

Catia For Design And Engineering Sdc Publications

A fully illustrated guide to CATIA® V5R21 CATIA Core Tools: Computer-Aided Three-Dimensional Interactive Application explains how to use the essential features of this cutting-edge solution for product design and innovation. The book begins with the basics, such as launching the software, configuring the settings, and managing files. Next, you'll learn about sketching, modeling, drafting, and visualization tools and techniques. Easy-to-follow instructions along with detailed illustrations and screenshots help you get started using several CATIA workbenches right away. Reverse engineering--a valuable product development skill--is also covered in this practical resource. Covers key CATIA workbenches, including: Part Design Workbench Assembly Design Workbench Drafting Workbench Generative Shape Design Workbench DMU Kinematics Workbench Functional Tolerancing and Annotations Workbench Aerospace Sheet Metal Design Workbench Composites Design Workbench Digitalized Shape Editor Workbench Quick Surface Reconstruction Workbench

Are you tired of repeating those same time-consuming CATIA processes over and over? Worn out by thousands of mouse clicks? Don't you wish there were a better way to do things? What if you could rid yourself those hundreds of headaches by teaching yourself how to program macros while impressing your bosses and coworkers in the process? VB Scripting for CATIA V5 is the most complete guide to teach you how to write macros for CATIA V5! Through a series of example codes and tutorials you'll learn how to unleash the full power and potential of CATIA V5. No programming experience is required! This text will cover the core items to help teach beginners important concepts needed to create custom CATIA macros. More importantly, you'll learn how to solve problems and what to do when you get stuck. Once you begin to see the patterns you'll be flying along on your own in no time. Visit scripting4v5.com to see what readers are saying, like: "I have recently bought your book and it amazingly helped my CATIA understanding. It does not only help you with macro programming but it helps you to understand how the software works which I find a real advantage."

"[This] is a collection of tutorials meant to familiarize the reader with CATIA's mechanical design workbenches. The reader is not required to have any previous CATIA knowledge."--P. i.

Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

This textbook explains how to create solid models, assemblies and drawings using CATIA V5. CATIA is a three dimensional CAD/CAM/CAE software developed by Dassault Systèmes, France. This textbook is based on CATIA V5 Release 21. Users of earlier releases can use this book with minor modifications. We provide files for exercises via our website. All files are in Release 19 so readers can open the files using later releases of CATIA V5. It is assumed that readers of this textbook have no prior experience in using CATIA V5 for modeling 3D parts. This textbook is suitable for anyone interested in learning 3D modeling using CATIA V5. Each chapter deals with the major functions of creating 3D features using simple examples and step by step self-paced exercises. Additional drawings of 3D parts are provided at the end of each chapter for further self exercises. The final exercises are expected to be completed by readers who have fully understood the content and completed the exercises in each chapter. Topics covered in this textbook - Chapter 1: Basic component of CATIA V5 software, options and mouse operation. - Chapter 2: Basic step by step modeling process of CATIA V5. - Chapter 3 through 6: Creating sketches and sketch based features. - Chapter 7: Usage of reference elements to create complex 3D geometry. - Chapter 8: Dress-up features such as fillet, chamfer, draft and shell. - Chapter 9: Modification of 3D parts to take advantage of parametric modeling concepts. - Chapter 10: Creating complex 3D parts by creating multiple bodies and applying boolean operations. - Chapter 11: Copying or moving geometrical bodies. - Chapter 12 and 13: Constructing assembly structures and creating or modifying 3D parts in the context of assembly. - Chapter 14 and 15: Creating drawings for parts or assemblies. - Chapter 16: Advanced functions in creating a solid part such as a rib, stiffener and multi-sections solid.

The book introduces the fundamentals and development of Computer aided design, Computer aided process planning, and Computer aided manufacturing. The integration of CAD/CAPP/CAM, product data management and Concurrent engineering and collaborative design etc. are also illustrated in detail, which make this book be an essential reference for graduate students, scientists and practitioner in the research fields of computer sciences and engineering.

