

Manual Solidworks 2014

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SolidWorks 2014 in 5 Hours with Video Instruction David Planchard 2014-03-07 SolidWorks 2014 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 2014 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. View the provided videos for each section of the book to enhance your experience. SolidWorks Interface. 2D Sketching, Sketch Planes and Sketch tools 3D Features and Design Intent Creating an Assembly Fundamentals in Drawings Part 1 Fundamentals in Drawings Part 2

Engineering Design with SolidWorks 2014 and Video Instruction David Planchard 2014 Engineering Design with SolidWorks 2014 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: SimulationXpress, Sustainability/SustainabilityXpress and DFMXpress and Intelligent Modeling techniques. 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 Project 1 - 8 to achieve the design goals. 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. These professionals are directly involved with SolidWorks every day. Their responsibilities go far beyond the creation of just a 3D model. The book is design to compliment the SolidWorks Tutorials contained in SolidWorks 2014.

Vibration Analysis with SolidWorks Simulation 2014 Paul Kurowski 2014-08-12 Vibration Analysis with SolidWorks Simulation 2014 goes beyond the standard software manual. It concurrently introduces the reader to vibration analysis and its implementation in SolidWorks Simulation using hands-on exercises. A number of projects are presented to illustrate vibration analysis and related topics. Each chapter is designed to build on the skills and understanding gained from previous exercises. Vibration Analysis with SolidWorks Simulation 2014 is designed for users who are already familiar with the basics of Finite Element Analysis (FEA) using SolidWorks Simulation or who have completed the book Engineering Analysis with SolidWorks Simulation 2014. Vibration Analysis with SolidWorks Simulation 2014 builds on these topics in the area of vibration analysis. Some understanding of structural analysis and solid mechanics is recommended.

Automatic Solar Tracking Sun Tracking Satellite Tracking rastreador solar seguimiento solar seguidor solar automático de seguimiento solarGerro Prinsloo 2015-11-01 Automatic Solar Tracking Sun Tracking : This book details Automatic Solar-Tracking, Sun-Tracking-Systems, Solar-Trackers and Sun Tracker Systems. An intelligent automatic solar tracker is a device that orients a payload toward the sun. Such programmable computer based solar tracking device includes principles of solar tracking, solar tracking systems, as well as microcontroller, microprocessor and/or PC based solar tracking control to orientate solar reflectors, solar lenses, photovoltaic panels or other optical configurations towards the sun. Motorized space frames and kinematic systems ensure motion dynamics and employ drive technology and gearing principles to steer optical configurations such as mangin, parabolic, conic, or cassegrain solar energy collectors to face the sun and follow the sun movement contour continuously (seguimiento solar y automatización, automatización seguidor solar, tracking solar e automação, automação seguidor solar, inseguimento solare, inseguitore solare, energia termica, sole seguito, posizionatore motorizzato) In harnessing power from the sun through a solar tracker or practical solar tracking system, renewable energy control automation systems require automatic solar tracking software and solar position algorithms to accomplish dynamic motion control with control automation architecture, circuit boards and hardware. On-axis sun tracking

