

SolidWorks 2014 for Designers

CADCIM Technologies

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*To teachers, who make it possible to disseminate knowledge
to enlighten the young and curious minds
of our future generations*

*To students, who are dedicated to learning new technologies
and making the world a better place to live in*

THANKS

*To the faculty and students of the MET Department of
Purdue University Calumet for their cooperation*

To employees of CADCIM Technologies for their valuable help

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Table of Contents

Dedication	iii
Preface	xxi
Chapter 1: Introduction to SolidWorks 2014	
Introduction to SolidWorks 2014	1-2
Part Mode	1-2
Assembly Mode	1-3
Drawing Mode	1-3
System Requirements	1-4
Getting Started with SolidWorks	1-4
Menu Bar and SolidWorks Menus	1-8
CommandManager	1-8
Part Mode CommandManagers	1-8
Assembly Mode CommandManagers	1-10
Drawing Mode CommandManagers	1-11
Customized CommandManager	1-11
Toolbar	1-12
Pop-up Toolbar	1-12
View (Heads-Up) Toolbar	1-12
Shortcut Bar	1-13
Mouse Gestures	1-13
Dimensioning Standard and Units	1-14
Important Terms and Their Definitions	1-14
Feature-based Modeling	1-14
Parametric Modeling	1-14
Bidirectional Associativity	1-15
Windows Functionality	1-16
SWIFT Technology	1-16
Geometric Relations	1-16
Blocks	1-18
Library Feature	1-18
Design Table	1-18
Equations	1-18
Collision Detection	1-19
What's Wrong Functionality	1-19
2D Command Line Emulator	1-19
SimulationXpress	1-19
Physical Dynamics	1-19
Physical Simulation	1-19
Seed Feature	1-20
FeatureManager Design Tree	1-20
Absorbed Features	1-20

Child Features	1-20
Dependent Features	1-21
Auto-Backup Option	1-21
Selecting Hidden Entities	1-21
Hot Keys	1-21
Color Scheme	1-23
Self-Evaluation Test	1-24

Chapter 2: Drawing Sketches for Solid Models

The Sketching Environment	2-2
Starting a New Session of SolidWorks 2014	2-3
Help customization Area	2-3
Work flow customization Area	2-4
Task Panes	2-4
SolidWorks Resources Task Pane	2-4
Design Library Task Pane	2-5
File Explorer Task Pane	2-5
View Palette Task Pane	2-5
Appearances, Scenes, and Decals Task Pane	2-6
Custom Properties Task Pane	2-6
Starting a New Document in SolidWorks 2014	2-7
Part	2-7
Assembly	2-7
Drawing	2-7
Understanding the Sketching Environment	2-8
Setting the Document Options	2-10
Modifying the Drafting Standards	2-10
Modifying the Linear and Angular Units	2-11
Modifying the Snap and Grid Settings	2-13
Learning Sketcher Terms	2-14
Origin	2-14
Inferencing Lines	2-14
Select Tool	2-15
Selecting Entities Using the Box Selection	2-15
Selecting Entities Using the Cross Selection	2-15
Selecting Entities Using the SHIFT and CTRL Keys	2-16
Invert Selection Tool	2-16
Drawing Lines	2-16
Orientation Rollout	2-17
Options Rollout	2-17
Drawing Continuous Lines	2-17
Drawing Individual Lines	2-19
Line Cursor Parameters	2-19
Drawing Tangent or Normal Arcs Using the Line Tool	2-20
Drawing Construction Lines or Centerlines	2-21
Drawing the Lines of Infinite Length	2-21

