

EXPERIENCE OF TEACHING AUTOMATION OF ENGINEERING CALCULATIONS WITH PTC MATHCAD PRIME (USA) OF ODABA STUDENTS

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The modern PTC MathCAD Prime program (USA) is included in the traditional training programs for the new generation of engineers in the United States. The PTC Mathcad Prime has ease-of-use and live mathematics and Units intelligence. Most importantly, the calculation capabilities produce far more accurate results [1]. The introduction of the study of the PTC MathCAD Prime software product into the educational process of training specialists in the field of civil engineering will allow Ukrainian engineers to be competitive in the labor market in developed countries.

Impact on Civil Engineering. PTC MathCAD Prime is a valuable tool used by engineers to design and analyze critical infrastructure, including highways, canals, sewers, bridges, high-rise buildings, wastewater treatment plants, and dams. It is used to calculate strain and stress, bending moments, seismic and wind loads, beam analysis, radiant heat transfer, heating and cooling loads, earth structure and composite section properties, power supply of construction sites, and more.

Artificial Intelligence in MathCAD Prime. Artificial Intelligence performs a number of useful functions that facilitate engineering calculations and analysis. Here are some of them: MathCAD Prime offers an expanded set of mathematical symbols and operations that allow you to describe mathematical models more accurately and in more detail; One of the main differences between MathCAD Prime and the regular version of MathCAD is the ability to work with large amounts of data. The limits for data input and processing are much greater in MathCAD Prime than in the basic version; MathCAD Prime offers additional math features and tools that make it more versatile and flexible for professionals.

Students of group CCE-103Engl Prishluyk M.V. and Shershen D.O. used new these program capabilities to solve physical and technical problems and reported their results at the ODABA student conference [2].

Література

1. Engineering with MathCAD Prime <https://www.mathcad.com/en/whats-new>.
2. Prishluyk M.V., Shershen D.O. Automation of engineering calculations in the PTC MATHCAD PRIME environment. Scientific adviser– Vashpanov Yu. Збірник студентських наукових праць за 2023-2024 навчальний рік, Одеса, ОДАБА, 2024, с. 23.