system such as the altitude-azimuth dual axis or multi-axis solar tracker systems use a sun tracking algorithm or ray tracing sensors or software to ensure the sun's passage through the sky is traced with high precision in automated solar tracker applications, right through summer solstice, solar equinox and winter solstice. A high precision sun position calculator or sun position algorithm is this an important step in the design and construction of an automatic solar tracking system. The content of the book is also applicable to communication antenna satellite tracking and moon tracking algorithm source code for which links to free download links are provided. From sun tracing software perspective, the sonnet Tracing The Sun has a literal meaning. Within the context of sun track and trace, this book explains that the sun's daily path across the sky is directed by relatively simple principles, and if grasped/understood, then it is relatively easy to trace the sun with sun following software. Sun position computer software for tracing the sun are available as open source code, sources that is listed in this book. The book also describes the use of satellite tracking software and mechanisms in solar tracking applications. Ironically there was even a system called sun chaser, said to have been a solar positioner system known for chasing the sun throughout the day. Using solar equations in an electronic circuit for automatic solar tracking is quite simple, even if you are a novice, but mathematical solar equations are over complicated by academic experts and professors in text-books, journal articles and internet websites. In terms of solar hobbies, scholars, students and Hobbyist's looking at solar tracking electronics or PC programs for solar tracking are usually overcome by the sheer volume of scientific material and internet resources, which leaves many developers in frustration when search for simple experimental solar tracking source-code for their on-axis sun-tracking systems. This booklet will simplify the search for the mystical sun tracking formulas for your sun tracker innovation and help you develop your own autonomous solar tracking controller. By directing the solar collector directly into the sun, a solar harvesting means or device can harness sunlight or thermal heat. This is achieved with the help of sun angle formulas, solar angle formulas or solar tracking procedures for the calculation of sun's position in the sky. Automatic sun tracking system software includes algorithms for solar altitude azimuth angle calculations required in following the sun across the sky. In using the longitude, latitude GPS coordinates of the solar tracker location, these sun tracking software tools supports precision solar tracking by determining the solar altitude-azimuth coordinates for the sun trajectory in altitude-azimuth tracking at the tracker location, using certain sun angle formulas in sun vector calculations. Instead of follow the sun software, a sun tracking sensor such as a sun sensor or webcam or video camera with vision based sun following image processing software can also be used to determine the position of the sun optically. Such optical feedback devices are often used in solar panel tracking systems and dish tracking systems. Dynamic sun tracing is also used in solar surveying, DNI analyser and sun surveying systems that build solar infographics maps with solar radiance, irradiance and DNI models for GIS (geographical information system). In this way geospatial methods on solar/environment interaction makes use use of geospatial technologies (GIS, Remote Sensing, and Cartography). Climatic data and weather station or weather center data, as well as queries from sky servers and solar resource database systems (i.e. on DB2, Sybase, Oracle, SQL, MySQL) may also be associated with solar GIS maps. In such solar resource modelling systems, a pyranometer or solarimeter is normally used in addition to measure direct and indirect, scattered, dispersed, reflective radiation for a particular geographical location. Sunlight analysis is important in flash photography where photographic lighting are important for photographers. GIS systems are used by architects who add sun shadow applets to study architectural shading or sun shadow analysis, solar flux calculations, optical modelling or to perform weather modelling. Such systems often employ a computer operated telescope type mechanism with ray tracing program software as a solar navigator or sun tracer that determines the solar position and intensity. The purpose of this booklet is to assist developers to track and trace suitable source-code and solar tracking algorithms for their application, whether a hobbyist, scientist, technician or engineer. Many open-source sun following and tracking algorithms and source-code for solar tracking programs and modules are freely available to download on the internet today. Certain proprietary solar tracker kits and solar tracking controllers include a software development kit SDK for its application programming interface API attributes (Pebble). Widget libraries, widget toolkits, GUI toolkit and UX libraries with graphical control elements are also available to construct the graphical user interface (GUI) for your solar tracking or solar power monitoring program. The solar library used by solar position calculators, solar simulation software and solar contour calculators include machine program code for the solar hardware controller which are software programmed into Micro-controllers, Programmable Logic Controllers PLC, programmable gate arrays, Arduino processor or PIC processor. PC based solar tracking is also high in demand using C++, Visual Basic VB, as well as MS Windows, Linux and Apple Mac based operating systems for sun path tables on Matlab, Excel. Some books and internet webpages use other terms, such as: sun angle calculator, sun position calculator or solar angle calculator. As said, such software code calculate the solar azimuth angle, solar altitude angle, solar elevation angle or the solar Zenith angle (Zenith solar angle is simply referenced from vertical plane, the mirror of the elevation angle measured from the horizontal or ground plane level). Similar software code is also used in solar calculator apps or the solar power calculator apps for IOS and Android smartphone devices. Most of these smartphone solar mobile apps show the sun path and sun-angles for any location and date over a 24 hour period. Some smartphones include augmented reality features in which you can physically see and look at the solar path through your cell phone camera or mobile phone camera at your phone's specific GPS location. In the computer programming and digital signal processing (DSP) environment, (free/open source) program code are available for VB, .Net, Delphi, Python, C, C+, C++, PHP, Swift, ADM, F, Flash, Basic, QBasic, GBasic, KBasic, SIMPL language, Squirrel, Solaris, Assembly language on operating systems such as MS Windows, Apple Mac, DOS or Linux OS. Software algorithms predicting position of the sun in the sky are commonly available as graphical programming platforms such as Matlab (Mathworks), Simulink models, Java applets, TRNSYS simulations, Scada system apps, Labview module, Beckhoff TwinCAT (Visual Studio), Siemens SPA, mobile and iphone apps, Android or iOS tablet apps, and so forth. At the same time, PLC software code for a range of sun tracking automation technology can follow the profile of sun in sky for Siemens, HP, Panasonic, ABB, Allan Bradley, OMRON, SEW, Festo, Beckhoff, Rockwell, Schneider, Endress Hauser, Fudji electric. Honeywell, Fuchs, Yokonawa, or Muthibishi platforms. Sun path projection software are also available for a range of modular IPC embedded PC motherboards, Industrial PC, PLC (Programmable Logic Controller) and PAC (Programmable Automation Controller) such as the Siemens S7-1200 or Siemens Logo, Beckhoff IPC or CX series, OMRON PLC, Ercam PLC, AC500plc ABB, National Instruments NI PXI or NI cRIO, PIC processor, Intel 8051/8085, IBM (Cell, Power, Brain or Truenorth series), FPGA (Xilinx Altera Nios), Intel, Xeon, Atmel megaAVR, MPU, Maple, Teensy, MSP, XMOS, Xbee, ARM, Raspberry Pi, Eagle, Arduino or Arduino AtMega microcontroller, with servo motor, stepper motor, direct current DC pulse width modulation PWM (current driver) or alternating current AC SPS or IPC variable frequency drives VFD motor drives (also termed adjustable-frequency drive, variable-speed drive, AC drive, micro drive or inverter drive) for electrical, mechatronic, pneumatic, or hydraulic solar tracking actuators. The above motion control and robot control systems include analogue or digital interfacing ports on the processors to allow for tracker angle orientation feedback control through one or a combination of angle sensor or angle encoder, shaft encoder, precision encoder, optical encoder, magnetic encoder, direction encoder, rotational encoder, chip encoder, tilt sensor, inclination sensor, or pitch sensor. Note that the tracker's elevation or zenith axis angle may measured using an altitude angle-, declination angle-, inclination angle-, pitch angle-, or vertical angle-, zenith angle- sensor or inclinometer. Similarly the tracker's azimuth axis angle be measured