Drawing Circles	2-22
Drawing Circles by Defining their Center Points	2-22
Drawing Circles by Defining Three Points	2-23
Drawing Construction Circles	2-23
Drawing Arcs	2-24
Drawing Tangent/Normal Arcs	2-24
Drawing Centerpoint Arcs	2-25
Drawing 3 Point Arcs	2-26
Drawing Rectangles	2-27
Drawing Rectangles by Specifying their Corners	2-27
Drawing Rectangles by Specifying the Center and a Corner	2-28
Drawing Rectangles at an Angle	2-28
Drawing Centerpoint Rectangles at an Angle	2-29
Drawing Parallelograms	2-29
Drawing Polygons	2-30
Drawing Splines	2-32
Drawing Slots	2-33
Creating a Straight Slot	2-33
Creating a Centerpoint Straight Slot	2-33
Creating a 3 Point Arc Slot	2-34
Creating a Centerpoint Arc Slot	2-34
Placing Sketched Points	2-35
Drawing Ellipses	2-35
Drawing Elliptical Arcs	2-36
Drawing Parabolic Curves	2-37
Drawing Conic Curves	2-38
Drawing Display Tools	2-39
Zoom to Fit	2-39
Zoom to Area	2-40
Zoom In/Out	2-40
Zoom to Selection	2-40
Pan	2-40
Previous View	2-41
Redraw	2-41
Deleting Sketched Entities	2-41
Tutorial 1	2-41
Tutorial 2	2-47
Tutorial 3	2-50
Tutorial 4	2-54
Self-Evaluation Test	2-62
Review Questions	2-62
Exercise 1	2-64
Exercise 2	2-64
Exercise 3	2-65
Exercise 4	2-65

Chapter 3: Editing and Modifying Sketches

Editing Sketched Entities	3-2
Trimming Sketched Entities	3-2
Extending Sketched Entities	3-5
Convert Entities	3-6
Intersection Curves	3-6
Filleting Sketched Entities	3-7
Chamfering Sketched Entities	3-9
Offsetting Sketched Entities	3-10
Mirroring Sketched Entities	3-12
Mirroring While Sketching (Dynamic Mirror Entities)	3-13
Moving Sketched Entities	3-13
Rotating Sketched Entities	3-15
Scaling Sketched Entities	3-17
Stretching Sketched Entities	3-17
Copying and Pasting Sketched Entities	3-19
Creating Patterns	3-19
Creating Linear Sketch Patterns	3-20
Creating Circular Sketch Patterns	3-23
Editing Patterns	3-25
Writing Text in the Sketching Environment	3-26
Modifying Sketched Entities	3-27
Modifying a Sketched Line	3-27
Modifying a Sketched Circle	3-27
Modifying a Sketched Arc	3-27
Modifying a Sketched Polygon	3-28
Modifying a Spline	3-28
Modifying the Coordinates of a Point	3-30
Modifying an Ellipse or an Elliptical Arc	3-30
Modifying a Parabola	3-31
Dynamically Modifying and Copying Sketched Entities	3-31
Splitting Sketched Entities	3-31
Tutorial 1	3-32
Tutorial 2	3-36
Tutorial 3	3-41
Self-Evaluation Test	3-46
Review Questions	3-46
Exercise 1	3-48
Exercise 2	3-48
Exercise 3	3-49
Exercise 4	3-49
Exercise 5	3-50
Exercise 6	3-50

Chapter 4: Adding Relations and Dimensions to Sketches

Applying Geometric Relations to Sketches	4-2
Applying Relations Using the Add Relations PropertyManager	4-2
Design Intent	4-8
Dimensioning a Sketch	4-9
Horizontal/Vertical Dimensioning	4-11
Aligned Dimensioning	4-22
Angular Dimensioning	4-23
Diameter Dimensioning	4-25
Radius Dimensioning	4-25
Linear Diameter Dimensioning	4-26
Ordinate Dimensioning	4-26
Concept of a Fully Defined Sketch	4-28
Fully Defined	4-28
Overdefined	4-28
Underdefined	4-29
Dangling	4-29
No Solution Found	4-29
Invalid Solution Found	4-29
Sketch Dimension or Relation Status	4-29
Deleting Overdefined Dimensions	4-30
Displaying and Deleting Relations	4-32
Opening an Existing File	4-37
Address Bar	4-37
File name	4-37
Type Drop-down List	4-37
Open Read-Only	4-38
Mode Drop-down List	4-38
Configurations	4-38
References	4-38
Quick Filter	4-39
Display States Drop-down List	4-39
Tutorial 1	4-39
Tutorial 2	4-48
Tutorial 3	4-54
Self-Evaluation Test	4-63
Review Questions	4-64
Exercise 1	4-65
Exercise 2	4-65
Exercise 3	4-66

