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KEY=PARAMETRIC - VALERIE LETICIA

Parametric Modeling with SOLIDWORKS 2017 SDC Publications Parametric Modeling with SOLIDWORKS 2017 contains a series of seventeen tutorial style lessons designed to introduce SOLIDWORKS 2017, solid modeling and parametric modeling techniques and concepts. This book introduces SOLIDWORKS 2017 on a step-by-step basis, starting with constructing basic shapes, all the way through to the creation of assembly drawings and motion analysis. This book takes a hands on, exercise intensive approach to all the important parametric modeling techniques and concepts. Each lesson introduces a new set of commands and concepts, building on previous lessons. The lessons guide the user from constructing basic shapes to building intelligent solid models, assemblies and creating multi-view drawings. This book also covers some of the more advanced features of SOLIDWORKS 2017, including how to use the SOLIDWORKS Design Library, basic motion analysis, collision detection and analysis with SimulationXpress. The exercises in this book cover the performance tasks that are included on the Certified SOLIDWORKS Associate (CSWA) Examination. Reference guides located at the front of the book and in each chapter show where these performance tasks are covered. This book also introduces you to the general principles of 3D printing including a brief history of 3D printing, the types of 3D printing technologies, commonly used filaments, and the basic procedure for printing a 3D model. 3D printing makes it easier than ever for anyone to start turning their designs into physical objects and by the end of this book you will be ready to start printing out your own designs. Parametric Modeling with SOLIDWORKS 2018 SDC Publications Parametric Modeling with SOLIDWORKS 2018 contains a series of seventeen tutorial style lessons designed to introduce SOLIDWORKS 2018, solid modeling and parametric modeling techniques and concepts. 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At the end of this book, you will have a fairly good understanding of the SolidWorks interface and the most commonly used commands for part modeling, assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials. The book focuses on the processes to complete the modeling of a part, instead of focusing on individual software commands or operations, which are generally simple enough to learn. The author strived hard to include the commands required in the Certified SolidWorks Associate test as listed on the SolidWorks website, as well as several more. SolidWorks is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before. Most commands covered in this book have advanced options, which may not be covered in this book. This is meant to be a starting point to help new users to learn the basic and most frequently used commands. Parametric Modeling with Autodesk Inventor 2013 SDC Publications Parametric Modeling with Autodesk Inventor 2013 contains a series of sixteen tutorial style lessons designed to introduce Autodesk Inventor, solid modeling, and parametric modeling. It uses a hands-on, exercise-intensive approach to all the import parametric modeling techniques and concepts. The lessons guide the user from constructing basic shapes to building intelligent mechanical designs, creating multi-view drawings and assembly models. Other featured topics include sheet metal design, motion analysis, 2D design reuse, collision and contact, stress analysis and the Autodesk Inventor 2013 Certified Associate Examination. Parametric Modeling with SOLIDWORKS 2015 SDC Publications Parametric Modeling with SOLIDWORKS 2015 contains a series of sixteen tutorial style lessons designed to introduce SOLIDWORKS 2015, solid modeling and parametric modeling techniques and concepts. 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It develops command sequences to achieve CAD and modeling tasks, providing SolidWorks syntax and details. Starting with a CAD task to accomplish, the book then goes about how to accomplish it, motivating students to learn more than simply going through layers of menus and commands. Intended for design courses, the book uses a minimal amount of mathematical concepts, covering basic math in Chapter 8 (Curves), Chapter 9 (Surfaces), and Chapter 13 (Analysis Tools). Intended for design courses, the book uses a minimal amount of mathematical concepts, covering basic math in Chapter 8 (Curves), Chapter 9 (Surfaces), and Chapter 13 (Analysis Tools). • Shows concepts to those who are curious about how CAD/CAM systems work "under the hood." • Broadens the book appeal to many students, professors, and readers. • The coverage of math in chapters 8, 9, and 13 may be ignored without affecting the continuity of the material in those chapters. Step-by-Step instructions help students learn SolidWorks as a design system rather than a software program. • Ample illustrations guide students as they learn. Tutorials offer comprehensive coverage of a full design task. • Each tutorial ends with a hands-on exercise that both challenges the student's understanding and extends it. Examples with Solutions cover a single concept in detail. • Each example offers a hands-on exercise that builds on the

