University of Gdańsk

Subject card

Subject name and code	Discrete Mathematics, PG_00197983		
Field of study	Informatics		
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	1	ECTS credits	7.0
Learning profile	academic	Assessment form	exam
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Andrzej Szepietowski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	45.0	60.0	0.0	0.0	0.0	105

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	105	0.0	70.0	175

Subject objectives

Familiarization with the basics of discrete mathematics in accordance with the needs of computer science.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[INFOL3_U02] is able to use his/her knowledge of higher mathematics to model and solve complex problems		
[INFOL3_W02] knows and undrstands advanced concepts of discrete mathematics, probabilistic methods and statistics	the student has basic knowledge of discrete mathematics (computer arithmetic, combinatorics and Boolean functions), the student has basic knowledge of probability theory	[SW4] test/exam - oral or written

Subject contents

Set theory: operations on sets, relations and functions, equivalence relations and classes of abstraction.
Arithmetic: counting systems, representation of numbers in computers,
Combinatorics: sequences, functions, permutations, Newton's symbol, Dirichlet's drawer rule.
Probability: independence of events, Bernoulli scheme, random variables, expected values, averages, variances, Markov and Chebyshev inequalities.
Boolean functions: Boolean algebra, Boolean expressions and functions, Boolean networks.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	51.0%	90.0%
tests	51.0%	10.0%

Recommended reading

Basic literature	Andrzej Szepietowski, *Matematyka dyskretna,* Wyd. Uniwersytetu Gdańskiego 2004.
Supplementary literature	not applicable
eResources addresses	

Example issues/ example questions/ tasks being completed	not applicable
Work placement	Not applicable

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