Chapter 5: Advanced Dimensioning Techniques and Base Feature Options

Advanced Dimensioning Techniques	5-2
Fully Defining the Sketches	5-2
Dimensioning the True Length of an Arc	5-4
Measuring Distances and Viewing Section Properties	5-4
Measuring Distances	5-5
Determining the Section Properties of Closed Sketches	5-7
Creating Base Features by Extruding Sketches	5-9
Creating Solid Extruded Features	5-9
Creating Thin Extruded Features	5-13
Creating Base Features by Revolving Sketches	5-15
Creating Solid Revolved Features	5-16
Creating Thin Revolved Features	5-18
Determining the Mass Properties of Parts	5-20
Dynamically Rotating the View of a Model	5-20
Rotating the View Freely in 3D Space	5-20
Rotating the View around a Selected Vertex, Edge, or Face	5-21
Modifying the View Orientation	5-21
Changing the Orientation Using the Reference Triad	5-23
Restoring the Previous View	5-24
Displaying the Drawing Area in Viewports	5-24
Displaying the Drawing Area in Two Horizontal Viewports	5-24
Displaying the Drawing Area in Two Vertical Viewports	5-24
Displaying the Drawing Area in Four Viewports	5-25
Display Modes of a Model	5-26
Wireframe	5-26
Hidden Lines Visible	5-26
Hidden Lines Removed	5-26
Shaded With Edges	5-26
Shaded	5-26
Additional Display Modes	5-26
Shadows In Shaded Mode	5-27
Perspective	5-27
Assigning Materials and Textures to Models	5-27
Assigning Materials to a Model	5-28
Changing the Appearance of the Model	5-29
Editing the Appearances	5-30
Tutorial 1	5-31
Tutorial 2	5-36
Tutorial 3	5-40
Self-Evaluation Test	5-45
Review Questions	5-46
Exercise 1	5-47
Exercise 2	5-48
Exercise 3	5-48

Chapter 6: Creating Reference Geometries

Importance of Sketching Planes	6-2
Reference Geometry	6-2
Reference Planes	6-3
Creating New Planes	6-4
Creating Reference Axes	6-10
Creating Reference Points	6-13
Creating Reference Coordinate Systems	6-15
Creating Center of Mass	6-15
Advanced Boss/Base Options	6-16
From	6-16
End Condition	6-18
Direction of Extrusion	6-23
Modeling Using the Contour Selection Method	6-23
Creating Cut Features	6-27
Creating Extruded Cuts <i>Enhanced</i>	6-27
Creating Multiple Bodies in the Cut Feature	6-30
Creating Revolved Cuts	6-32
Concept of the Feature Scope	6-33
Tutorial 1	6-33
Tutorial 2	6-37
Tutorial 3	6-42
Self-Evaluation Test	6-49
Review Questions	6-49
Exercise 1	6-51
Exercise 2	6-53
Exercise 3	6-53

Chapter 7: Advanced Modeling Tools-I

Advanced Modeling Tools	7-2
Creating Simple Holes	7-2
Creating Standard Holes Using the Hole Wizard <i>Enhanced</i>	7-3
Adding External Cosmetic Threads	7-9
Creating Fillets <i>Enhanced</i>	7-11
Selection Options	7-25
Creating Fillets Using the FilletXpert	7-27
Creating Chamfers	7-28
Creating Shell Features	7-31
Creating Wrap Features	7-34
Tutorial 1	7-36
Tutorial 2	7-44
Tutorial 3	7-51
Self-Evaluation Test	7-59
Review Questions	7-60
Exercise 1	7-61