previous example, ensuring the student has gone through each example. Each chapter includes challenging modeling and design examples and problems. • The book's unique approach covers the theoretical concepts behind the various functions of SolidWorks. • This sheds light about why things work the way they do, as well as explains their limitations and uses. Product Design Modeling Using CAD/CAE Discusses virtual mockup of the product that is first created in the CAD environment. The critical design parameterization that converts the product solid model into parametric representation, enabling the search for better designs, is an indispensable element of practicing the e-Design paradigm, especially in the detailed design stage. Cognitive Infocommunications, Theory and Applications Springer The book gathers the chapters of Cognitive Infocommunication research relevant to a variety of application areas, including data visualization, emotion expression, brain-computer interfaces or speech technologies. It provides an overview of the kind of cognitive capabilities that are being analyzed and developed. Based on this common ground, it may become possible to see new opportunities for synergy among disciplines that were heretofore viewed as being separate. Cognitive Infocommunication begins by modeling human cognitive states and aptitudes in order to better understand what the user of a system is capable of comprehending and doing. The patterns of exploration and the specific tools that are described can certainly be of interest and of great relevance for all researchers who focus on modeling human states and aptitudes. This innovative research area provides answers to the latest challenges in influence of cognitive states and aptitudes in order to facilitate learning or generally improve performance in certain cognitive tasks such as decision making. Some capabilities are purely human, while others are purely artificial, but in general this distinction is rarely clear-cut. Therefore, when discussing new human cognitive capabilities, the technological background which makes them possible cannot be neglected, and indeed often plays a central role. This book highlights the synergy between various fields that are perfectly fit under the umbrella of CogInfoCom and contribute to understanding and developing new, human-artificial intelligence hybrid capabilities. These, merged capabilities are currently appearing, and the importance of the role they play in everyday life are unique to the cognitive entity generation that is currently growing up. BIM Handbook A Guide to Building Information Modeling for Owners, Designers, Engineers, Contractors, and Facility Managers John Wiley & Sons 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. Solidworks 2014 A Tutorial Approach SolidWorks, developed by SolidWorks Corporation, is one of the world's fastest growing solid modeling software. It is a parametric feature-based solid modeling tool that not only unites the three-dimensional (3D) parametric features with two-dimensional (2D) tools, but also addresses every design-through-manufacturing process. The latest in the family of SolidWorks, SolidWorks 2014, includes a number of customer suggested enhancements, substantiating that it is completely tailored to the customer's needs. Based mainly on the user feedback, this solid modeling tool is remarkably user-friendly and it allows you to be productive from day one. In SolidWorks, the 2D drawing views of the components are easily generated in the Drawing mode. The drawing views that can be generated include detailed, orthographic, isometric, auxiliary, section, and so on. You can use any predefined standard drawing document to generate the drawing views. Besides displaying the model dimensions in the drawing views or adding reference dimensions and other annotations, you can also add the parametric Bill of Materials (BOM) and balloons in the drawing view. If a component in the assembly is replaced, removed, or a new component is assembled, the modification will be automatically reflected in the BOM placed in the drawing document. The bidirectional associative nature of this software ensures that any modification made in the model is automatically reflected in the drawing views and any modification made in the dimensions in the drawing views automatically updates the model. Drawing and Detailing with SolidWorks 2014 SDC Publications Drawing and Detailing with SolidWorks 2014 is written to educate and assist students, designers, engineers, and professionals in the drawing and detailing tools of SolidWorks. Explore the learning process through a series of design situations, industry scenarios, projects, and objectives target towards the beginning to intermediate SolidWorks user. Work through numerous activities to create multiple-view, multiple-sheet, detailed drawings, and assembly drawings. Develop Drawing templates, Sheet formats, and Custom Properties. Construct drawings that incorporate part configurations, assembly configurations, and design tables with equations. Manipulate annotations in parts, drawings, assemblies, Revision tables, Bills of Materials and more. Apply your drawing and detailing knowledge to over thirty exercises. The exercises test your usage competency as well as explore additional topics with industry examples. Advanced exercises require the ability to create parts and assemblies. Machine Drawing New Age International About the Book: Written by three distinguished authors with ample academic and teaching experience, this textbook, meant for diploma and degree students of Mechanical Engineering as well as those preparing for AMIE examination, incorporates the latest SOLIDWORKS 2017 Advanced Techniques SDC Publications SOLIDWORKS 2017 Advanced Techniques picks up where SOLIDWORKS 2017 Intermediate Skills leaves off. Its aim is to take you from an intermediate user with a basic understanding of SOLIDWORKS and modeling techniques to an advanced user capable of creating complex models and able to use the advanced tools provided by SOLIDWORKS. The text covers parts, surfaces, SimulationXpress, sheet metal, top-down assemblies and core and cavity molds. Every lesson and exercise in this book was created based on real world projects. Each of these projects have been broken down and developed into easy and comprehensible steps. Furthermore, at the end of every chapter there are self test questionnaires to ensure that you have gained sufficient knowledge from each section before moving on to more advanced lessons. This book takes the approach that in order to understand SOLIDWORKS, inside and out, you should create everything from the beginning and take it step by step. Parametric Modeling with Autodesk Inventor 2021 SDC Publications Parametric Modeling with Autodesk Inventor 2021 contains a series of seventeen tutorial style lessons designed to introduce