CATIA V5 Tutorials Mechanism Design and Animation Releases 18 is composed of several tutorial style lessons. This book is intended to be used as a training guide for those who have a basic familiarity with part and assembly modeling in CATIA V5 Release 18 wishing to create and simulate the motion of mechanisms within CATIA Digital Mock Up (DMU). The tutorials are written so as to provide a hands-on look at the process of creating an assembly, developing the assembly into a mechanism, and simulating the motion of the mechanism in accordance with some time based inputs. The processes of generating movie files and plots of the kinematic results are covered. The majority of the common joint types are covered. Students majoring in engineering/technology, designers using CATIA V5 in industry, and practicing engineers can easily follow the book and develop a sound yet practical understanding of simulating mechanisms in DMU.

This book contains the papers presented at the International Joint Conference on Mechanics, Design Engineering and Advanced Manufacturing (JCM 2018), held on 20-22 June 2018 in Cartagena, Spain. It reports on cutting-edge topics in product design and manufacturing, such as industrial methods for integrated product and process design; innovative design; and computer-aided design. Further topics covered include virtual simulation and reverse engineering; additive manufacturing; product manufacturing; engineering methods in medicine and education; representation techniques; and nautical, aeronautics and aerospace design and modeling. The book is divided into six main sections, reflecting the focus and primary themes of the conference. The contributions presented here will not only provide researchers, engineers and experts in a range of industrial engineering subfields with extensive information to support their daily work; they are also intended to stimulate new research directions, advanced applications of the methods discussed, and future interdisciplinary collaborations.

CATIA V5-6R2015 for Designers is a comprehensive textbook written with the intention of helping the readers effectively use all solid modeling tools and other features of CATIA V5-6R2015. This textbook provides elaborative and clear explanation of the tools of all commonly used workbenches of CATIA V5-6R2015. After reading this textbook, you will be able to create, assemble, and draft models. The chapter on the DMU Kinematics workbench will enable the users to create, edit, simulate, and analyze different mechanisms dynamically. The chapter on the FreeStyle workbench will enable the users to dynamically design and manipulate surfaces. The textbook explains the concepts through real-world examples and the tutorials used in this textbook ensure that the users can relate the knowledge gained from this textbook with the actual mechanical industry designs. In this edition, a chapter on Generative Shape Design has been added that explains mechanical engineering industry examples.

The book introduces the reader to CATIA V5R16, one of the world's leading parametric solid modeling packages. In this textbook, the author emphasizes on the solid modeling techniques that improve the productivity and efficiency of the user. The chapters in this textbook are structured in a pedagogical sequence that makes it very effective in learning the features and capabilities of the software. · Drawing Sketches in the Sketcher Workbench - I· Drawing Sketches in the Sketcher Workbench - II· constraining Sketches and Creating Base Features· Reference Elements and Sketch-Based Features· Creating Dress-Up and Hole Features· Editing Features· Transformation Features and Advanced Modeling Tools - I· Advanced Modeling Tools - II· Working with the WireFrame and Surface Design Workbench· Editing and Modifying Surfaces· Assembly Modeling· Working with the Drafting Workbench - I· Working with the Drafting Workbench - II

This book provides a key understanding of CATIA which is a solid modeling software. By using screen shots of step-by-step training, the reader will obtain comprehensive knowledge of all tools provided in CATIA for use in a variety of engineering fields. The book introduces CATIA basics, covers part design, discusses sheet metal design, talks about assembly, presents drawings and shows modeling of an engineered component. The primary aim of this book is to assist in learning the use of CATIA software through examples taken from various areas of engineering. The content and treatment of the subject matter is most appropriate for university students studying engineering and practicing engineers who wish to learn the use of CATIA.