Exercise 2	7-62
Exercise 3	7-63

Chapter 8: Advanced Modeling Tools-II

Advanced Modeling Tools	8-2
Creating Mirror Features	8-2
Creating Linear Pattern Features	8-6
Creating Circular Pattern Features	8-11
Creating Sketch Driven Patterns	8-13
Creating Curve Driven Patterns	8-14
Creating Table Driven Patterns	8-17
Creating Fill Patterns	8-18
Creating Rib Features	8-22
Displaying the Section View of a Model	8-26
Changing the Display States	8-28
Tutorial 1	8-29
Tutorial 2	8-36
Tutorial 3	8-41
Self-Evaluation Test	8-51
Review Questions	8-52
Exercise 1	8-53
Exercise 2	8-54
Exercise 3	8-55
Exercise 4	8-56

Chapter 9: Editing Features

Editing the Features of a Model	9-2
Editing Using the Edit Feature Option	9-2
Editing Sketches of the Sketch-based Features	9-3
Changing the Sketch Plane of the Sketches	9-3
Editing by Selecting an Entity or a Feature	9-4
Editing Using the Instant3D Tool	9-5
Editing Features and Sketches by Cut, Copy, and Paste	9-7
Cutting, Copying, and Pasting Features and Sketches from One Document to the Other	9-8
Copying Features Using Drag and Drop	9-8
Deleting Features	9-9
Deleting Bodies	9-10
Suppressing Features	9-10
Unsuppressing the Suppressed Features	9-11
Unsuppressing Features with Dependents	9-11
Hiding Bodies	9-11
Moving and Copying Bodies	9-12
Reordering the Features	9-14
Rolling Back the Feature	9-15

Renaming Features	9-16
Creating Folders in the FeatureManager Design Tree	9-16
What's Wrong Functionality	9-16
Tutorial 1	9-18
Tutorial 2	9-24
Tutorial 3	9-28
Self-Evaluation Test	9-35
Review Questions	9-35
Exercise 1	9-36
Exercise 2	9-37

Chapter 10: Advanced Modeling Tools-III

Advanced Modeling Tools	10-2
Creating Sweep Features	10-2
Creating Cut-Sweep Features	10-12
Creating Loft Features	10-13
Adding a Section to a Loft Feature	10-20
Creating Lofted Cuts	10-22
Creating 3D Sketches	10-22
Creating Grid Systems	10-24
Editing 3D Sketches	10-26
Creating Curves	10-26
Extruding a 3D Sketch	10-36
Creating Draft Features	10-37
Tutorial 1	10-41
Tutorial 2	10-44
Tutorial 3	10-48
Self-Evaluation Test	10-53
Review Questions	10-53
Exercise 1	10-55
Exercise 2	10-56
Exercise 3	10-57

Chapter 11: Advanced Modeling Tools-IV

Advanced Modeling Tools	11-2
Creating Dome Features	11-2
Creating Indents	11-5
Creating Deform Features	11-8
Creating Flex Features	11-12
Creating Fastening Features	11-16
Creating the Mounting Boss	11-16
Creating Snap Hooks	11-19
Creating Snap Hook Grooves	11-21
Creating Vents	11-23
Creating a Lip/Groove Feature	11-27

Creating Freeform Features	11-30
Face Settings Rollout	11-32
Control Curves Rollout	11-33
Control Points Rollout	11-33
Display Rollout	11-34
Dimensioning a Part Using DimXpert	11-34
Specifying the Datum	11-35
Pop-up Toolbar	11-36
Adding Dimensions	11-37
Specifying the Location of a Feature	11-38
Adding Geometric Tolerance to the Features	11-39
Collecting Pattern Features	11-40
Adding Dimensions Automatically	11-41
Tutorial 1	11-42
Tutorial 2	11-45
Tutorial 3	11-49
Tutorial 4	11-53
Self-Evaluation Test	11-58
Review Questions	11-59
Exercise 1	11-60