Autodesk Inventor, solid modeling, and parametric modeling. It uses a hands-on, exercise-intensive approach to all the important parametric modeling techniques and concepts. The lessons guide the user from constructing basic shapes to building intelligent mechanical designs, to creating multi-view drawings and assembly models. Other featured topics include sheet metal design, motion analysis, 2D design reuse, collision and contact, stress analysis, 3D printing and the Autodesk Inventor 2021 Certified User Examination. Video Training Included with every new copy of this book is access to extensive video training. The video training parallels the exercises found in the text and are designed to be watched first before following the instructions in the book. However, the videos do more than just provide you with click by click instructions. Author Luke Jumper also includes a brief discussion of each tool, as well as rich insight into why and how the tools are used. Luke isn't just telling you what to do, he's showing and explaining to you how to go through the exercises while providing clear descriptions of the entire process. It's like having him there guiding you through the book. These videos will provide you with a wealth of information and brings the text to life. They are also an invaluable resource for people who learn best through a visual experience. These videos deliver a comprehensive overview of the tools found in Autodesk Inventor and perfectly complement and reinforce the exercises in the book. Autodesk Inventor 2021 Certified User Examination The content of Parametric Modeling with Autodesk Inventor 2021 covers the performance tasks that have been identified by Autodesk as being included on the Autodesk Inventor 2021 Certified User examination. Special reference guides show students where the performance tasks are covered in the book. Mechanics of Materials Labs with SolidWorks Simulation 2014 SDC Publications This book is designed as a software-based lab book to complement a standard textbook in a mechanics of material course, which is usually taught at the undergraduate level. This book can also be used as an auxiliary workbook in a CAE or Finite Element Analysis course for undergraduate students. Each book comes with a disc containing video demonstrations, a quick introduction to SolidWorks, and all the part files used in the book. -- back cover. Troubleshooting Finite-Element Modeling with Abaqus With Application in Structural Engineering Analysis Springer Nature This book gives Abaqus users who make use of finite-element models in academic or practitioner-based research the in-depth program knowledge that allows them to debug a structural analysis model. The book provides many methods and guidelines for different analysis types and modes, that will help readers to solve problems that can arise with Abaqus if a structural model fails to converge to a solution. The use of Abaqus affords a general checklist approach to debugging analysis models, which can also be applied to structural analysis. The author uses step-by-step methods and detailed explanations of special features in order to identify the solutions to a variety of problems with finite-element models. The book promotes: • a diagnostic mode of thinking concerning error messages; • better material definition and the writing of user material subroutines; • work with the Abaqus mesher and best practice in doing so; • the writing of user element subroutines and contact features with convergence issues; and • consideration of hardware and software issues and a Windows HPC cluster solution. The methods and information provided facilitate job diagnostics and help to obtain converged solutions for finite-element models regarding structural component assemblies in static or dynamic analysis. The troubleshooting advice ensures that these solutions are both high-quality and cost-effective according to practical experience. The book offers an in-depth guide for students learning about Abaqus, as each problem and solution are complemented by examples and straightforward explanations. It is also useful for academics and structural engineers wishing to debug Abaqus models on the basis of error and warning messages that arise during finite-element modelling processing. Digital Heritage. Progress in Cultural Heritage: Documentation, Preservation, and Protection 6th International Conference, EuroMed 2016, Nicosia, Cyprus, October 31 - November 5, 2016, Proceedings, Part I Springer This two-volume set LNCS 10058 and LNCS 10059 constitutes the refereed proceedings of the 6th International Conference on Digital Heritage, EuroMed 2016, held in Nicosia, Cyprus, in October/November 2016. The 29 full papers, 44 project papers, and 32 short papers presented were carefully reviewed and selected from 502 submissions. The papers are organized in topical sections on 3D Reconstruction and 3D Modelling; Heritage Building Information Models; Innovative Methods on Risk Assessment, Monitoring and Protection of Cultural Heritage; Intangible Cultural Heritage Documentation; Digital Applications for Materials' Preservation and Conservation in Cultural Heritage; Non-Destructive Techniques in Cultural Heritage Conservation; Visualisation, VR and AR Methods and Applications; The New Era of Museums and Exhibitions: Digital Engagement and Dissemination; Digital Cultural Heritage in Education, Learning and Training; Data Acquisition, Process and Management in Cultural Heritage; Data, Metadata, Semantics and Ontologies in Cultural Heritage; Novel Approaches to Landscapes in Cultural Heritage; Digital Applications for Materials' Preservation and Conservation in Cultural Heritage; and Serious Games for Cultural Heritage. Beginner's Guide to SOLIDWORKS 2018 - Level I SDC Publications This book is intended to help new users learn the basic concepts of SOLIDWORKS and good solid modeling techniques in an easy to follow guide that includes video instruction. It is a great starting point for those new to SOLIDWORKS or as a teaching aid in classroom training to become familiar