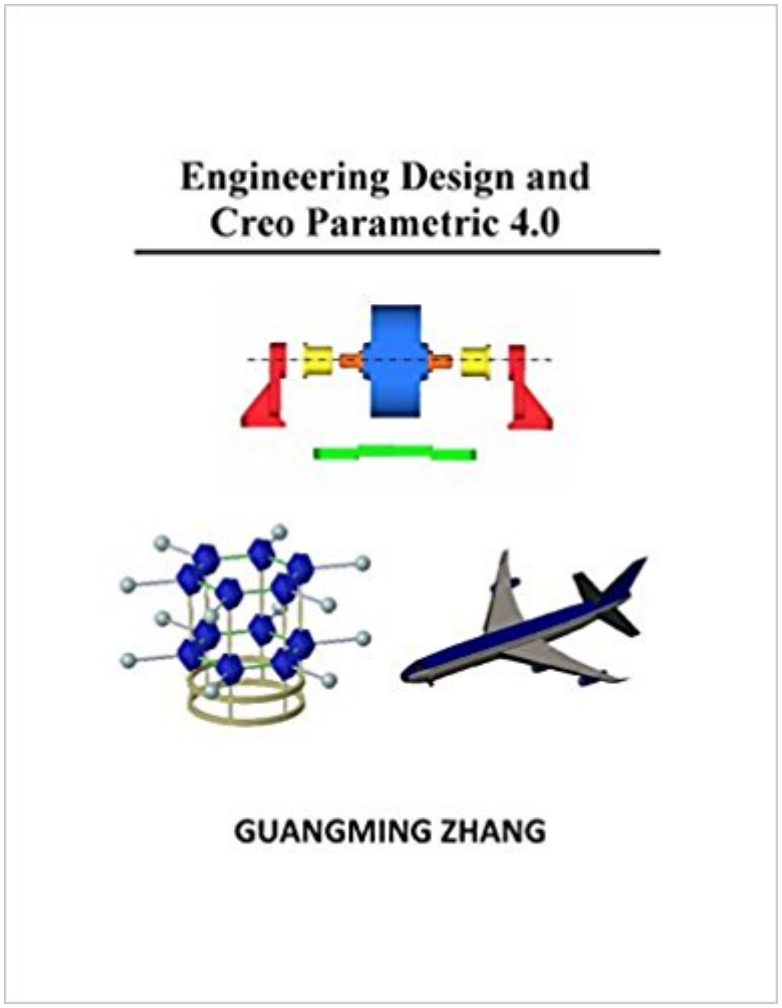
Engineering Design And Creo Parametric 4.0



Synopsis

This book presents a comprehensive treatment of engineering design with a focus on solutions that are based on information technology.Â With the capabilities of computers expanding at an unthinkable pace, the importance of using advanced computer-aided design (CAD) systems in engineering design must be emphasized.Â Creo Parametric, a leading CAD system, is presented in this textbook to demonstrate the role of the computer software in assisting engineers in the design process with efficiency and innovation.Â This book is written as an introductory textbook for undergraduate students in engineering in all specialty areas (e.g., mechanical, aerospace, civil, electrical, chemical, bioengineering, industrial, materials, and fire protection engineering).Â This book should also be useful to those engaged in product design.Â Â Â Â Â Â Â Â Â Â Â Â This book is organized into 8 chapters. The first two chapters provide a fundamental coverage of engineering design.Â They stress the need to follow national and international standards related to engineering graphics, dimensioning, and tolerances. We offer readers with guidelines. Â A systematic description of the Creo ParametricÂ design system is presented in Chapter 3-7.Â Chapter 3 and Chapter 4 cover the feature-based modeling and preparation of engineering drawings.Â Chapter 5 and Chapter 6 cover the subject of creating assemblies. We discuss the basic procedures of how to assemble components step by step. We also detail the steps required to create new components in the assembly process, the approach to using copy geometry to establish the connections between the components, and how to create new files to connect to 3D printing equipment. Chapter 7 focuses on assembly drawings with creating user-defined BOM tables. We also present case studies to detail the procedure of performing dynamic analysis through mechanism.Â Â Chapter 7 also illustrates the steps needed to add surface finish, dimensional and geometric tolerances through case studies. Chapter 7 introduces simulation (FEA) Chapter 8 presents a design project of creating a scaled 3D Model of Boeing 747.Â It must be emphasized that the rapid advancement of digital technology is changing the world of product design. With the new enhancements in Creo Parametric 4.0, the core modeling capabilities of Creo Parametric provide design engineers with unique and smart tools in the design process.Â Â Â Â Â Â Â Â Â Â Â The material covered in this book is an outgrowth of design courses taught by the author at the University of Maryland at College Park.Â This textbook is written in a style adaptable for self-study and reference. Suggestions for improving the contents are welcome and the author deeply appreciate the efforts made by the readers in this regards.

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