Chapter 12: Assembly Modeling-I

Assembly Modeling	12-2
Types of Assembly Design Approach	12-2
Creating Bottom-up Assemblies	12-3
Placing Components in the Assembly Document	12-4
Assembling Components	12-8
Creating Top-down Assemblies	12-26
Creating Components in the Top-down Assembly	12-26
Moving Individual Components	12-27
Moving Individual Components by Dragging	12-27
Moving Individual Components Using the Move Component Tool	12-27
Rotating Individual Components	12-28
Rotating Individual Components by Dragging	12-28
Rotating Individual Components Using the Rotate Component Tool	12-28
Moving and Rotating Individual Components Using the Triad	12-29
Assembly Visualization	12-30
Tutorial 1	12-32
Tutorial 2	12-43
Self-Evaluation Test	12-49
Review Questions	12-49
Exercise 1	12-51
Exercise 2	12-53
Exercise 3	12-59

Chapter 13: Assembly Modeling-II

Advanced Assembly Mates	13-2
Applying the Symmetric Mate	13-2
Applying the Width Mate	13-3
Applying the Distance Mate	13-3
Applying the Angle Mate	13-4
Applying the Path Mate	13-4
Mechanical Mates <i>Enhanced</i>	13-5
Applying the Cam Mate	13-5
Applying the Slot Mate	13-5
Applying the Gear Mate	13-6
Applying the Rack Pinion Mate	13-7
Applying the Screw Mate	13-7
Applying the Hinge Mate	13-8
Creating Sub-assemblies	13-8
Bottom-up Sub-assembly Design Approach	13-9
Top-down Sub-assembly Design Approach	13-9
Inserting a New Sub-assembly	13-10
Deleting Components and Sub-assemblies	13-10
Editing Assembly Mates	13-11
Replacing Mated Entities	13-11
Editing Components	13-12
Editing Sub-assemblies	13-13
Dissolving Sub-assemblies	13-13
Replacing Components	13-14
Creating Patterns of Components in an Assembly	13-16
Pattern Driven Pattern	13-16
Local Pattern	13-18
Copying and Mirroring Components	13-19
Copy a Component with Mates	13-20
Simplifying Assemblies using the Visibility Options	13-21
Hiding Components	13-21
Suppressing and Unsuppressing the Components	13-22
Changing the Transparency Conditions	13-22
Changing the Display States	13-22
Checking Interferences in an Assembly	13-23
Checking the Hole Alignment	13-24
Creating Assemblies for Mechanism	13-25
Analyzing Collisions Using the Collision Detection Tool	13-26
Creating the Exploded State of an Assembly	13-28
Creating the Explode Line Sketch	13-30
Tutorial 1	13-32
Tutorial 2	13-44
Self-Evaluation Test	13-48
Review Questions	13-49
Exercise 1	13-50

Chapter 14: Working with Drawing Views-I

The Drawing Mode	14-2
Starting a Drawing Document	14-2
Starting a New Drawing Document Using the New SolidWorks Document Dialog Box	14-2
Starting a New Drawing Document from the Part/Assembly Document	14-4
Types of Views	14-5
Model View	14-5
Projected View	14-5
Section View	14-5
Aligned Section View	14-5
Auxiliary View	14-5
Detail View	14-5
Broken View	14-5
Broken-out Section View	14-6
Crop View	14-6
Alternate Position View	14-6
Generating Standard Drawing Views	14-6
Generating Model Views	14-6
Using the View Palette to Place the Drawing Views	14-8
Generating the Three Standard Views	14-9
Generating Standard Views Using the Relative View Tool	14-10
Generating Standard Views Using the Predefined View Tool	14-12
Generating Derived Views	14-13
Generating Projected Views	14-14
Generating Section Views	14-15
Generating Broken-out Section Views	14-23
Generating Auxiliary Views	14-25
Generating Detail Views	14-26
Generating Crop Views	14-29
Generating Broken Views	14-29
Generating Alternate Position Views	14-31
Generating Drawing Views of the Exploded State of an Assembly	14-32
Working with Interactive Drafting in SolidWorks	14-33
Editing and Modifying Drawing Views	14-34
Changing the View Orientation	14-34
Changing the Scale of Drawing Views	14-34
Deleting Drawing Views	14-34
Rotating Drawing Views	14-34
Manipulating the Drawing Views	14-35
Modifying the Hatch Pattern in Section Views	14-35
Properties Rollout	14-35
Options Rollout	14-36
Tutorial 1	14-37
Tutorial 2	14-42
Self-Evaluation Test	14-47