with the software's interface, basic commands and strategies as users complete a series of models while learning different ways to accomplish a particular task. At the end of this book, you will have a fairly good understanding of the SOLIDWORKS interface and the most commonly used commands for part modeling, assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials. The book focuses on the processes to complete the modeling of a part, instead of focusing on individual software commands or operations, which are generally simple enough to learn. The author strived hard to include the commands required in the Certified SOLIDWORKS Associate and Certified SOLIDWORKS Professional Exams as listed on the SOLIDWORKS website. SOLIDWORKS is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before. Most commands covered in this book have advanced options, which may not be covered in this book. This is meant to be a starting point to help new users to learn the basic and most frequently used commands. Includes Video Instruction Each copy of this book includes access to video instruction. In these videos the author provides a visual presentation of tutorials found in the book. The videos reinforce the steps described in the book by allowing you to watch the exact steps the author uses to complete the exercises. Solidworks 2014 for Designers Ingram Consists of 1050 pages of heavily illustrated text covering the

following features of SolidWorks: part design, assembly design, detailing and drafting, blocks, sheet metal modeling, surface modeling, configurations, equations, library features, and motion study. Drawing and Detailing with SOLIDWORKS 2022 SDC Publications Drawing and Detailing with SOLIDWORKS 2022 is written to educate and assist students, designers, engineers, and professionals in the drawing and detailing tools of SOLIDWORKS. Explore the learning process through a series of design situations, industry scenarios, projects, and objectives target towards the beginning to intermediate SOLIDWORKS user. Work through numerous activities to create multiple-view, multiple-sheet, detailed drawings, and assembly drawings. Develop Drawing templates, Sheet formats, and Custom and Link Properties. Construct drawings that incorporate part configurations, assembly configurations, and design tables with equations. Manipulate annotations in parts, drawings, assemblies, Revision tables, and Bills of Materials. Drawing and Detailing with SOLIDWORKS 2022 is not a reference book for all drafting and drawing techniques and tools. The book provides information and examples in the following areas:

- History of engineering graphics, manual sketching techniques, orthographic projection, isometric projection, multi-view drawings, dimensioning practices, fasteners in general, tolerance and fit and the history of CAD leading to the development of SOLIDWORKS.
- Start a SOLIDWORKS 2022 session and to understand the following interfaces: Menu bar toolbar, Menu bar menu, Drop-down menus, Context toolbars, Consolidated drop-down toolbars, System feedback icons, Confirmation Corner, Heads-up View toolbar, Document Properties and more.
- Provide an understanding of how SOLIDWORKS drawing documents and templates are created and used. Create an awareness on the structure of a Drawing document.
- General knowledge of the ASME Y14.5 Engineering Drawing and Related Documentation Practices.
- Create multi-sheet drawings from various part configurations and develop the following drawing views: Standard, Isometric, Auxiliary, Section, Broken Section, Detail, Half Section (Cut-away), Crop, Projected Back, with a Bill of Materials (using equations) and a Revision Table.
- Insert and edit: Dimensions, Feature Control Frames, Datums, Geometric Tolerancing, Surface Finishes, and Weld Symbols using Model Based Definitions (MBD), DimXpert and manual techniques. Chapter 10 provides a section to review the Certified SOLIDWORKS Associate (CSWA) program. Understand the curriculum and categories of the CSWA exam and the required model knowledge needed to successfully take and pass the exam. Chapter 11 provides a section on the Certified SOLIDWORKS Professional - Advanced Drawing tools (CSWPA-DT) exam with sample exam questions and initial and final SOLIDWORKS models. Understand the curriculum and categories of the exam and the required model knowledge needed to successfully take and pass the exam. The author developed the industry scenarios by combining his own industry experience with the knowledge of engineers, department managers, vendors and manufacturers. These professionals are directly involved with SOLIDWORKS every day. Advances on Mechanics, Design Engineering and Manufacturing III Proceedings of the International Joint Conference on Mechanics, Design Engineering & Advanced Manufacturing, JCM 2020, June 2-4, 2020 Springer Nature This open access book gathers contributions presented at the International Joint Conference on Mechanics, Design Engineering and Advanced Manufacturing (JCM 2020), held as a web conference on June 2-4, 2020. 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 organized into four main parts, reflecting the focus and primary themes of the conference. The contributions presented here 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. Practical Guide to Digital Manufacturing First-Time-Right for Design of Products, Machines, Processes and System Integration Springer Nature This book covers the subject of digital manufacturing. It provides a practical guide for readers on using computer aided design (CAD), computer aided engineering (CAE) and computer aided manufacturing (CAM) and other computer assistive tools for the design of products, machines, processes and system integrations through the case studies of engineering projects. The book introduces a thorough theoretical foundation and discussion of the historical development, and enabling technologies of digital manufacturing. It also covers a broad range of computer aided tools for a variety of applications including: geometric modelling; assembly modelling; motion simulation; finite element analysis; manufacturing process simulation; machining programming; product data management; and, product lifecycle management. Practical Guide to Digital Manufacturing uses many real-world case studies to illustrate the discussed applications, making it easily readable for undergraduate and graduate students, as well as engineers with the needs of computer-aided design and manufacturing knowledge and skills. 