This book is developed from the ground up to cover the syllabus announced by the AICTE in its latest model curriculum. It provides insights into traditional engineering graphics as well as treats of the subject using software AutoCAD, CATIA and ANSYS, through simple and well-explained examples along with an ample number of unsolved problems and MCQs. Screenshots have been provided after every step, making it simple to learn how to use the software for a specific solution. It targets all academics—students, and researchers as well as industry practitioners and engineers, involved in engineering drafting. The book begins by introducing the role and application of engineering drawing and describing such basics as the types of drawing sheets, lines, planes, quadrants and angles of projection, and national and international drawing standards which it calls the basic grammar for engineering graphics as a language. The book introduces the software—AutoCAD, CATIA and ANSYS emphasizing on their specific features. Equipping the reader with this ground knowledge it comes to the nitty-gritty of drawing various curves, projection of points in separate quadrants, projection of straight lines in various positions, various projections of plane surfaces, and solids like prism, pyramid, cylinder and cone. It then goes further to sections of solids wherein the placements of the cutting planes have been explained in various positions like perpendicular, parallel, and inclined to HP and VP. Having thus trained the drafter in handling the drafting tools the book graduates to more complicated material like fusion of one solid shape into another. It explores various types of them so that development of lateral surfaces of solids can be made and depicted isometrically and projected orthographically. Lastly, the book describes 3D modelling using CATIA, where solid models are drawn, and how 2D analysis is done using ANSYS. The CATIA V5-6R2017: Advanced Part Design learning guide is ideal for experienced CATIA users who want to extend their modeling abilities with advanced functionality and techniques. This extensive hands-on guide contains numerous projects focused on process-based exercises to give students practical experience while improving design

productivity. Students will learn techniques for reusing data, tackling complex geometry, using wireframe, working through feature failure, and investigating the model with analysis tools. Topics Covered Effective modeling practices and design methodology review Advanced multi-section solid and rib/slot operations Advanced draft and fillet creation and troubleshooting techniques Advanced patterning techniques and user patterns PowerCopy creation and instantiation Design tables Catalog creation Creating and managing multi-model links Multi-body modeling techniques Performing Boolean operations Knowledge Templates Wireframe Lines and Curves Analysis Tools Feature Failure Resolution Thickness, Remove Face and Replace Face features Introduction to Automation Project Exercises Prerequisites CATIA V5-6 R2017: Introduction to Modeling, plus 80 hours of CATIA experience.

"This book of tutorials is intended as a training guide for those who have a basic familiarity with part and assembly modeling in CATIA V5 Release 20 wishing to create and simulate the motions of mechanisms within CATIA Digital Mockup (DMU)."--Preface.

Special Features: · Tutorial Approach· Real-World Projects as Tutorials:· Heavily Illustrated text with Tips and Notes· Self Evaluation Test, Review Questions, and Exercises

About The Book: This book introduces the readers to CATIA V5R20, one of the world's leading parametric solid modeling packages. In this textbook, the author emphasizes on solid modeling techniques that improve the productivity and efficiency of the users. The chapters on this textbook are structured in a pedagogical sequence that makes it very effective in learning the features and capabilities of the software.

CAD Modeling Essentials in 3DEXPERIENCE 2016x Using CATIA Applications is written for those who want to learn the basics of CAD using the CATIA application in the 3DEXPERIENCE platform. This book uses a series of simple, easy to follow, tutorials to take you from a complete novice to an intermediate user. There is no secret that the best way to learn and master a software is by personal exploration which is strictly curiosity driven. Needless to say, although this may be the best strategy, it is extremely inefficient and very frustrating. The purpose of this book is to provide you with a solid understanding of how to use the most commonly used tools on a range of topics dealing with CAD. Once you have gained a proficient understanding of how to use the basic tools you will be much better prepared to further explore 3DEXPERIENCE on your own. The purpose of this book is to introduce you to the bare essentials of the 3DEXPERIENCE platform in the context of CAD functionalities using CATIA. It is by no means intended to be a comprehensive or completely organized approach to all the available features. The goal is to merely show you the ropes and leave further exploration to you. If you have previous experience using CATIA many of the features in the 3DEXPERIENCE CAD applications have been directly incorporated into the CATIA 3DEXPERIENCE application. This is particularly true in the case of Part Design and the Generative Shape Design currently available in CATIA V5. There have been significant changes in the Assembly Design application. If you are a first time user with no previous experience with CATIA V5, there is no reason to despair as the tutorial approach of this book will provide you the necessary skills to start using 3DEXPERIENCE with easy to follow tutorials.