with a azimuth angle-, horizontal angle-, or roll angle- sensor. Chip integrated accelerometer magnetometer gyroscope type angle sensors can also be used to calculate displacement. Other options include the use of thermal imaging systems such as a Fluke thermal imager, or robotic or vision based solar tracker systems that employ face tracking, head tracking, hand tracking, eye tracking and car tracking principles in solar tracking. With unattended decentralised rural, island, isolated, or autonomous off-grid power installations, remote control, monitoring, data acquisition, digital datalogging and online measurement and verification equipment becomes crucial. It assists the operator with supervisory control to monitor the efficiency of remote renewable energy resources and systems and provide valuable web-based feedback in terms of CO₂ and clean development mechanism (CDM) reporting. A power quality analyser for diagnostics through internet, WiFi and cellular mobile links is most valuable in frontline troubleshooting and predictive maintenance, where quick diagnostic analysis is required to detect and prevent power quality issues. Solar tracker applications cover a wide spectrum of solar applications and solar assisted application, including concentrated solar power generation, solar desalination, solar water purification, solar steam generation, solar electricity generation, solar industrial process heat, solar thermal heat storage, solar food dryers, solar water pumping, hydrogen production from methane or producing hydrogen and oxygen from water (HHO) through electrolysis. Many patented or non-patented solar apparatus include tracking in solar apparatus for solar electric generator, solar desalinator, solar steam engine, solar ice maker, solar water purifier, solar cooling, solar refrigeration, USB solar charger, solar phone charging, portable solar charging tracker, solar coffee brewing, solar cooking or solar drying means. Your project may be the next breakthrough or patent, but your invention is held back by frustration in search for the sun tracker you require for your solar powered appliance, solar generator, solar tracker robot, solar freezer, solar cooker, solar drier, solar pump, solar freezer, or solar dryer project. Whether your solar electronic circuit diagram include a simplified solar controller design in a solar electricity project, solar power kit, solar hobby kit, solar steam generator, solar hot water system, solar ice maker, solar desalinator, hobbyist solar panels, hobby robot, or if you are developing professional or hobby electronics for a solar utility or micro scale solar powerplant for your own solar farm or solar farming, this publication may help accelerate the development of your solar tracking innovation. Lately, solar polygeneration, solar trigeneration (solar triple generation), and solar quad generation (adding delivery of steam, liquid/gaseous fuel, or capture food-grade CO₂) systems have need for automatic solar tracking. These systems are known for significant efficiency increases in energy yield as a result of the integration and re-use of waste or residual heat and are suitable for compact packaged micro solar powerplants that could be manufactured and transported in kit-form and operate on a plug-and play basis. Typical hybrid solar power systems include compact or packaged solar micro combined heat and power (CHP or mCHP) or solar micro combined, cooling, heating and power (CCHP, CHPC, mCCHP, or mCHPC) systems used in distributed power generation. These systems are often combined in concentrated solar CSP and CPV smart microgrid configurations for off-grid rural, island or isolated microgrid, minigrid and distributed power renewable energy systems. Solar tracking algorithms are also used in modelling of trigeneration systems using Matlab Simulink (Modelica or TRNSYS) platform as well as in automation and control of renewable energy systems through intelligent parsing, multi-objective, adaptive learning control and control optimization strategies. Solar tracking algorithms also find application in developing solar models for country or location specific solar studies, for example in terms of measuring or analysis of the fluctuations of the solar radiation (i.e. direct and diffuse radiation) in a particular area. Solar DNI, solar irradiance and atmospheric information and models can thus be integrated into a solar map, solar atlas or geographical information systems (GIS). Such models allows for defining local parameters for specific regions that may be valuable in terms of the evaluation of different solar in photovoltaic or CSP systems on simulation and synthesis platforms such as Matlab and Simulink or in linear or multi-objective optimization algorithm platforms such as COMPOSE, EnergyPLAN or DER-CAM. A dual-axis solar tracker and single-axis solar tracker may use a sun tracker program or sun tracker algorithm to position a solar dish, solar panel array, heliostat array, PV panel, solar antenna or infrared solar antenna. A self-tracking solar concentrator performs automatic solar tracking by computing the solar vector. Solar position algorithms (TwinCAT, SPA, or PSA Algorithms) use an astronomical algorithm to calculate the position of the sun. It uses astronomical software algorithms and equations for solar tracking in the calculation of sun's position in the sky for each location on the earth at any time of day. Like an optical solar telescope, the solar position algorithm pin-points the solar reflector at the sun and locks onto the sun's position to track the sun across the sky as the sun progresses throughout the day. Optical sensors such as photodiodes, light-dependant-resistors (LDR) or photoresistors are used as optical accuracy feedback devices. Lately we also included a section in the book (with links to microprocessor code) on how the PixArt Wii infrared camera in the Wii remote or Wiimote may be used in infrared solar tracking applications. In order to harvest free energy from the sun, some automatic solar positioning systems use an optical means to direct the solar tracking device. These solar tracking strategies use optical tracking techniques, such as a sun sensor means, to direct sun rays onto a silicon or CMOS substrate to determine the X and Y coordinates of the sun's position. In a solar mems sun-sensor device, incident sunlight enters the sun sensor through a small pin-hole in a mask plate where light is exposed to a silicon substrate. In a web-camera or camera image processing sun tracking and sun following means, object tracking software performs multi object tracking or moving object tracking methods. In an solar object tracking technique, image processing software performs mathematical processing to box the outline of the apparent solar disc or sun blob within the captured image frame, while sun-localization is performed with an edge detection algorithm to determine the solar vector coordinates. An automated positioning system help maximize the yields of solar power plants through solar tracking control to harness sun's energy. In such renewable energy systems, the solar panel positioning system uses a sun tracking techniques and a solar angle calculator in positioning PV panels in photovoltaic systems and concentrated photovoltaic CPV systems. Automatic on-axis solar tracking in a PV solar tracking system can be dual-axis sun tracking or single-axis sun solar tracking. It is known that a motorized positioning system in a photovoltaic panel tracker increase energy yield and ensures increased power output, even in a single axis solar tracking configuration. Other applications such as robotic solar tracker or robotic solar tracking system uses robotica with artificial intelligence in the control optimization of energy yield in solar harvesting through a robotic tracking system. Automatic positioning systems in solar tracking designs are also used in other free energy generators, such as concentrated solar thermal power CSP and dish Stirling systems. The sun tracking device in a solar collector in a solar concentrator or solar collector Such a performs on-axis solar tracking, a dual axis solar tracker assists to harness energy from the sun through an optical solar collector, which can be a parabolic mirror, parabolic reflector, Fresnel lens or mirror array/matrix. A parabolic dish or reflector is dynamically steered using a transmission system or solar tracking slew drive mean. In steering the dish to face the sun, the power dish actuator and actuation means in a parabolic dish system optically focusses the sun's energy on the focal point of a parabolic dish or solar concentrating means. A Stirling engine, solar heat pipe, thermosyphin, solar phase change material PCM receiver, or a fibre optic sunlight receiver means is located at the focal point of the solar concentrator. The dish Stirling engine configuration is referred to as a dish Stirling system or Stirling power generation system. Hybrid solar power systems (used in combination with biogas, biofuel, petrol, ethanol, diesel, natural gas or PNG) use a combination of power sources to harness and store solar energy in a storage medium. Any multitude of energy sources can be combined through the use of controllers and the energy stored in batteries, phase change material, thermal heat storage, and in cogeneration form converted to the required power using

thermodynamic cycles (organic Rankin, Brayton cycle, micro turbine, Stirling) with an inverter and charge controller.

Engineering Graphics with SOLIDWORKS 2018 and Video Instruction David Planchard 2018-03-23 Engineering Graphics with SOLIDWORKS 2018 and Video Instruction is written to assist students, designers, engineers and professionals who are new to SOLIDWORKS. The book is divided into four sections: Chapters 1 - 3 explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of SOLIDWORKS. Chapters 4 - 9 explore the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings and six document templates. Chapter 10 provides a section on the Certified Associate - Mechanical Design (CSWA) program with sample exam questions and initial and final SOLIDWORKS models. Chapter 11 helps you understand the differences between additive and subtractive manufacturing. Comprehend 3D printer terminology along with a working knowledge of preparing, saving, and printing a 3D CAD model on a low cost printer. Review individual features, commands, and tools using the video instruction and SOLIDWORKS Help. The chapter exercises analyze and examine usage competencies based on the chapter objectives. The book is designed to complement the SOLIDWORKS Tutorials located in the SOLIDWORKS Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by-step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SOLIDWORKS in industry. 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.

