COURSE INFORMATION SHEET

University: Catholic University in Ružomberok	
Faculty: Faculty of Education	
Course code: KPEP/Ep-MD106B/22	**Course title:** Methods of solving mathematical problems in primary education
Type and range of planned learning activities and teaching methods: **Form of instruction:** Seminar **Recommended study range:** **hours weekly:** 2 **hours per semester:** 26 **Teaching method:** on-site	
Credits: 3	**Working load:** 75 hours
Recommended semester/trimester: 2.	
Level of study: II.	
Prerequisities:	
Requirements for passing the course: Verify the degree of acquisition of the relevant knowledge, skills and competences of the student is carried out through theoretical and practical examinations during the semester teaching of the subject. Continuous assessment - 2 continuous written examinations aimed at evaluating theoretical knowledge, the ability to creatively solve problem tasks and look for non-traditional solutions - a maximum of 60 points in total. Semester project - preparation, design, implementation and evaluation of a collection of tasks from a selected topic - 40 points. The final evaluation will be based on the total number of points obtained from the examinations and the semester project.	
Learning outcomes of the course: Objective of the subject: To master different methods and thought processes that we use when solving standard (textbook) and non-standard (mathematical competitions) mathematical tasks, taking into account the different knowledge levels of students. The focus of the subject is the use of simple techniques to solve problems from different areas of mathematics; become familiar with problems that require a creative approach and ingenuity; and at the same time bring the problem solver to a deeper understanding and passion for mathematics. Learning outcomes: After completing the subject, the student will acquire the following knowledge, skills and competences: - the student knows how to solve standard and non-standard tasks from school mathematics using different strategies, whereby by standard we mean tasks from textbooks, by non-standard mainly tasks from mathematical competitions, - the student transforms and applies the acquired knowledge in practical activities, when solving mathematical tasks of varying difficulty with an impact on the 1st grade of elementary school, - the student can assess the correctness of various procedures when solving all types of mathematical problems, - the student is able to create variations of mathematical tasks and tasks of different levels of difficulty, taking into account the student's individual abilities.	
Course contents:	

The process of solving mathematical problems and its phases. Ways of solving mathematical problems - arithmetic, algebraic, geometric. Solution strategies: trial and error, systematic experimentation, estimation-verification-correction. Solution strategy: judgment, solving picture. Solution strategies: equation strategy (linear equation with one unknown, system of two linear equations with two unknowns). Direct and indirect proportionality: judgment, trinomial.
Combinatorics: listing possibilities, combinatorial rule of sum and product. Tasks with graphs and tables. Geometric problems - plane. Geometric problems - space. Tasks from mathematical competitions. Heuristic strategies in solving mathematical problems.

Recommended or required literature:

Language of instruction:

Notes:

Course evaluation:
Assessed students in total: 0

A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0

Name of lecturer(s): RNDr. Lucia Csachová, PhD., Mgr. Lenka Matejčiková, PhD.

Last modification: 23.08.2022

Supervisor(s):
People responsible for the delivery, development and quality of the study programme:
prof. PaedDr. Tomáš Jablonský, PhD., PhDr. ThLic. Martin Taraj, PhD.