

TECHNICAL UNIVERSITY OF KOŠICE
FACULTY OF MECHANICAL ENGINEERING

CAD SOFTWARE SIMULATIONS IN INDUSTRIAL ENGINEERING

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Introduction

The increasingly individual nature of customer requirements calls for modified, customized products manufactured in ever shorter cycles. Digitalization across the entire value chain requires workers to possess digital competencies and for companies to embrace the concept of a digital twin that minimizes overall costs, ensures flexibility, productivity and product quality. The biggest advances in this regard are in the automotive industry, where increasing digital literacy allows to respond to changing market conditions and to implement ideas into successful cars faster and more efficiently.

The university textbook "CAD software simulations in industrial engineering" provides a systematized summary of knowledge on the creation and use of 3D models in the value chain of a company. Inventor and SolidWorks software tools have been selected for the creation of 3D models, suitable for 3D printing and also for their applications in the context of augmented and mixed reality. The university textbook is enriched with practical demonstrations, processed in the form of case studies implemented at the Department of Industrial and Digital Engineering

The textbook is intended for students in the 1st and 2nd stage of higher education, primarily at the Faculty of Mechanical Engineering of Technical University in Košice as well as faculties of technical orientation, focused on the field of model creation using CAD software and their use in the entire product life cycle, so-called PLM, PDM, etc.

The individual chapters of the university textbook are conceived in relation to the curricula of the subjects taught at the Faculty of Mechanical Engineering of the Technical University in Košice with an emphasis on 3D modeling and application of the created 3D models in practically oriented solutions.

The authors