Review Questions	14-48
Exercise 1	14-49

Chapter 15: Working with Drawing Views-II

Adding Annotations to Drawing Views	15-2
Generating Annotations Using the Model Items Tool	15-2
Adding Reference Annotations <i>Enhanced</i>	15-4
Aligning the Dimensions	15-19
Editing Annotations	15-19
Adding the Bill of Materials (BOM) to a Drawing	15-20
Table Template Rollout	15-20
Table Position Rollout	15-20
BOM Type Rollout	15-20
Configurations Rollout	15-22
Part Configuration Grouping Rollout	15-22
Keep Missing Item Rollout	15-22
Item Numbers Rollout	15-22
Border Rollout	15-22
Setting Anchor Point for the BOM	15-23
Linking Bill of Materials	15-23
Adding Balloons to the Drawing Views	15-23
Adding Balloons Using the AutoBalloon Tool	15-24
Creating Magnetic Lines	15-26
Adding New Sheets to the Drawing Views	15-27
Editing the Sheet Format	15-27
Creating User-Defined Sheet Formats	15-28
Tutorial 1	15-28
Tutorial 2	15-35
Self-Evaluation Test	15-39
Review Questions	15-40
Exercise 1	15-41

Chapter 16: Surface Modeling

Surface Modeling	16-2
Creating an Extruded Surface	16-2
Creating a Revolved Surface	16-3
Creating a Swept Surface	16-4
Creating a Lofted Surface	16-7
Creating a Boundary Surface	16-9
Creating a Planar Surface	16-13
Creating a Fill Surface	16-14
Creating a Radiated Surface	16-18
Offsetting Surfaces	16-19
Trimming Surfaces	16-20
Untrimming Surfaces	16-22

Extending Surfaces	16-25
Knitting Surfaces	16-27
Filleting Surfaces	16-28
Creating a Mid-Surface	16-29
Deleting Holes from Surfaces	16-30
Replacing Faces	16-31
Deleting Faces	16-32
Moving and Copying Surfaces	16-34
Mirroring Surface Bodies	16-34
Adding Thickness to Surface Bodies	16-34
Creating a Thicken Surface Cut	16-36
Creating a Surface Cut	16-37
Tutorial 1	16-37
Tutorial 2	16-47
Self-Evaluation Test	16-57
Review Questions	16-58
Exercise 1	16-59
Exercise 2	16-60

Chapter 17: Working with Blocks

Introduction to Blocks	17-2
Blocks Toolbar	17-2
Saving a Sketch as a Block in the Design Library	17-7
Creating Mechanisms by Using Blocks	17-7
Creating the Rack and Pinion Mechanism	17-8
Creating the Cam and Follower Mechanism	17-9
Applying Motion to Blocks	17-10
Creating Parts from Blocks	17-12
Selected Blocks	17-12
Block to Part Constraint	17-12
Tutorial 1	17-13
Tutorial 2	17-21
Self-Evaluation Test	17-28
Review Questions	17-28
Exercise 1	17-29

Chapter 18: Sheet Metal Design

Sheet Metal Design	18-2
Designing the Sheet Metal Components by Creating the Base Flange	18-2
Creating the Base Flange	18-3
Understanding the FeatureManager Design Tree of a Sheet Metal Component	18-6
Creating the Edge Flange	18-7
Creating Tabs	18-15
Creating the Sketched Bend	18-16

