

Subject card

Subject name and code	Mathematics II, PG_00080837						
Field of study	Chemical Business						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
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		
Semester of study	2		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Nikodem Mrożek				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	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	30		5.0		40.0	75
Subject objectives	Introduction of students to mathematical tools.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BCHINŻ_W02] Enumerates basic laws and theories in chemistry, physics and mathematics necessary to formulate and solve simple engineering tasks.		Understands and applies the concept of a numerical series, uses the tools of differential and integral calculus and applies them to solve problems; operates with the concepts of linear space and Hilbert space, and is able to use basic tools of probability calculus.		[SW4] test/exam - oral or written		
	[BCHINŻ_W03] Describes the techniques of higher mathematics and IT tools necessary to describe and model chemical phenomena and technological processes.		Understands and applies the concept of a numerical series, uses the tools of differential and integral calculus and applies them to solve problems; operates with the concepts of linear space and Hilbert space, and is able to use basic tools of probability calculus.		[SW4] test/exam - oral or written		

Subject contents	The concept and selected properties of linear spaces.		
	Numerical series, series convergence.		
	Elements of differential and integral calculus of functions of several variables.		
	Examples of differential equations.		
	Selected elements of statistics and probability theory.		
Prerequisites and co-requisites	Completion of the course Mathematics I		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written exam	50.0%	100.0%
Recommended reading	Basic literature	1. Grażyna Kwiecińska: Matematyka : kurs akademicki dla studentów nauk stosowanych. Cz. 1, Wybrane zagadnienia algebry liniowej, Wydaw. Uniwersytetu Gdańskiego, Gdańsk, 2003.	
		2. Grażyna Kwiecińska: Matematyka : kurs akademicki dla studentów nauk stosowanych. Cz. 3, Analiza funkcji wielu zmiennych, Wydaw. Uniwersytetu Gdańskiego, Gdańsk, 2001.	
		3. Marian Gewert, Zbigniew Skoczylas: Analiza matematyczna 2: definicje, twierdzenia, wzory., Oficyna Wydawnicza GiS, Wrocław 2008.	
		4. Teresa Jurliewicz, Zbigniew Skoczylas: Algebra liniowa 2: definicje, twierdzenia, wzory, Oficyna Wydawnicza GiS, Wrocław 2007.	
		5. M. Gewert, Z. Skoczylas: Analiza matematyczna 2 Przykłady i zadania, Oficyna Wydawnicza GiS, Wrocław 2000.	
		6. Teresa Jurliewicz, Zbigniew Skoczylas: Algebra liniowa 1 Przykłady i zadania, Oficyna Wydawnicza GiS, Wrocław 2000.	
		7. W. Kryszicki, L. Włodarski: Analiza matematyczna w zadaniach. 1 i 2	
	Supplementary literature	1. Erich Steiner : Matematyka dla chemików, Warszawa, Wydaw. Naukowe PWN, 2001.	
		2. Halina PidekŁopuszańska: Matematyka dla chemików, Wiedza Powszechna, Warszawa 1974.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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