Official Certified SOLIDWORKS Professional Certification Guide (SOLIDWORKS 2015 - 2017) David Planchard 2017-05 This book will provide you with a wealth of information about the three segments of the CSWP CORE exam. The intended audience for this book is a person who has passed the CSWA exam and who has eight or more months of SOLIDWORKS training and usage. This guide is not intended to teach you how to use SOLIDWORKS, but is written to provide you with CSWP exam tips, hints and information on sample questions and categories that are aligned with the exam. This guide is written to help you take and pass the CSWP exam. The book is organized into three chapters. Each chapter is focused on a segment of the CSWP CORE exam. This is not intended to be a step-by-step book. Goals of this book The primary goal is not only to help you pass the CSWP CORE exam, but also to ensure that you understand and comprehend the concepts and implementation details of the process. The second goal is to provide the most comprehensive coverage of CSWP CORE exam related topics available, without too much coverage of topics not on the exam. The third and ultimate goal is to get you from where you are today to the point that you can confidently pass all three segments of the CSWP CORE exam. Who this book is for The intended audience for this book and the CSWP exam is a person who has passed the CSWA exam and who has eight or more months of SOLIDWORKS training and usage. However, passing the CSWA exam is not a prerequisite for taking the CSWP exam if you are a commercial user in industry. For students that take the CSWP exam through their school, you must first pass the CSWA exam.

Parametric Modeling with SolidWorks 2014 Paul Schilling 2014-03-07 Parametric Modeling with SolidWorks 2014 contains a series of sixteen tutorial style lessons designed to introduce SolidWorks 2014, solid modeling and parametric modeling techniques and concepts. This book introduces SolidWorks 2014 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 2014 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.

Drawing and Detailing with SolidWorks 2014 David Planchard 2014 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.

Thermal Analysis with SolidWorks Simulation 2014 Paul Kurowski 2014-03 Thermal Analysis with SolidWorks Simulation 2014 goes beyond the standard software manual. It concurrently introduces the reader to thermal analysis and its implementation in SolidWorks Simulation using hands-on exercises. A number of projects are presented to illustrate thermal analysis and related topics. Each chapter is designed to build on the skills and understanding gained from previous exercises. Thermal Analysis with SolidWorks Simulation 2014 is designed for users who are already familiar with the basics of Finite Element Analysis (FEA) using SolidWorks Simulation or who have completed the book Engineering Analysis with SolidWorks Simulation 2014. Thermal Analysis with SolidWorks Simulation 2014 builds on these topics in the area of thermal analysis. Some understanding of FEA and SolidWorks Simulation is assumed.

Solidworks 2014 Sham Tickoo 2014-02-21 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.

Advanced Manufacturing and Automation V K. Wang 2016-02-03 Advanced Manufacturing and Automation V contains the proceedings of the 5th International Workshop of Advanced Manufacturing and Automation (IWAMA 2015). This meeting continues the success of this important international workshop series and disseminates the works of academic and industrial experts, from around the world, in the areas of advanced manufacturing and automation. The disciplines of manufacturing and automation have attained paramount importance and are vital factors for the maintenance and improvement of the economy of a nation and the quality of life. Manufacturing and automation are advancing at a rapid pace and new technologies are constantly emerging in the fields. The challenges faced by today's engineers are forcing them to keep on top of the emerging trends through continuous research and development. The papers comprising these proceedings cover various topics including: Robotics and automation; Computational intelligence; Design and optimization; Product life-cycle management; Integration of CAD/CAPP/CAM/CIMS; Advanced manufacturing systems; Manufacturing operations management; Knowledge-based manufacturing; Manufacturing quality control and management; Sustainable production; Diagnosis and prognosis of machines; Lean and agile manufacturing; Virtual and grid manufacturing; Resource and asset management; Logistics and supply chain management; RFID applications; Predictive maintenance; Reliability and maintainability in manufacturing; Project management; Renewable energy development; Environment protection; Intelligent detection.

Engineering Graphics with SOLIDWORKS 2015 and Video Instruction David Planchard 2015-01-14 Engineering Graphics with SOLIDWORKS 2015 and video instruction is written to assist the technical school, two year college, four year university instructor/student or industry professional that is a beginner or intermediate SOLIDWORKS user. The book combines the fundamentals of engineering graphics and dimensioning practices with a step-by-step project based approach to learning SOLIDWORKS with video instructions. Learn by doing, not just by reading. The book is divided into four sections: Chapters 1 - 3 explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of SOLIDWORKS. Chapters 4 - 9 explore the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings and six document templates. Chapter 10 provides a section on the Certified Associate - Mechanical Design (CSWA) program with sample exam questions and initial and final SOLIDWORKS models. Chapter 11 provides a section on Additive Manufacturing (3D printing) and its benefits and features. Understand the terms and technology used in low cost 3D printers. Review individual features, commands, and tools using the video instruction and SOLIDWORKS Help. The chapter exercises analyze and examine usage competencies based on the chapter objectives. The book is designed to complement the SOLIDWORKS Tutorials located in the SOLIDWORKS Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SOLIDWORKS in industry. 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.

Engineering Graphics with SolidWorks 2014 and Video Instruction David Planchard 2014-01-24 Engineering Graphics with SolidWorks 2014 and video instruction is written to assist technical school, two year college, four year university instructor/student or industry professional that is a beginner or intermediate SolidWorks user. The book combines the fundamentals of engineering graphics and dimensioning practices with a step-by-step project based approach to learning SolidWorks with video instructions. Learn by doing, not just by reading. The book is divided into two parts: Engineering Graphics and SolidWorks 3D CAD software. In Chapter 1 through Chapter 3, you explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of SolidWorks. In Chapter 4 through Chapter 8, you apply engineering graphics fundamentals and learn the SolidWorks User Interface, Document and System properties, simple parts, simple and complex assemblies, design tables, configurations, multi-sheet, multi-view drawings, Bill of Materials, Revision tables, basic and advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings, and six document templates. Formulate the skills to create and modify solid features to model a FLASHLIGHT assembly. Chapter 9 provides a bonus section on the Certified Associate - Mechanical Design (CSWA) program with sample exam questions and initial and final SolidWorks models. Passing the CSWA exam proves to employers that you have the necessary fundamental engineering graphics and SolidWorks competencies. Review individual features, commands, and tools for each project using the video instruction and SolidWorks Help. The chapter exercises analyze and examine usage competencies based on the project objectives. The book is designed to complement the SolidWorks Tutorials located in the SolidWorks Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SolidWorks in industry. 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.