Creating the Miter Flange	18-18
Creating Closed Corners	18-20
Creating Hems	18-22
Creating the Jog Bend	18-24
Breaking the Corners	18-27
Creating the Swept Flange	18-28
Creating Cuts on the Planar Faces of the Sheet Metal Components	18-29
Creating Lofted Bends <i>Enhanced</i>	18-30
Creating a Flat Pattern View of the Sheet Metal Components	18-30
Creating Sheet Metal Components from a Flat Sheet	18-33
Creating a Sheet Metal Component from a Flat Part	18-34
Converting a Part or a Flat Part into Sheet Metal by Adding Bends	18-34
Adding Bends to the Flattened Sheet Metal Component	18-35
Unbending the Sheet Metal Part Using the No Bends Tool	18-36
Creating a Sheet Metal Component by Designing it as a Part	18-37
Types of Bends	18-37
Converting a Solid Body into a Sheet Metal Part	18-39
Designing a Sheet Metal Part from a Solid Shelled model	18-40
Ripping the Edges	18-41
Creating Cuts in Sheet Metal Components Across the Bends	18-42
Creating Cuts in a Sheet Metal Component Created from a Solid Model	18-42
Creating Cuts in a Sheet Metal Component Created Using the Base Flange	18-44
Creating Cylindrical and Conical Sheet Metal Components	18-45
Inserting Forming Tools	18-46
Creating Forming Tools	18-48
Generating the Drawing View of the Flat Pattern of the Sheet Metal Components	18-48
Tutorial 1	18-49
Tutorial 2	18-56
Self-Evaluation Test	18-65
Review Questions	18-66
Exercise 1	18-67

**Chapters available for
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Chapter 19: Equations, Configurations, and Library Features

Working with Equations <i>Enhanced</i>	19-2
Adding Global Variables	19-4
Suppressing and Unsuppressing Features	19-6
Adding Equations	19-7
Editing Equations	19-8
Suppressing and Unsuppressing Equations	19-8
Deleting Equations	19-9
Exporting/Importing Equations	19-9
Working with Configurations	19-9
Creating Configurations Manually	19-9

Editing the Features of a Part with Multiple Configurations	19-11
Creating Configurations by Using Design Tables	19-12
Changing the Suppression State by Using the Design Table	19-16
Editing the Design Table	19-19
Deleting the Design Table	19-20
Changing the Suppression State of a Component without Invoking the Design Table	19-20
Changing the Visibility of Components in Different Configurations of an Assembly	19-22
Library Features	19-22
Creating a Library Feature	19-22
Placing Library Features in a Part	19-23
Editing the Library Features	19-26
Dissolving the Library Features	19-26
Tutorial 1	19-26
Tutorial 2	19-30
Self-Evaluation Test	19-33
Review Questions	19-33
Exercise 1	19-34
Exercise 2	19-35
Exercise 3	19-35

Chapter 20: Motion Study

Introduction	20-2
Motion Study	20-2
Timeline	20-2
Timebar	20-2
Keypoint	20-2
MotionManager Design Tree	20-2
Toolbar	20-3
Tutorial 1	20-15
Tutorial 2	20-18
Self-Evaluation Test	20-20
Review Questions	20-21
Exercise 1	20-22

Student Projects	1
Index	I-1

Preface

SolidWorks 2014

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 requested 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, you can easily generate the 2D drawing views of the components. 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.

In addition to creating the solid models, assembly features, and drawing views, SolidWorks enables you to effectively and easily to create complex sheet metal components using a number of tools. In this edition, a new chapter has been added on Motion Study to check the motion of assemblies.

SolidWorks 2014 for Designers textbook has been written to help the users who are interested in learning 3D design. This textbook is written with the tutorial point of view and the learn-by-doing theme. Real-world mechanical engineering industry examples and tutorials have been used to ensure that the users can relate the knowledge of this textbook with the actual mechanical industry designs. The main features of the textbook are as follows:

- **Tutorial Approach**
The author has adopted the tutorial point-of-view and the learn-by-doing theme throughout the textbook. This approach guides the users through the process of creating the models in the tutorials.
- **Real-world Mechanical Engineering Projects as Tutorials**
The author has used the real-world mechanical engineering projects as tutorials in this

textbook so that the readers can correlate the tutorials with the real-time models in the mechanical engineering industry.

