

Project name:	Generalizations of arithmetic means and their applications
Description:	<p>A convex function given on a convex set has occupied the attention of mathematicians and related researchers for more than a century. Why is it so important? Because by means of the convex function the simplest mean, the arithmetic one, can be generalized to a large scale. Thus the integral arithmetic mean of an integrable convex function given on a convex set is a general model from which many mathematical means can be derived.</p> <p>Our project will seek to fit the Jensen and Hermite-Hadamard inequalities into the concept of integral arithmetic mean. In doing so, we will mainly use convex functions of several variables. We will also deal with the centers of gravity of multidimensional convex sets. The project will also address the application of convexity to operational research in which some optimization models will be studied in particular.</p>
Webpage:	
Source of finances:	University of Slavonski Brod
Beneficiary:	Mechanical Engineering Faculty, University of Slavonski Brod
Partners:	
Project budget:	497.277,47 HRK
Duration:	March 1, 2020 - September 30, 2022
Location:	Slavonski Brod
Target groups:	Scientists dealing with mathematical means and their applications to operational research.
Objectives:	<p>The goal of our project is to investigate and apply integral arithmetic means from the most important mathematical inequalities such as Jensen and Hermite-Hadamard, through the centers of gravity of convex sets, optimization problems, all the way to weight medians.</p> <p>Since an English teacher is also involved in the project, for the purpose of methodological and teaching acceptability of the project, in our work we will also try to choose acceptable titles, both in English and in Croatian. Sometimes we will look for the roots of the name in Latin.</p>