Analysis of Machine Elements Using SolidWorks Simulation 2014 John R. Steffen 2014-05-14 Analysis of Machine Elements Using SolidWorks Simulation 2014 is written primarily for first-time SolidWorks Simulation 2014 users who wish to understand finite element analysis capabilities applicable to stress analysis of mechanical elements. The focus of examples is on problems commonly found in an introductory, undergraduate, Design of Machine Elements or similarly named courses. In order to be compatible with most machine design textbooks, this text begins with problems that can be solved with a basic understanding of mechanics of materials. Problem types quickly migrate to include states of stress found in more specialized situations common to a design of mechanical elements course. Paralleling this progression of problem types, each chapter introduces new software concepts and capabilities. Many examples are accompanied by problem solutions based on use of classical equations for stress determination. Unlike many step-by-step user guides that only list a succession of steps, which if followed correctly lead to successful solution of a problem, this text attempts to provide insight into why each step is performed. This approach amplifies two fundamental tents of this text. The first is that a better understanding of course topics related to stress

determination is realized when classical methods and finite element solutions are considered together. The second tenet is that finite element solutions should always be verified by checking, whether by classical stress equations or experimentation. Each chapter begins with a list of learning objectives related to specific capabilities of the SolidWorks Simulation program introduced in that chapter. Most software capabilities are repeated in subsequent examples so that users gain familiarity with their purpose and are capable of using them in future problems. All end-of-chapter problems are accompanied by evaluation "check sheets" to facilitate grading assignments.

Official Certified SolidWorks Professional (CSWP) Certification Guide with Video Instruction David Planchard 2014-04-28 This book, along with the companion disc that accompanies it, will provide you with a wealth of information about the three segments of the CSWP CORE exam. The intended audience for this book is a person who has passed the CSWA exam and who has eight or more months of SolidWorks training and usage. This guide is not intended to teach you how to use SolidWorks, but is written to provide you with CSWP exam tips, hints and information on sample questions and categories that are aligned with the exam. This guide is written to help you take and pass the CSWP exam. This book comes with a companion disc containing segment videos for you to follow while you use the book. Each segment video provides valuable information, tips and tricks to successfully pass the CSWP CORE exam. SolidWorks model files, in both their initial and final state, are provided on this disc for SolidWorks 2012, 2013 and 2014. The book is organized into three chapters. Each chapter is focused on a segment of the CSWP CORE exam. This is not intended to be a step-by-step book.

Solidworks 2014 Black Book Matt Weber 2014-01-12 The SolidWorks 2014 Black Book, is written to help professionals as well as learners in creating some of the most complex solid models. The book follows a step by step methodology. This book is more concentrated on making you able to use tools at right places in place of tell you just the tools. The book covers almost all the information required by a learner to master the SolidWorks. The book starts with sketching and ends at advanced topics like mold design and sheetmetal. Some of the salient features of this book are: In-Depth explanation of concepts Every new topic of this book starts with the explanation of the basic concepts. In this way, the user becomes capable of relating the things with real world. Topics Covered Every chapter starts with a list of topics being covered in that chapter. In this way, the user can easy find the topic of his/her interest easily. Instruction through illustration The instructions to perform any action are provided by maximum number of illustrations so that the user can perform the actions discussed in the book easily and effectively. There are about 800 illustrations that make the learning process effective. Step by step approach At the end of concept's explanation, the practical make the understanding of users firm and long lasting. Almost each chapter of the book has practicals that are real world projects. Project Free projects and exercises are provided to students for practicing. For Faculty If you are a faculty member, then you can ask for video tutorials on any of the topic, exercise, tutorial, or concept.

SolidWorks 2014 Tutorial with Video Instruction David Planchard 2014 SolidWorks 2014 Tutorial with video instruction is targeted towards a technical school, two year college, four year university or industry professional that is a beginner or intermediate CAD user. The text provides a student who is looking for a step-by-step project based approach to learning SolidWorks with video instruction, SolidWorks model files, and preparation for the Certified Associate - Mechanical Design (CSWA) exam. The book is divided into two sections. Chapters 1 - 5 explore the SolidWorks User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, Revision tables using basic and advanced features. Chapters 6 - 9 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. 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 2014 for Designers 2014 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.

Engineering Graphics with SOLIDWORKS 2020 David Planchard 2019-12 Engineering Graphics with SOLIDWORKS 2020 is written to assist students, designers, engineers and professionals who are new to SOLIDWORKS. The book combines the fundamentals of engineering graphics and dimensioning practices with a step-by-step project based approach to learning SOLIDWORKS. The book is divided into four sections with 11 Chapters. Chapters 1 - 3: Explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of SOLIDWORKS. Chapters 4 - 9: Comprehend the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings and six document templates. Chapter 10: Prepare for the Certified SOLIDWORKS Associate (CSWA) exam. Understand the curriculum and categories of the CSWA exam and the required model knowledge needed to successfully take the exam. Chapter 11: Provide a basic understanding between Additive vs. Subtractive manufacturing. Discuss Fused Filament Fabrication (FFF), STereoLithography (SLA), and Selective Laser Sintering (SLS) printer technology. Select suitable filament material. Comprehend 3D printer terminology. Knowledge of preparing, saving, and printing a model on a Fused Filament Fabrication 3D printer. Information on the Certified SOLIDWORKS Additive Manufacturing (CSWA-AM) exam. Review individual features, commands, and tools using SOLIDWORKS Help. The chapter exercises analyze and examine usage competencies based on the chapter objectives. The book is designed to complement the SOLIDWORKS Tutorials located in the SOLIDWORKS Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SOLIDWORKS in industry. The author developed the industry scenarios by combining his own industry experience with the knowledge of engineers, department managers, vendors and manufacturers.

Engineering Graphics with SOLIDWORKS 2016 and Video Instruction David Planchard 2016 Engineering Graphics with SOLIDWORKS 2016 and video instruction is written to assist the technical school, two year college, four year university instructor/student or industry professional that is a beginner or intermediate SOLIDWORKS user. The book combines the fundamentals of engineering

graphics and dimensioning practices with a step-by-step project based approach to learning SOLIDWORKS with video instructions. Learn by doing, not just by reading. The book is divided into four sections: Chapters 1 - 3 explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of SOLIDWORKS. Chapters 4 - 9 explore the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings and six document templates. Chapter 10 provides a section on the Certified Associate - Mechanical Design (CSWA) program with sample exam questions and initial and final SOLIDWORKS models. Chapter 11 provides a section on Additive Manufacturing (3D printing) and its benefits and features. Understand the terms and technology used in low cost 3D printers. Review individual features, commands, and tools using the video instruction and SOLIDWORKS Help. The chapter exercises analyze and examine usage competencies based on the chapter objectives. The book is designed to complement the SOLIDWORKS Tutorials located in the SOLIDWORKS Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by-step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SOLIDWORKS in industry. 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.