150 CAD Exercises Independently Published - 100 2D CAD Exercises. - 50 3D CAD Exercises. - Each exercise can be designed on any CAD software such as AutoCAD, SolidWorks, Catia, PTC Creo Parametric, Siemens NX, Autodesk Inventor and other. - These exercises are designed to help you test out your basic CAD skills. - Each exercise can be assigned separately. - No exercise is a prerequisite for another. Learning SOLIDWORKS 2017 SDC Publications This book will teach you everything you need to know to start using SOLIDWORKS 2017 with easy to understand, step-by-step tutorials. This book features a simple robot design used as a project throughout the book. You will learn to model parts, create assemblies, run simulations and even create animations of your robot design. No previous experience with Computer Aided Design (CAD) is needed since this book starts at an introductory level. The author begins by getting you familiar with the SOLIDWORKS interface and its basic tools right away. You will start by learning to model simple robot parts and before long you will graduate to creating more complex parts and multi-view drawings. Along the way you will learn the fundamentals of parametric modeling through the use of geometric constraints and relationships. You will also become familiar with many of SOLIDWORKS's powerful tools and commands that enable you to easily construct complex features in your models. Also included is coverage of gears, gear trains and spur gear creation using SOLIDWORKS. This book continues by examining the different mechanisms commonly used in walking robots. You will learn the basic types of planar four-bar linkages commonly used in mechanical designs and how to use the GeoGebra Dynamic Geometry software to simulate and analyze 2D linkages. Using the knowledge you gained about linkages and mechanism, you will learn how to modify your robot and change its behavior by modifying or creating new parts. In the second to last chapter of this book you learn how to combine all the robot parts into assemblies and then run motion analysis. You will finish off your project by creating 3D animations of your robot in action. Finally, in the last chapter, the author introduces you to 3D printing. You will learn the general principles of 3D printing including a brief history of 3D printing, the types of 3D printing technologies, commonly used filaments, and the basic procedure for printing a 3D model. Being able to turn your designs into physical objects will open up a whole new world of possibilities to you. There are many books that show you how to perform individual tasks with SOLIDWORKS, but this book takes you through an entire project and shows you the complete engineering process. By the end of this book you will have modeled and assembled nearly all the parts that make up the TAMIYA® Mechanical Tiger and can start building your own robot. Beginner's Guide to SOLIDWORKS 2016 - Level I SDC Publications This book is intended to help new users learn the basic concepts of SOLIDWORKS and good solid modeling techniques in an easy to follow guide that includes video instruction. It is a great starting point for those new to SOLIDWORKS or as a teaching aid in classroom training to become familiar with the software's interface, basic commands and strategies as users complete a series of models while learning different ways to accomplish a particular task. At the end of this book, you will have a fairly good understanding of the SOLIDWORKS interface and the most commonly used commands for part modeling, assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials. The book focuses on the processes to complete the modeling of a part, instead of focusing on individual software commands or operations, which are generally simple enough to learn. The author strived hard to include the commands required in the Certified SOLIDWORKS Associate and Certified SOLIDWORKS Professional Exams as listed on the SOLIDWORKS website. SOLIDWORKS is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before. Most commands covered in this book have advanced options, which may not be covered in this book. This is meant to be a starting point to help new users to learn the basic and most frequently used commands. BIM Handbook A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors John Wiley & Sons "The BIM Handbook is an extensively researched and meticulously written book, showing evidence of years of work rather than something that has been quickly put together in the course of a few months. It brings together most of the current information about BIM, its history, as well as its potential future in one convenient place, and can serve as a handy reference book on BIM for anyone who is involved in the design, construction, and operation of buildings and needs to know about the technologies that support it. The need for such a book is indisputable, and it is terrific that Chuck Eastman and his team were able to step up to the plate and make it happen. Thanks to their efforts, anyone in the AEC industry looking for a deeper understanding of BIM now knows exactly where to look for it." —AECbytes book review, August 28, 2008 (www.aecbytes.com/review/2008/BIMHandbook.html) 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 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, Second 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: Completely updated material covering the current practice and technology in this fast-moving field Expanded coverage of lean construction and its use of BIM, with special focus on Integrated Project Delivery throughout the book New insight on the