

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

INFORMATION SHEET OF THE SUBJECT

Code: YMIM302		Name: Manipulation Geometry	
Cover: Department of Mathematics and Computer Science			
Type of educational activity: Seminar		Number of credits: 3	Recommended semester: WT
Scope of educational activity (in hours): Weekly: 2 For term of study: ZS 46			Study grade: Bachelor
Method of educational activity: Attendance			
Recommended semester	Study programme		
1.year WT	Matematika_Mgr (YM_Mgr) Teaching Mathematics and Teaching English and Literature (YM-Aj-D2) Teaching Mathematics and Teaching Biology (YM-B-D2) Teaching Mathematics and Teaching Ethics (YM-Ev-D2) Teaching Mathematics and Teaching History (YM-His D2) Teaching Mathematics and Teaching Chemistry (YM-CH-D2) Teaching Mathematics and Teaching Informatics (YM-I-D2) Teaching Mathematics and Teaching of Religions Education (YM-Nv-D2) Teaching Mathematics and Teaching Civic Education (YM-VO-D2) Teaching Mathematics and Teaching Fine Arts (YM-Vu-D2) Teaching German and Literature and Teaching Mathematics (YNj-M-D2)		
2.year WT	Rozširujúce štúdium v študijnom programe učiteľstvo matematiky v kombinácii (RSM) Matematika_Mgr (YM_Mgr) Teaching Mathematics and Teaching English and Literature (YM-Aj-D2) Teaching Mathematics and Teaching Biology (YM-B-D2) Teaching Mathematics and Teaching Ethics (YM-Ev-D2) Teaching Mathematics and Teaching History (YM-His D2) Teaching Mathematics and Teaching Chemistry (YM-CH-D2) Teaching Mathematics and Teaching Informatics (YM-I-D2) Teaching Mathematics and Teaching of Religions Education (YM-Nv-D2) Teaching Mathematics and Teaching Civic Education (YM-VO-D2) Teaching Mathematics and Teaching Fine Arts (YM-Vu-D2) Teaching German and Literature and Teaching Mathematics (YNj-M-D2)		
Underlie subjects:			
Conditions for passing the course:			
Method of evaluation: Completion by taking an examination			
Continuous evaluation: the student will prepare graphic works according to the teacher's assignment, for which he/she can get a maximum of 40 points.			
Final evaluation: the final assessment consists of a written test for which a maximum of 60 points can be obtained. Part of the test is focused on working with building blocks (Geomag, Polydron, ...), these tasks are immediately evaluated by the teacher.			
Finished: the course is completed on the basis of the sum of points from the interim and final assessment. A minimum of 30 points must be obtained for the final assessment, otherwise the course is graded FX. 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, preparation of graphic works, study of recommended study literature, study of video recordings in Teams, preparation for the final test.			
Learning outcomes:			
VV1 The student is able to use paper folding appropriately in teaching geometry			
VV2 The student knows the geometric figures determined by the course syllabus and is able to make their models, drawings and networks			
VV3 The student is able to apply the acquired knowledge in teaching mathematics at lower and upper secondary education			
Schedule of subject:			
Geometry modelled by folding paper.			
Geometry in a square grid, geodesic and its use.			
Geometric solids and their networks. Regular polyhedra, semi-regular polyhedra, prisms, antiprismas, icells and their nets.			
The plane and space-filling			
Use of suitable building blocks (Polydron, Geomag).			
Principles and practical application of pop-up geometry.			
Recommended reading:			
ŽIDEK, O.: Geometrické modelovanie a priestorová predstavivosť. Trnava : Pedagogická fakulta Trnavskej univerzity v Trnave, 2013.			
BÉKÉSI, G.: Skladanie papiera - geometrické tvary. Talentum, 2009.			
DESCAMPS, G.: Pop-up 20 papírových 3D projektů pro začátečníky i pokročilé. Cpress, 2021.			
Language requirements: Slovak			

Notes:					
Course evaluation: Assessed students in total: 46					
A	B	C	D	E	FX
78%	11%	7%	0%	2%	2%
Lecturers: doc. RNDr. Milan Matejdes, CSc., examiner, seminary supervisor					
Date of last change: 01.09.2026					
Approved by: doc. RNDr. Dušan Holý, CSc., univer. prof.					