Introduction to Solid Modeling Using SolidWorks 2014 William Howard 2014-06-09 Introduction to Solid Modeling Using SolidWorks® 2014 presents "keystroke-level" tutorials, providing users new to the SolidWorks® program with all the detail they need to become confident using the software. Topics are illustrated and infused with examples from the real world such as flanges, brackets, helical springs, and more. Additionally, this easy-to-use guide has modular chapters, allowing for flexible organization of a course or self-study. Accessible and updated for the newest version of software, Introduction to Solid Modeling Using SolidWorks® 2014 by Howard and Musto relates solid modeling exercises to engineering concepts in a way that introduces the engineering design process while simultaneously building student proficiency with a state-of-the-art software tool. The Student Design Kit is no longer available as a download. Instructors can receive free 1 year copies of SolidWorks for their students by going to www.solidworks.com/studentaccess. Schools must be on subscription to receive free student software.

Engineering Analysis with SolidWorks Simulation 2014 Paul Kurowski 2014 Engineering Analysis with SolidWorks Simulation 2014 goes beyond the standard software manual. Its unique approach concurrently introduces you to the SolidWorks Simulation 2014 software and the fundamentals of Finite Element Analysis (FEA) through hands-on exercises. A number of projects are presented using commonly used parts to illustrate the analysis features of SolidWorks Simulation. Each chapter is designed to build on the skills, experiences and understanding gained from the previous chapters. Topics covered: Linear static analysis of parts and assemblies Contact stress analysis Frequency (modal) analysis Buckling analysis Thermal analysis Drop test analysis Nonlinear analysis Dynamic analysis Random vibration analysis h and p adaptive solution methods Modeling techniques Implementation of FEA in the design process Management of FEA projects FEA terminology Beginner's Guide to SolidWorks 2014 - Level I Alejandro Reyes 2014-02-26 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 the user completes 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 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.

SolidWorks 2014 Reference Guide David Planchard 2014-03 The SolidWorks 2014 Reference Guide is a comprehensive reference book written to assist the beginner to intermediate user of SolidWorks 2014. 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 2014. Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SolidWorks 2014 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. Videos are provided to introduce the new user to the basics of using SolidWorks 3D CAD software. 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 (18 total) provides detailed PropertyManager information on key topics with individual standalone short tutorials to reinforce and demonstrate the functionality and ease of the SolidWorks tool or feature. All models for the 240 plus tutorials are located on the enclosed book CD with their solution (initial and final). 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 2014. 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.

Engineering Graphics with SOLIDWORKS 2017 and Video Instruction David Planchard 2017-02 Engineering Graphics with SOLIDWORKS 2017 and Video Instruction is written to assist students, designers, engineers and professionals who are new to SOLIDWORKS. The book is divided into four sections: Chapters 1 - 3 explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of SOLIDWORKS. Chapters 4 - 9 explore the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and

advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings and six document templates. Chapter 10 provides a section on the Certified Associate - Mechanical Design (CSWA) program with sample exam questions and initial and final SOLIDWORKS models. Chapter 11 provides a section on Additive Manufacturing (3D printing) and its benefits and features. Understand the terms and technology used in low cost 3D printers. Review individual features, commands, and tools using the video instruction and SOLIDWORKS Help. The chapter exercises analyze and examine usage competencies based on the chapter objectives. The book is designed to complement the SOLIDWORKS Tutorials located in the SOLIDWORKS Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by-step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SOLIDWORKS in industry. The author developed the industry scenarios by combining his own industry experience with the knowledge of engineers, department managers, vendors, and manufacturers. This professional is directly involved with SOLIDWORKS every day. His responsibilities go far beyond the creation of just a 3D model.

SolidWorks 2015 Reference Guide David Planchard 2014-11-02 The SolidWorks 2015 Reference Guide is a comprehensive reference book written to assist the beginner to intermediate user of SolidWorks 2015. 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 2015. This book covers the following: System and Document properties, FeatureManagers, PropertyManagers, ConfigurationManagers, RenderManagers, 2D and 3D Sketch tools, Sketch entities, 3D Feature tools, Motion Study, Sheet Metal, Motion Study, SolidWorks Simulation, PhotoView 360, Pack and Go, 3D PDFs, Intelligent Modeling techniques, 3D printing terminology and more. Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SolidWorks 2015 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 240 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 2015. 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.

SolidWorks 2014 and Engineering Graphics - An Integrated Approach Randy Shih 2013-12-19 SolidWorks 2014 and Engineering Graphics: An Integrated Approach combines an introduction to SolidWorks 2014 with a comprehensive coverage of engineering graphics principles. Not only will this unified approach give your course a smoother flow, your students will also save money on their textbooks. What's more, 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. The primary goal of SolidWorks 2014 and Engineering Graphics: An Integrated Approach is to introduce the aspects of Engineering Graphics with the use of modern Computer Aided Design package – SolidWorks 2014. This text is intended to be used as a training guide for students and professionals. The chapters in this text proceed in a pedagogical fashion to guide you from constructing basic shapes to making complete sets of engineering drawings. This text takes a hands-on, exercise-intensive approach to all the important concepts of Engineering Graphics, as well as in-depth discussions of parametric feature-based CAD techniques. This textbook contains a series of fifteen chapters, with detailed step-by-step tutorial style lessons, designed to introduce beginning CAD users to the graphic language used in all branches of technical industry. This book does not attempt to cover all of SolidWorks 2014's features, only to provide an introduction to the software. It is intended to help you establish a good basis for exploring and growing in the exciting field of Computer Aided Engineering.