ways BIM facilitates sustainable building New information on interoperability schemas and collaboration tools Six new case studies Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Second 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. SOLIDWORKS 2020 Tutorial SDC Publications • Uses step-by-step, project based tutorials designed for beginning or intermediate users • Will prepare you for the Certified SOLIDWORKS Associate Exam • Includes a chapter introducing you to 3D printing SOLIDWORKS 2020 Tutorial is written to assist students, designers, engineers and professionals who are new to SOLIDWORKS. The text provides a step-by-step, project based learning approach. It also contains information and examples on the five categories in the CSWA exam. The book is divided into four sections. Chapters 1 - 5 explore the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple and complex parts and assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. In chapter 6 you will create the final robot assembly. The physical components and corresponding Science, Technology, Engineering and Math (STEM) curriculum are available from Gears Educational Systems. All assemblies and components for the final robot assembly are provided. Chapters 7 - 10 prepare you for the Certified Associate - Mechanical Design (CSWA) exam. The certification indicates a foundation in and apprentice knowledge of 3D CAD and engineering practices and principles. Chapter 11 covers the benefits of additive manufacturing (3D printing), how it differs from subtractive manufacturing, and its features. You will also learn the terms and technology used in low cost 3D printers. Follow the step-by-step instructions and develop multiple assemblies that combine over 100 extruded machined parts and components. Formulate the skills to create, modify and edit sketches and solid features. Learn the techniques to reuse features, parts and assemblies through symmetry, patterns, copied components, apply proper design intent, design tables and configurations. Learn by doing, not just by reading. Desired outcomes and usage competencies are listed for each chapter. Know your objective up front. Follow the steps in each chapter to achieve your design goals. Work between multiple documents, features, commands, custom properties and document properties that represent how engineers and designers utilize SOLIDWORKS in industry. SOLIDWORKS 2017 in 5 Hours with Video Instruction SDC Publications SOLIDWORKS 2017 in 5 Hours with video instruction introduces the new user to the basics of using SOLIDWORKS 3D CAD software in five easy lessons. This book is intended for the student or designer that needs to learn SOLIDWORKS quickly and effectively for senior capstone, machine design, kinematics, dynamics, and other engineering and technology projects that use SOLIDWORKS as a tool. Engineers in industry are expected to have SOLIDWORKS skills for their company's next project. Students need to learn SOLIDWORKS without taking a formal CAD course. Based on years of teaching SOLIDWORKS to engineering students, SOLIDWORKS 2017 in 5 Hours concentrates on the areas where the new user improves efficiency in the design modeling process. By learning the correct SOLIDWORKS skills and file management techniques, you gain the most knowledge in the shortest period of time. You develop a mini Stirling Engine and investigate the proper design intent and constraints.

The mini Stirling Engine is based on the external combustion, closed cycle engine of Scottish inventor, Robert Stirling. In addition to 3D modeling, the engine can be used to teach and connect many engineering and physics principles. You begin with an overview of SOLIDWORKS and the User Interface (UI), its menus, toolbars and commands. With a quick pace, you learn the essentials of 2D sketching, part and assembly creation, preform motion study, develop detailed part and assembly drawings and much more. Engineering Design with SOLIDWORKS 2017 and Video Instruction SDC Publications Engineering Design with SOLIDWORKS 2017 and video instruction is written to assist students, designers, engineers and professionals. The book provides a solid foundation in SOLIDWORKS by utilizing projects with step-by-step instructions for the beginner to intermediate SOLIDWORKS user. Explore the user interface, CommandManager, menus, toolbars and modeling techniques to create parts, assemblies and drawings in an engineering environment. Follow the step-by-step instructions and develop multiple parts and assemblies that combine machined, plastic and sheet metal components. Formulate the skills to create, modify and edit sketches and solid features. Learn the techniques to reuse features, parts and assemblies through symmetry, patterns, copied components, Design Tables, Bills of Materials, Custom Properties and Configurations. Address various SOLIDWORKS analysis tools and Intelligent Modeling techniques along with Additive Manufacturing (3D printing). Learn by doing not just by reading. Desired outcomes and usage competencies are listed for each project. Know your objective up front. Follow the steps in Projects 1 - 9 to achieve the design goals. Review Project 10 on Additive Manufacturing (3D printing) and its benefits and features. Understand the terms and technology used in low cost 3D printers. Work between multiple documents, features, commands and custom properties that represent how engineers and designers utilize SOLIDWORKS in industry. Review individual features, commands and tools with the video instruction. The projects contain exercises. The exercises analyze and examine usage competencies. Collaborate with leading industry suppliers such as SMC Corporation of America, Boston Gear and 80/20 Inc. Collaborative information translates into numerous formats such as paper drawings, electronic files, rendered images and animations. On-line intelligent catalogs guide designers to the product that meets both their geometric requirements and performance functionality. The author developed the industry scenarios by combining his own industry