- **Coverage of Major SolidWorks Modes**

All major modes of SolidWorks are covered in this textbook. These include the **Part** mode, the **Assembly** mode, and the **Drawing** mode.

- **Tips and Notes**

Additional information related to various topics is provided to the users in the form of tips and notes.

- **Learning Objectives**

The first page of every chapter summarizes the topics that are covered in the chapter.

- **Self-Evaluation Test, Review Questions, and Exercises**

Each chapter ends with Self-Evaluation Test that enables the users to assess their knowledge of the chapter. The answers to the Self-Evaluation Test are given at the end of the chapter. Also, the Review Questions and Exercises are given at the end of each chapter, which can be used by the Instructors as test questions and exercises.

- **Heavily Illustrated Text**

The text in this textbook is heavily illustrated with the help of around 800 line diagrams and 900 screen captures.

Conventions used in this Textbook

Note



The author has provided additional information to the users about the topic being discussed in the form of Notes.

Tip



Additional information on techniques is provided in the form of Tips that will increase the efficiency of the users.

New



This icon indicates that the command or tool being discussed is new in SolidWorks 2014.

Enhanced



This icon indicates that the command or tool being discussed is enhanced in SolidWorks 2014.

Flyout

A flyout is the one in which a set of tools are grouped together. You can identify a flyout with a down arrow on it. A flyout is given a name based on the types of tools grouped in it. For example, **Line** flyout, **View Settings** flyout, **Fillet** flyout, and so on; refer to Figure 1.

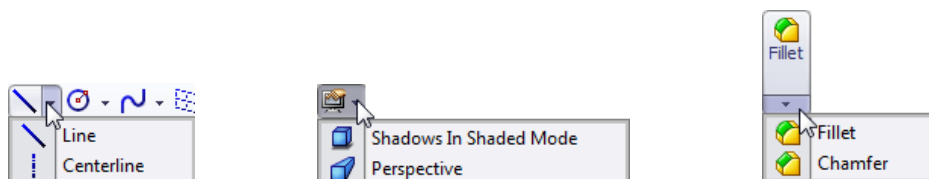


Figure 1 The **Line**, **View Settings**, and **Fillet** flyouts

Button

The items in a dialog box that has a 3D shape like a button is termed as **Button**. For example, **OK** button, **Cancel** button, **Apply** button, and so on.

In this textbook, the path to invoke a tool is given as:

CommandManager:	Features > Extruded Boss/Base
SolidWorks Menus:	Insert > Boss/Base > Extrude
Toolbar:	Features > Extruded Boss/Base

Free Companion Website

It has been our constant endeavor to provide you the best textbooks and services at affordable price. In this endeavor, we have come out with a Free Companion website that will facilitate the process of teaching and learning of SolidWorks 2014. If you purchase this textbook, you will get access to the files on the Companion website.

To access the files, you need to register by visiting the **Resources** section at www.cadcim.com. The following resources are available for the faculty and students in this website:

Faculty Resources

- **Technical Support**

You can get online technical support by contacting techsupport@cadcim.com.

- **Instructor Guide**

Solutions to all review questions and exercises in the textbook are provided in the Instructor guide to help the faculty members test the skills of the students.

- **PowerPoint Presentations**

The contents of the book are arranged in PowerPoint slides that can be used by the faculty for their lectures.

- **Part Files**

The part files used in illustration, examples, and exercises are available for free download.

Student Resources

- **Technical Support**

You can get online technical support by contacting *techsupport@cadcim.com*.

- **Part Files**

The part files used in illustrations and examples are available for free download.

- **Additional Students Projects**

Various projects are provided for the students to practice.

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