

Name of university, Name of faculty: Trnava University
Faculty of Education

INFORMATION SHEET OF THE SUBJECT

Code: XMIB130	Name: Discrete Mathematics for Computer Science Students				
Cover: Department of Mathematics and Computer Science					
Type of educational activity: Seminar Scope of educational activity (in hours): Weekly: 2 For term of study: ZS 46 Method of educational activity: Combined				Number of credits: 3	Recommended semester: WT
					Study grade: Bachelor
Underlie subjects:					
Conditions for passing the course: Method of evaluation: Completion by taking an examination Continuous evaluation: None. Final evaluation: The final evaluation consists of a written test for which a maximum of 100 points can be obtained. The test focuses on the acquired theoretical knowledge of graph theory, its application in problem solving, graph algorithms, their implementation in a programming language and their use in solving practical problems. Finished: The course is completed on the basis of a final assessment. At least 91 points are required for an A grade, at least 81 points for a B grade, at least 71 points for a C grade, at least 61 points for a D grade and at least 51 points for an E grade. A condition for passing the course is also the implementation of the non-contact part of the course. This part is implemented mainly by regular study of the material covered in the last seminar, regular preparation for the next seminar, study of electronic courses available in Moodle and recommended study literature, study of video recordings available in Teams, preparation for the final test.					
Learning outcomes: LO1 The student masters the basic concepts of graph theory specified in the course syllabus and related knowledge. LO2 The student is able to apply the acquired knowledge in solving problems. LO3 The student knows selected algorithms for solving graph theory problems and is able to use them in solving practical problems. LO4 The student can transform various problems into graph theory problems. LO5 The student can implement selected algorithms from graph theory in a programming language.					
Schedule of subject: Graphs. Basic concepts, adjacency matrix, graph representation, vertex degrees, vertex distance, contiguity, travel. Graph search algorithms. Independence and coverage. Eulerian graphs. Hamiltonian graphs. Planar graphs. Graph colouring. Trees, skeletons, binary trees. Graph algorithms. Applications in computer science.					
Recommended reading: Odporúčaná literatúra: POKORNÝ, M.: Diskrétna matematika. Trnava : Pedagogická fakulta Trnavskej univerzity v Trnave, 2013. PALKO, V.: Diskrétna matematika pre informatikov. OZ Hlbiny, 2017. ABAS, M. – HÍC, P.: Diskrétna matematika. MTF STU Trnava, 2005. MATOUŠEK, J. – NEŠETŘIL, J.: Kapitoly z diskretní matematiky. Praha : Karolinum, 2007. PLESNÍK, J.: Grafové algoritmy. Bratislava : Veda, 1983.					
Language requirements: Slovak					
Notes:					
Course evaluation: Assessed students in total: 70					
A	B	C	D	E	FX
20%	13%	21%	13%	13%	20%
Lecturers: doc. PaedDr. Milan Pokorný, PhD., lecturer, examiner, instructor, seminary supervisor					
Date of last change: 01.09.2026					
Approved by: prof. Ing. Veronika Stoffová, CSc.					