experience with the knowledge of engineers, department managers, vendors and manufacturers. He is directly involved with SOLIDWORKS every day. His responsibilities go far beyond the creation of just a 3D model. The book is designed to complement the SOLIDWORKS Tutorials contained in SOLIDWORKS 2017. SOLIDWORKS 2017 Reference Guide SDC Publications The SOLIDWORKS 2017 Reference Guide is a comprehensive reference book written to assist the beginner to intermediate user of SOLIDWORKS 2017. SOLIDWORKS is an immense software package, and no one book can cover all topics for all users. This book provides a centralized reference location to address many of the tools, features and techniques of SOLIDWORKS 2017. This book covers the following: System and Document propertiesFeatureManagersPropertyManagersConfigurationManagersRenderManagers2D and 3D Sketch toolsSketch entities3D Feature toolsMotion StudySheet MetalMotion StudySOLIDWORKS SimulationPhotoView 360Pack and Go3D PDFsIntelligent Modeling techniques3D printing terminology and more Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SOLIDWORKS 2017 software. If you are completely new to SOLIDWORKS, you should read Chapter 1 in detail and complete Lesson 1, Lesson 2 and Lesson 3 in the SOLIDWORKS Tutorials. If you are familiar with an earlier release of SOLIDWORKS, you still might want to skim Chapter 1 to become acquainted with some of the commands, menus and features that you have not used; or you can simply jump to any section in any chapter. Each chapter provides detailed PropertyManager information on key topics with individual stand-alone short tutorials to reinforce and demonstrate the functionality and ease of the SOLIDWORKS tool or feature. The book provides access to over 250 models, their solutions and additional support materials. Learn by doing, not just by reading. Formulate the skills to create, modify and edit sketches and solid features. Learn the techniques to reuse features, parts and assemblies through symmetry, patterns, copied components, design tables, configurations and more. The book is designed to compliment the Online Tutorials and Online Help contained in SolidWorks 2017. The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs. The author developed the tutorials by combining his own industry experience with the knowledge of engineers, department managers, professors, vendors and manufacturers. He is directly involved with SOLIDWORKS every day and his responsibilities go far beyond the creation of just a 3D model. Beginner's Guide to SOLIDWORKS 2021 - Level I SDC Publications This book is intended to help new users learn the basic concepts of SOLIDWORKS and good solid modeling techniques in an easy to follow guide that includes video instruction. It is a great starting point for those new to SOLIDWORKS or as a teaching aid in classroom training to become familiar with the software's interface, basic commands and strategies as users complete a series of models while learning different ways to accomplish a particular task. At the end of this book, you will have a fairly good understanding of the SOLIDWORKS interface and the most commonly used commands for part modeling, assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials. The book focuses on the processes to complete the modeling of a part, instead of focusing on individual software commands or operations, which are generally simple enough to learn. Throughout this book the author introduces you to new commands that are required to pass the Certified SOLIDWORKS Associate exam, as listed on the SOLIDWORKS website. A dedicated chapter provides you with details about the exam, as well as a practice test to help you prepare for the actual exam. SOLIDWORKS is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before. Most commands covered in this book have advanced options, which may not be covered in this book. This is meant to be a starting point to help new users to learn the basic and most frequently used commands. Engineering Design and Graphics with Solidworks 2016 Peachpit Press Engineering Design and Graphics with SolidWorks 2016 shows students how to use SolidWorks to create engineering drawings and designs. The textbook has been updated to cover the new features in SolidWorks 2016. It focuses on the creation of engineering drawings, including dimensions and tolerances and the use of standard parts and tools. Each chapter contains step-by-step sample problems that show students how to apply the concepts presented in the chapter. Effective pedagogy throughout the text helps students learn and retain concepts: Objectives: Each chapter begins with objectives and an introduction to the material. Summaries: Each chapter concludes with a summary and exercise problems. Numerous illustrations: The multitude of illustrations, accompanied by explanatory captions, present a visual approach to learning. Students see in the text what they see on the screen with the addition of explanatory text. Practical application: The text provides hundreds of exercise projects of varying difficulty (far more than any other computer graphics text). These exercises reinforce each chapter's content and help students learn by doing. Flexibility: With the hundreds of problems presented in the book, instructors can assign different problems within the same class and from year to year without repeating problems for students. Meets standards: The text teaches ANSI standards for dimensions and tolerances. This helps students understand how their designs are defined for production and the importance of proper tolerancing. Step-by-step approach: In presenting the fundamentals of engineering drawing using SolidWorks, the text uses a step-by-step approach that allows students to work and learn at their own pace. SOLIDWORKS 2020 Advanced Techniques SDC Publications • The perfect follow up to SOLIDWORKS Intermediate Skills • Uses a step by step tutorial approach with real world projects • Comprehensive coverage of advanced SOLIDWORKS tools and techniques • Covers parts, surfaces, SimulationXpress, sheet