Mechanisms are an integral part of our daily life and have been around since the dawn of human civilization. A critical aspect of designing mechanism is the proper use and design of joints. There are many types of joints that are used in the design of mechanisms, each with its own strengths, weakness, and uses. If you are involved in the design of mechanisms you'll want to be aware of all of the major joint types, how to include them in your own designs, and how to run simulations to ensure they behave the way you intend. This book is intended as a training guide for anyone who has a basic familiarity with CAD Modeling using the CATIA application in the 3DEXPERIENCE platform and wishing to create and simulate the motion of mechanisms using the SIMULIA/CATIA applications. Throughout the course of this book all the most common joint types are covered. Each chapter of this book is designed to be reasonably independent of each other allowing you to pick specific topics of interest without the need to go through the previous chapters. Of course this has resulted in some duplication but it allows you the freedom to work through the book in the way that best fits your needs. Students majoring in engineering/technology, designers in industry, and practicing engineers who are using 3DEXPERIENCE will easily be able to follow the steps in this book and develop a sound yet practical understanding of simulating mechanisms in this powerful software.

"[This] textbook introduces the reader to CATIA V5R19, one of the world's leading parametric solid modeling packages. In this textbook, the author emphasizes on the solid modeling techniques that improve the productivity and efficiency of the users."--Back cover.

CATIA V5-6R2019 for Designers is a comprehensive book written with the intention of helping the readers effectively use all solid modeling tools and other features of CATIA V5-6R2019. This book provides elaborative and clear explanation of the tools of all commonly used workbenches of CATIA V5-6R2019. After reading this book, you will be able to create, assemble, and draft models. The chapter on the DMU Kinematics workbench will enable the users to create, edit, simulate, and analyze different mechanisms dynamically. The chapter on the FreeStyle workbench will enable the users to dynamically design and manipulate surfaces. The book explains the concepts through real-world examples and the tutorials used in this book ensure that the users can relate the knowledge gained from this book with the actual mechanical industry designs. Salient Features: Consists of 19 chapters that are organized in a pedagogical sequence. Tutorial approach to explain the concepts of CATIA V5-6R2019. Hundreds of illustrations and a comprehensive coverage of CATIA V5-6R2019 concepts and techniques. Additional learning resources at 'allaboutcadcam.blogspot.com'. Table of Contents Chapter 1: Introduction to CATIA V5-6R2019 Chapter 2: Drawing Sketches in the Sketcher Workbench-I Chapter 3: Drawing Sketches in the Sketcher Workbench-II Chapter 4: Constraining Sketches and Creating Base Features Chapter 5: Reference Elements and Sketch-Based Features Chapter 6: Creating Dress-Up and Hole Features Chapter 7: Editing Features

Chapter 8: Transformation Features and Advanced Modeling Tools-I Chapter 9: Advanced Modeling Tools-II Chapter 10: Working with the Wireframe and Surface Design Workbench Chapter 11: Editing and Modifying Surfaces Chapter 12: Assembly Modeling Chapter 13: Working with the Drafting Workbench-I Chapter 14: Working with the Drafting Workbench-II Chapter 15: Working with Sheet Metal Components Chapter 16: DMU Kinematics Chapter 17: Introduction to Generative Shape Design Chapter 18: Working with the FreeStyle Workbench Chapter 19: Introduction to FEA and Generative Structural Analysis Student Projects Index

The CATIA V5-6R2015: Advanced Surface Design student guide expands on the knowledge learned in the CATIA: Introduction to Surface Design student guide by covering advanced curve and surface topics found in the Generative Shape Design Workbench. Topics include: advanced curve construction, advanced swept, blend and offset surface construction, complex fillet creation, and the use of laws. Curve and surface analysis are introduced to validate the student's geometry. Tools and methods for rebuilding geometry are also discussed. As with the CATIA: Introduction to Surface Design student guide, meeting model specifications (such as continuity settings) remains forefront in introducing tools and methodologies. Topics Covered Surface Design Overview Advanced Wireframe Elements Curve Analysis and Repair Swept Surfaces Blend Surfaces Adaptive Sweep Laws Advanced Surface Fillets Alternative Filleting Methods Duplication Tools Knowledge Templates Surface Analysis and Repair Offset Surfaces Project Exercises Prerequisites CATIA V5-6 R2015: Introduction to Surface Design is recommended.