Engineering Graphics with SOLIDWORKS 2019 David Planchard 2019-01-03 Engineering Graphics with SOLIDWORKS 2019 is written to assist students, designers, engineers and professionals who are new to SOLIDWORKS. The book combines the fundamentals of engineering graphics and dimensioning practices with a step-by-step project based approach to learning SOLIDWORKS. The book is divided into four sections with 11 Chapters. Chapters 1 - 3: Explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of SOLIDWORKS. Chapters 4 - 9: Comprehend the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings and six document templates. Chapter 10: Prepare for the Certified SOLIDWORKS Associate (CSWA) exam. Understand the curriculum and categories of the CSWA exam and the required model knowledge needed to successfully take the exam. Chapter 11: Provide a basic understanding between Additive vs. Subtractive manufacturing. Discuss Fused Filament Fabrication (FFF), STereoLithography (SLA), and Selective Laser Sintering (SLS) printer technology. Select suitable filament material. Comprehend 3D printer terminology. Knowledge of preparing, saving, and printing a model on a Fused Filament Fabrication 3D printer. Information on the Certified SOLIDWORKS Additive Manufacturing (CSWA-AM) exam. Review individual features, commands, and tools using SOLIDWORKS Help. The chapter exercises analyze and examine usage competencies based on the chapter objectives. The book is designed to complement the SOLIDWORKS Tutorials located in the SOLIDWORKS Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by-step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SOLIDWORKS in industry. The author developed the industry scenarios by combining his own industry experience with the knowledge of engineers, department managers, vendors and manufacturers.

SolidWorks 2014 Part II - Advanced Techniques Paul Tran 2013-12 SolidWorks 2014 Part II - Advanced Techniques picks up where SolidWorks 2014 Part I - Basic Tools 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 for the reader. Furthermore, at the end of every chapter there are self test questionnaires to ensure that the reader has 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, the reader should create everything from the beginning and take it step by step.

Engineering Design with SolidWorks 2011 David C. Planchard 2011 Engineering Design with SolidWorks 2011 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 beginning 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: SimulationXpress, Sustainability / SustainabilityXpress and DFMXpress and Intelligent Modeling techniques. 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 Project 1 - 8 to achieve the design goals. 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 enclosed Multi-media CD. 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 authors developed the industry scenarios by combining their own industry experience with the knowledge of engineers, department managers, vendors and manufacturers. These professionals are directly involved with SolidWorks everyday. Their responsibilities go far beyond the creation of just a 3D model. The book is designed to compliment the SolidWorks Tutorials contained in SolidWorks 2011.

SolidWorks 2014 Black Book Matt 2014-03-19 The SolidWorks 2014 Black Book, is written to help professionals as well as learners in creating some of the most complex solid models. The book follows a step by step methodology. This book is more concentrated on making you able to use tools at right places in place of tell you just the tools. The book covers almost all the information required by a learner to master the SolidWorks. The book starts with sketching and ends at advanced topics like mold design and sheetmetal. Some of the salient features of this book are : In-Depth explanation of concepts Every new topic of this book starts with the explanation of the basic concepts. In this way, the user becomes capable of relating the things with real world. Topics Covered Every chapter starts with a list of topics being covered in that chapter. In this way, the user can easy find the topic of his/her interest easily. Instruction through illustration The instructions to perform any action are provided by maximum number of illustrations so that the user can perform the actions discussed in the book easily and effectively. There are about 800 illustrations that make the learning process effective. Tutorial point of view At the end of concept's explanation, the tutorial make the understanding of users firm and long lasting. Almost each chapter of the book has tutorials that are real world projects. Project Free projects and exercises are provided to students for practicing. For Faculty If you are a faculty member, then you can ask for video tutorials on any of the topic, exercise, tutorial, or concept. Formatting Conventions Used in the Text All the key terms like name of button, tool, drop-down etc. are kept bold. Free Resources Link to the resources used in this book are provided to the users via email. To get the resources, mail us at cadcamcaeworks@gmail.com with your contact information. With your contact record with us, you will be provided latest updates and informations regarding various technologies. The format to write us mail for resources is as follows: Subject of E-mail as Application for resources of _____book. Also, given your information like Name: Course pursuing/Profession: Contact Address: E-mail ID: For Any query or suggestion If you have any query or suggestion please let us know by mailing us on cadcamcaeworks@gmail.com. Your valuable constructive suggestions will be incorporated in our books and your name will be addressed in special thanks area of our books.

Beginner's Guide to SolidWorks 2014 - Level II Alejandro Reyes 2014-02-26 Beginner's Guide to SolidWorks 2014 – Level II starts where Beginner's Guide – Level I ends, following the same easy to read style and companion video instruction, but this time covering advanced topics and techniques. The purpose of this book is to teach advanced techniques including sheet metal, surfacing, how to create components in the context of an assembly and reference other components (Top-down design), propagate design changes with SolidWorks' parametric capabilities, mold design, welded structures, and more while explaining the basic concepts of each trade to allow you to understand the how and why of each operation. The author uses simple examples to allow you to better understand each command and environment, as well as to make it easier to explain the purpose of each step, maximizing the learning time by focusing on one task at a time. This book is focused 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. At the end of this book, you will have acquired enough skills to be highly competitive when it comes to designing with SolidWorks, and while there are many less frequently used commands and options available that will not be covered in this book, rest assured that those covered are most of the commands used every day by SolidWorks designers. The author strived hard to include the commands required in the Certified SolidWorks Associate test as listed on the SolidWorks website, and some, as well as several more.

Commands Guide Tutorial for SolidWorks 2013 David C. Planchard 2012-12-27 The Commands Guide Tutorial for SolidWorks 2013 is a comprehensive reference book written to assist the beginner to intermediate user of SolidWorks 2013. 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 2013. This book covers the following: System and Document properties FeatureManagers PropertyManagers ConfigurationManagers RenderManagers 2D and 3D Sketch tools Sketch entities 3D Feature tools Motion Study Sheet Metal Motion Study Sustainability Sustainability Xpress FlowXpress PhotoView 360 Pack and Go Intelligent Modeling techniques and more. Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SolidWorks 2013 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 (18 total) 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. All models for the 240 plus tutorials are located on the enclosed book CD with their solution (initial and final). 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 design to compliment the Online Tutorials and Online Help contained in SolidWorks 2013. The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs. The authors developed the tutorials by combining their own industry experience with the knowledge of engineers, department managers, professors, vendors and manufacturers. These professionals are directly involved with SolidWorks everyday. Their responsibilities go far beyond the creation of just a 3D model.

SolidWorks 2014 Part I - Basic Tools Paul Tran 2013-12 **SolidWorks 2014 Part I - Basic Tools** introduces new users to the SolidWorks interface, SolidWorks tools and basic modeling techniques. It provides readers with a strong understanding of SolidWorks and covers the creation of parts, assemblies and drawings. 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 for the reader. Furthermore, at the end of every chapter there are self test questionnaires to ensure that the reader has 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, the reader should create everything from the beginning and take it step by step.