metal, top-down assemblies and core and cavity molds • Features a quick reference guide and a Certified SOLIDWORKS Professional practice exam SOLIDWORKS 2020 Advanced Techniques picks up where SOLIDWORKS 2020 Intermediate Skills leaves off. Its aim is to take you from an intermediate user with a basic understanding of SOLIDWORKS and modeling techniques to an advanced user capable of creating complex models and able to use the advanced tools provided by SOLIDWORKS. The text covers parts, surfaces, SimulationXpress, sheet metal, top-down assemblies and core and cavity molds. Every lesson and exercise in this book was created based on real world projects. Each of these projects has been broken down and developed into easy and comprehensible steps. Furthermore, at the end of every chapter there are self test questionnaires to ensure that you have gained sufficient knowledge from each section before moving on to more advanced lessons. This book takes the approach that in order to understand SOLIDWORKS, inside and out, you should create everything from the beginning and take it step by step. SOLIDWORKS 2017 Tutorial with Video Instruction SDC Publications SOLIDWORKS 2017 Tutorial with video instruction is written to assist students, designers, engineers and professionals who are new to SOLIDWORKS. The text provides a step-by-step project based learning approach. It also contains information and examples on the five categories, to take and understand the Certified Associate - Mechanical Design (CSWA) exam. The book is divided into three sections. Chapters 1 - 6 explore the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, equations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Chapters 7 - 10 prepare you for the Certified Associate - Mechanical Design (CSWA) exam. The certification indicates a foundation in and apprentice knowledge of 3D CAD and engineering practices and principles. View Chapter 11 on Additive Manufacturing (3D printing) and its benefits and features. Understand the terms and technology used in low cost 3D printers. Follow the step-by-step instructions and develop multiple assemblies that combine over 100 extruded machined parts and components. Formulate the skills to create, modify and edit sketches and solid features. Learn the techniques to reuse features, parts and assemblies through symmetry, patterns, copied components, apply proper design intent, design tables and configurations. Learn by doing, not just by reading. Desired outcomes and usage competencies are listed for each chapter. Know your objective up front. Follow the steps in each chapter to achieve your design goals. Work between multiple documents, features, commands, custom properties and document properties that represent how engineers and designers utilize SOLIDWORKS in industry. Fused Deposition Modeling Based 3D Printing Springer Nature This book covers 3D printing activities by fused deposition modeling process. The two introductory chapters discuss the principle, types of machines and raw materials, process parameters, defects, design variations and simulation methods. Six chapters are devoted to experimental work related to process improvement, mechanical testing and characterization of the process, followed by three chapters on post-processing of 3D printed components and two chapters addressing sustainability concerns. Seven chapters discuss various applications including composites, external medical devices, drug delivery system, orthotic inserts, watertight components and 4D printing using FDM process. Finally, six chapters are dedicated to the study on modeling and optimization of FDM process using computational models, evolutionary algorithms, machine learning, metaheuristic approaches and optimization of layout and tool path. Engineering Design with SOLIDWORKS 2018 and Video Instruction SDC Publications Engineering Design with SOLIDWORKS 2018 and video instruction is written to assist students, designers, engineers and professionals. The book provides a solid foundation in SOLIDWORKS by utilizing projects with step-by-step instructions for the beginner to intermediate SOLIDWORKS user featuring machined, plastic and sheet metal components. Desired outcomes and usage competencies are listed for each project. The book is divided into five sections with 11 projects. Project 1 - Project 6: Explore the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple and complex parts and assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Additional techniques include the edit and reuse of features, parts, and assemblies through symmetry, patterns, configurations, SOLIDWORKS 3D ContentCentral and the SOLIDWORKS Toolbox. Project 7: Understand Top-Down assembly modeling and Sheet Metal parts. Develop components In-Context with InPlace Mates, along with the ability to import parts using the Top-Down assembly method. Convert a solid part into a Sheet Metal part and insert and apply various Sheet Metal features. Project 8 - Project 9: Recognize SOLIDWORKS Simulation and Intelligent Modeling techniques. Understand a general overview of SOLIDWORKS Simulation and the type of questions that are on the SOLIDWORKS Simulation Associate - Finite Element Analysis (CSWSA-FEA) exam. Apply design intent and intelligent modeling techniques in a sketch, feature, part, plane, assembly and drawing. Project 10: Comprehend the differences between additive and subtractive manufacturing. Understand 3D printer terminology along with a working knowledge of preparing, saving, and printing CAD models on a low cost printer. Project 11: Review the Certified Associate - Mechanical Design (CSWA) program. Understand the curriculum and categories of the CSWA exam and the required model knowledge needed to successfully take the exam. The author developed the industry scenarios by combining his own industry experience with the knowledge of engineers, department managers, vendors and manufacturers. These professionals are directly involved with SOLIDWORKS every day. Their responsibilities go far beyond the creation of just a 3D model.