CATIA V5 Tutorials Mechanism Design and Animation Release 19 is composed of several tutorial style lessons. This book is intended to be used as a training guide for those who have a basic familiarity with part and assembly modeling in CATIA V5 Release 19 wishing to create and simulate the motion of mechanisms within CATIA Digital Mock Up (DMU). The tutorials are written so as to provide a hands-on look at the process of creating an assembly, developing the assembly into a mechanism, and simulating the motion of the mechanism in accordance with some time based inputs. The processes of generating movie files and plots of the kinematic results are covered. The majority of the common joint types are covered. Students majoring in engineering/technology, designers using CATIA V5 in industry, and practicing engineers can easily follow the book and develop a sound yet practical understanding of simulating mechanisms in DMU. The chapters of CATIA V5 Tutorials Mechanism Design and Animation Release 19 are designed to be used independent of each other allowing the user to pick specific topics of interest without having to go through the previous chapters.

CATIA Exercises Do you want to learn how to design 2D and 3D models in your favorite Computer Aided Design (CAD) software such as Catia or SolidWorks? Look no further. We have designed 200 CAD exercises that will help you to test your CAD skills. What's included in the Catia Exercises book? Whether you are a beginner, intermediate, or an expert, these CAD exercises will challenge you. The book contains 200 3D models and practice drawings or exercises. *Each exercise contains images of the final design and exact measurements needed to create the design. *Each exercise can be designed on any CAD software which you desire. It can be done with AutoCAD, SolidWorks, Inventor, DraftSight, Fusion 360, Solid Edge, NX, PTC Creo and other feature-based CAD modeling software. *It is intended to provide Drafters, Designers and Engineers with enough CAD exercises for practice on Catia. *It includes almost all types of exercises that are necessary to provide, clear, concise and systematic information required on industrial machine part drawings. *Third Angle Projection is intentionally used to familiarize Drafters, Designers and Engineers in Third Angle Projection to meet the expectation of worldwide Engineering drawing print. *This book is for Beginner, Intermediate and Advance CAD users. *Clear and well drafted drawing help easy understanding of the design. *These exercises are from Basics to Advance level. *Each exercises can be assigned and designed separately. *No Exercise is a prerequisite for another. All dimensions are in mm. Prerequisite To design & develop models, you should have knowledge of SolidWorks. Student should have knowledge of Orthographic views and projections. Student should have basic knowledge of engineering drawings.

The CATIA V5-6R2017: Advanced Surface Design learning guide expands on the knowledge learned in the CATIA: Introduction to Surface Design learning guide by covering advanced curve and surface topics found in the Generative Shape Design Workbench. Topics include: advanced curve construction, advanced swept, blend and offset surface construction, complex fillet creation, and the use of laws. Curve and surface analysis are introduced to validate the student's geometry. Tools and methods for rebuilding geometry are also discussed. As with the CATIA: Introduction to Surface Design learning guide, meeting model specifications (such as continuity settings) remains forefront in introducing tools and methodologies. Topics Covered Surface Design Overview Advanced Wireframe Elements Curve Analysis and Repair Swept Surfaces Blend Surfaces Adaptive Sweep Laws Advanced Surface Fillets Alternative Filleting Methods Duplication Tools Knowledge Templates Surface Analysis and Repair Offset Surfaces Project Exercises Prerequisites CATIA V5-6R2017: Introduction to Surface Design is recommended.

This textbook explains how to perform Finite Element Analysis using the Generative Structural Analysis workbench in CATIA V5. CATIA is a three dimensional CAD/CAM/CAE software developed by Dassault Systems, France. This textbook is based on CATIA V5 Release 21. Users of earlier releases can use this book with minor modifications. It is assumed that readers of this textbook are familiar with creating parts and assemblies in CATIA V5. However, any persons not familiar with CATIA V5 modeling and assembly but interested in FEA can learn through the step by step processes laid out in this textbook, such as naming a part file, creating a 3D model for analysis or defining an FE model. Each process is accompanied by illustrations. Each chapter deals with a major topic in FEA and proceeds with an analysis procedure using CATIA V5 Structural Analysis. At the end of each chapter the author explains the meaning of the results and recommends additional topics to be considered. Engineers and mechanical engineering students are highly recommended to read this textbook to increase their knowledge of FEA by using CATIA V5 Generative Structural Analysis. Topics covered in this textbook - General concepts of FEA - Singularity in static analysis - Effects of fillets and stiffeners - Bearing loads and reflective symmetry - Rotational loads and cyclic symmetry - Use of a coordinate system in defining boundary conditions and loads - Using two dimensional and one dimensional elements - Connections: Seam weld, rigid, bolt, pressure fit and contact - Applying loads with enforced displacement - Automatic mesh adaptation - Using the temperature effect in static analysis - Buckling and normal mode analysis"