SolidWorks 2014 Design Bible-II Kris 2013-12-10 **The SolidWorks 2014 Design Bible-II**, is written to help professionals as well as learners in creating Assemblies and then creating drafting from assemblies as well as models. The book covers almost all the information required by a learner to master the SolidWorks 2014. It covers basic as well as advanced topics like Assembly mates, Mechanical mates, Advanced mates, surface modeling, Drawing view and related operations, Sheetmetal, Motion Study and so on. Some of the salient features of this book are : In-Depth explanation of concepts Every new topic of this book starts with the explanation of the basic concepts. In this way, the user becomes capable of relating the things with real world. Topics Covered Every chapter starts with a list of topics being covered in that chapter. In this way, the user can easy find the topic of his/her interest easily. Instruction through illustration The instructions to perform any action are provided by maximum number of illustrations so that the user can perform the actions discussed in the book easily and effectively. There are about 1200 illustrations that make the learning process effective. Tutorial point of view At the end of concept's explanation, the tutorial make the understanding of users firm and long lasting. Almost each chapter of the book has tutorials that are real world projects. Project The projects are provided to the customers who mail us and give their feedback on the book at technishia@gmail.com. Free Resources Link to the resources used in this book are provided to the users via email. To get the resources mail us at technishia@gmail.com with your contact information. With your contact record with us, you will be provided latest updates and informations regarding various technologies. The format to write us mail for resources is as follows: Subject of E-mail as Application for resources of _____ book. Name: Name of book purchased: Course pursuing/Profession: Contact Address: E-mail ID: For Any query or suggestion If you have any query or suggestion, please let us know by mailing us on technishia@gmail.com. Your valuable constructive suggestions will be incorporated in our books and your name will be addressed in special thanks area of our books.

SolidWorks 2015 Tutorial with Video Instruction David Planchard 2014-12 **SolidWorks 2015 Tutorial with video instruction** is target towards a technical school, two year college, four year university or industry professional that is a beginner or intermediate CAD user. The text provides a student who is looking for a step-by-step project based approach to learning SolidWorks with video instruction, SolidWorks model files, and preparation for 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, multi-sheet, multi-view drawings, BOMs, 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. Review 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.

Beginner's Guide to SOLIDWORKS 2016 - Level I Alejandro Reyes 2015-12 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.

Training SolidWorks 2014 Esa Hietikko 2013-10-29 In modern mechanical design 3D modeling is widely used. The 3D parametric design differs a lot from traditional 2D drawing. The effective use of 3D save time and costs. **Training SolidWorks 2014** is a textbook for practical training of mechanical design using SolidWorks software. It includes chapters in pedagogically chronological order which helps students to understand the efficient use of the software tool in everyday mechanical engineering design. It is the first English edition of popular Finnish textbook that recently appeared as 6. edition.

Engineering Graphics with SOLIDWORKS 2022 David Planchard **Engineering Graphics with SOLIDWORKS 2022** is written to assist students, designers, engineers and professionals who are new to SOLIDWORKS. The book combines the fundamentals of engineering graphics and dimensioning practices with a step-by-step project based approach to learning SOLIDWORKS. The book is divided into four sections with 11 Chapters. Chapters 1 - 3: Explore the history of engineering graphics, manual sketching techniques, orthographic projection, Third vs. First angle projection, multi-view drawings, dimensioning practices (ASME Y14.5-2009 standard), line type, fit type, tolerance, fasteners in general, general thread notes and the history of CAD leading to the development of

SOLIDWORKS. Chapters 4 - 9: Comprehend the SOLIDWORKS User Interface and CommandManager, Document and System properties, simple machine parts, simple and complex assemblies, proper design intent, design tables, configurations, multi-sheet, multi-view drawings, BOMs, and Revision tables using basic and advanced features. Follow the step-by-step instructions in over 80 activities to develop eight parts, four sub-assemblies, three drawings and six document templates. Chapter 10: Prepare for the Certified SOLIDWORKS Associate (CSWA) exam. Understand the curriculum and categories of the CSWA exam and the required model knowledge needed to successfully take the exam. Chapter 11: Provide a basic understanding between Additive vs. Subtractive manufacturing. Discuss Fused Filament Fabrication (FFF), STereoLithography (SLA), and Selective Laser Sintering (SLS) printer technology. Select suitable filament material. Comprehend 3D printer terminology. Knowledge of preparing, saving, and printing a model on a Fused Filament Fabrication 3D printer. Information on the Certified SOLIDWORKS Additive Manufacturing (CSWA-AM) exam. Review individual features, commands, and tools using SOLIDWORKS Help. The chapter exercises analyze and examine usage competencies based on the chapter objectives. The book is designed to complement the SOLIDWORKS Tutorials located in the SOLIDWORKS Help menu. Desired outcomes and usage competencies are listed for each project. Know your objectives up front. Follow the step-by-step procedures to achieve your design goals. Work between multiple documents, features, commands, and properties that represent how engineers and designers utilize SOLIDWORKS in industry. The author developed the industry scenarios by combining his own industry experience with the knowledge of engineers, department managers, vendors and manufacturers.

Official Certified SOLIDWORKS Professional Certification Guide (SOLIDWORKS 2020 - 2023) David C. Planchard 2022-11 This book will provide you with a wealth of information about the three segments of the CSWP CORE exam. The intended audience for this book is a person who has passed the CSWA exam and who has eight or more months of SOLIDWORKS training and usage. This guide is not intended to teach you how to use SOLIDWORKS, but is written to provide you with CSWP exam tips, hints and information on sample questions and categories that are aligned with the exam. This guide is written to help you take and pass the CSWP exam. The book is organized into three chapters. Each chapter is focused on a segment of the CSWP CORE exam. This is not intended to be a step-by-step book. Goals of this book The primary goal is not only to help you pass the CSWP CORE exam, but also to ensure that you understand and comprehend the concepts and implementation details of the process. The second goal is to provide the most comprehensive coverage of CSWP CORE exam related topics available, without too much coverage of topics not on the exam. The third and ultimate goal is to get you from where you are today to the point that you can confidently pass all three segments of the CSWP CORE exam. Who this book is for The intended audience for this book and the CSWP exam is a person who has passed the CSWA exam and who has eight or more months of SOLIDWORKS training and usage. However, passing the CSWA exam is not a prerequisite for taking the CSWP exam if you are a commercial user in industry. For students that take the CSWP exam through their school, you must first pass the CSWA exam.