the solution of the initial value problem. 3. Arzela-Ascoli theorem and Peano's theorem on the existence of solutions. 4. Theory of linear systems, systems with constant coefficients. 5. N-th order linear equations, equations with constant coefficients. 6. Boundary value problems for second-order linear equations. 7. Basic concepts and theorems on the stability of linear systems. 8. Euler's method for initial value problems. 						
Prerequisites and co-requisites	Mathematical Analysis 1,2,3 Linear Algebra						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	observation of the student's attitude		51.0%		0.0%		
	exam		51.0%		50.0%		
	test		51.0%		45.0%		
	activity		51.0%		5.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. J. Muszyński, A. D. Myszkis, Równania różniczkowe zwyczajne, PWN. 2. J. Ombach, Wykłady z równań różniczkowych, Wydawnictwo UJ. 3. Z. Kamont, Równania różniczkowe zwyczajne, Wydawnictwo UG. 4. A. Pelczar, J. Szarski, Wstęp do teorii równań różniczkowych, PWN
	Supplementary literature	none
	eResources addresses	
Example issues/ example questions/ tasks being completed	not included	
Work placement	Not applicable	

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