The CATIA V5-6R2018: Introduction to Surface Design learning guide introduces the fundamentals of creating wireframe and surface geometry. This guide takes an in-depth look at process-based modeling techniques used to develop robust and flexible surface geometry. With the design intent as the focus, you learn about shape and continuity settings for simple and complex geometry types. Topics Covered Surfacing terminology Surface design process Creating wireframe geometry Creating simple surfaces Creating complex surfaces Performing operations on wireframe and surface geometry Working with surface geometry in the Part Design Workbench Geometrical Element Management Surface Fillets Boundary Representations Best practices for surface modeling Prerequisites Access to the V5-6R2018 version of the software, to ensure compatibility with this guide. Future software updates that are released by Dassault Systèmes may include changes that are not reflected in this guide. The practices and

files included with this guide might not be compatible with prior versions (i.e., V5-6R2017). Completion of the CATIA V5-6R2018: Introduction to Modeling course is recommended.

Write powerful, custom macros for CATIA V5 CATIA V5 Macro Programming with Visual Basic Script shows you, step by step, how to create your own macros that automate repetitive tasks, accelerate design procedures, and automatically generate complex geometries. Filled with full-color screenshots and illustrations, this practical guide walks you through the entire process of writing, storing, and executing reusable macros for CATIA® V5. Sample Visual Basic Script code accompanies the book's hands-on exercises and real-world case studies demonstrate key concepts and best practices. Coverage includes: CATIA V5 macro programming basics Communication with the environment Elements of CATParts and CATProducts 2D wireframe geometry 3D wireframe geometry and surfaces Solid features Object classes VBScript commands

An Introduction to CATIA V6 Release 2012 is a collection of tutorials meant to familiarize you with CATIA's Mechanical Design and Shape workbenches. Designed for beginners, this book assumes that you have no previous experience using CATIA. The book's hands-on approach is designed to get you right into CATIA and start drawing right from the start. You will learn by doing, not just reading. The author helps you explore all the major features of CATIA and directs you to CATIA's online documentation for a more detailed description of the commands when appropriate. The workbenches covered in this book are; Sketcher, Part Design, Assembly Design, Drafting, Generative Surface Design, and Imagine and Shape. Preceding each tutorial is a brief description of the workbench, toolbars, and commands to be used and focused on within the tutorial.

Professional publication of the RD & A community.

CATIA for Designers V5 R14 introduces the reader to CATIA V5 R14, one of the world's leading parametric solid modeling packages In this book, the author emphasizes on those techniques of solid modeling that improve the productivity of the user and also increase his efficiency.

