METADATA

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Abstract

The book is a comprehensive introduction to the technology and methodology of Computer Aided Design (CAD), emphasizing the practical applications of this technology in modern businesses. The aim of the book is to present the basic principles and elements of CAD systems in a way that will enable the use of the relevant tools and familiarization with them by students who do not necessarily have the relevant education or experience/familiarity with the principles and methods of technical drawing and/or mechanical design. In the context of presenting the basic elements, the main techniques of geometric representation/modeling and the basic elements of graphics programming are presented, which form the basis for understanding the operating principles of a CAD system. For a more complete familiarity with the common use of CAD systems, some basic elements of technical construction design are also presented, as well as the main parts of the required equipment. The field of applications initially includes a brief introduction to the product design process and methods. This topic is then specialized, presenting the methodology of Design for Manufacturing/Assembly (DFM/A). Applications of CAD systems for technical studies and analysis (Computer Aided Engineering) and virtual engineering are also presented. The use of CAD systems to support concurrent and collaborative design methods is also briefly presented. Finally, in the context of integrated Computer Integrated Manufacturing (CIM), the role of CAD systems and methods for interfacing them with related technologies (CAM, robots) as well as their relationship with data management systems (PDM - Product Data Management).