CATIA V5-6R2017 for Designers is a comprehensive book written with the intention of helping the readers effectively use all solid modeling tools and other features of CATIA V5-6R2017. This book provides elaborate and clear explanation of tools of all commonly used workbenches of CATIA V5-6R2017. After reading this book, you will be able to create, assemble, and draft models. The chapter on the DMU Kinematics workbench will enable the users to create, edit, simulate, and analyze different mechanisms dynamically. The chapter on Generative Shape Design explains the concept of hybrid designing of models. Also, it enable the users to quickly model both simple and complex shapes using wireframe, volume and surface features. The chapter on the FreeStyle workbench will enable the users to dynamically design and manipulate surfaces. In this book, a chapter on FEA and structural analysis has been added to help users to analyze their own designs by calculating stresses and displacements using various tools available in the Advanced Meshing Tools and Generative Structural Analysis workbenches of CATIA V5-6R2017. The book explains the concepts through real-world examples and the tutorials used in this book. After reading this book, the users will be able to create solid parts, sheet metal parts, assemblies, weldments, drawing views with bill of materials, presentation views to animate the assemblies, analyze their own designs and apply direct modeling techniques to facilitate rapid design prototyping. Also, the users will learn the editing techniques that are essential for making a successful design. Salient Features Consists of 19 chapters that are organized in a pedagogical sequence. Detailed explanation of CATIA V5-6R2017 tools. First page summarizes the topics covered in the chapter. Hundreds of illustrations and comprehensive coverage of CATIA V5-6R2017 concepts and techniques. Step-by-step instructions that guide the users through the learning process. More than 40 real-world mechanical engineering designs as tutorials and projects. Technical support by contacting techsupport@cadcam.com. Additional learning resources at <https://allaboutcadcam.blogspot.com> Table of Contents Chapter 1: Introduction to CATIA V5-6R2017 Chapter 2: Drawing Sketches in the Sketcher Workbench-I Chapter 3: Drawing Sketches in the Sketcher Workbench-II Chapter 4: Constraining Sketches and Creating Base Features Chapter 5: Reference Elements and Sketch-Based Features Chapter 6: Creating Dress-Up and Hole Features Chapter 7: Editing Features Chapter 8: Transformation Features and Advanced Modeling Tools-I Chapter 9: Advanced Modeling Tools-II Chapter 10: Working with the Wireframe and Surface Design Workbench Chapter 11: Editing and Modifying Surfaces Chapter 12: Assembly Modeling Chapter 13: Working with the Drafting Workbench-I Chapter 14: Working with the Drafting Workbench-II Chapter 15: Working with the Sheet Metal Components Chapter 16: DMU Kinematics Chapter 17: Introduction to Generative Shape Design Chapter 18: Working with the FreeStyle Workbench Chapter 19: Introduction to FEA and Generative Structural Analysis Index

CATIA V5-6R2018 for Designers is a comprehensive book written with the intention of helping the readers effectively use all solid modeling tools and other features of CATIA V5-6R2018. This book provides elaborate and clear explanation of the tools of all commonly used workbenches of CATIA V5-6R2018. After reading this book, you will be able to create, assemble, and draft models. The chapter on the DMU Kinematics workbench will enable the users to create, edit, simulate, and analyze different mechanisms dynamically. The chapter on the FreeStyle workbench will enable the users to dynamically design and manipulate surfaces. The book explains the concepts through real-world examples and the tutorials ensure that the users can relate the knowledge gained from this book with the actual mechanical industry designs. Salient Features: Consists of 19 chapters that are organized in a pedagogical sequence. Hundreds of illustrations and a comprehensive coverage of CATIA V5-6R2018 Concepts & Techniques. Self-Evaluation Tests and Review Questions provided at the end of each chapter to help users assess their knowledge. Additional learning resources at 'allaboutcadcam.blogspot.com' Table of Contents Chapter 1: Introduction to CATIA V5-6R2018 Chapter 2: Drawing Sketches in the Sketcher Workbench-I Chapter 3: Drawing Sketches in the Sketcher Workbench-II Chapter 4: Constraining Sketches and Creating Base Features Chapter 5: Reference Elements and Sketch-Based Features Chapter 6: Creating Dress-Up and Hole Features Chapter 7: Editing Features Chapter 8: Transformation Features and Advanced Modeling Tools-I Chapter 9: Advanced Modeling Tools-II Chapter 10: Working with the Wireframe and Surface Design Workbench Chapter 11: Editing and Modifying Surfaces Chapter 12: Assembly Modeling Chapter 13: Working with the Drafting Workbench-I Chapter 14:

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This workbook is an introduction to the main Workbench functions CATIA V5 has to offer. The book's objective is to instruct anyone who wants to learn CATIA V5 through organized, graphically rich, step-by-step instructions on the software's basic processes and tools. This book is not intended to be a reference guide. The lessons in this workbook present basic real life design problems along with the workbenches, toolbars, and tools required to solve these problems. Each lesson is presented with step-by-step instructions. Although most of the steps are detailed for the beginner, the steps and processes are numbered and bolded so the more experienced user can go directly to the subject area of interest. Each lesson consists of an introduction, objectives, an introduction to the workbench and toolbars used in the lesson, step-by-step instructions, and concludes with a summary. Review questions and additional practice exercises are at the end of each lesson. The workbenches covered in this workbook are Sketcher, Part Design, Drafting, Assembly Design, Generative Shape Design, DMU Navigator and Rendering/Real Time Rendering, Knowledgeware, Kinematics, and Generative Structural Analysis.

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