

# Autodesk® Inventor® 2024

A Tutorial Introduction

Includes video instruction



L. Scott Hansen, Ph.D.



Better Textbooks. Lower Prices.  
[www.SDCpublications.com](http://www.SDCpublications.com)



**ACCESS CODE**  
UNIQUE CODE INSIDE

Visit the following websites to learn more about this book:



# Table of Contents

<b>Chapter 1 Getting Started.....</b>	<b>1-1</b>
Create a simple sketch using the Sketch Panel .....	1-4
Dimension a sketch using the General Dimension command .....	1-8
Extrude a sketch in the 3D Model Panel using the Extrude command.....	1-19
Create a fillet in the 3D Model Panel using the Fillet command.....	1-20
Create a hole in the 3D Model Part Panel using the Extrude cut command.....	1-25
Create a counter bore in the 3D Model Panel using the Hole command.....	1-28
Chapter Problems.....	1-39
<b>Chapter 2 Learning More Basics.....</b>	<b>2-1</b>
Revolve a sketch in the 3D Model Panel using the Revolve command .....	2-3
Use the Revolve Cut command to create a groove .....	2-10
Create a hole in the 3D Model Panel using the Extrude command .....	2-20
Create a series of holes using the Circular Pattern command.....	2-39
Chapter Problems.....	2-43
<b>Chapter 3 Learning to Create a Detail Drawing.....</b>	<b>3-1</b>
Create an Orthographic view using the Drawing Views Panel.....	3-6
Create a Solid Model using the Edit Views command .....	3-14
Chapter Problems.....	3-17
<b>Chapter 4 Advanced Detail Drawing Procedures.....</b>	<b>4-1</b>
Create an Auxiliary View using the Drawing Views Panel.....	4-5
Create a Section View using the Drawing Views Panel .....	4-10
Create a broken view using the Break command.....	4-15
Dimension views using the Drawing Annotation Panel .....	4-18
Create Text using the Drawing Annotation Panel .....	4-20
Chapter Problems.....	4-25
<b>Chapter 5 Learning To Edit Existing Solid Models .....</b>	<b>5-1</b>
Edit the part using the Sketch Panel .....	5-6
Edit the part using the Extrude command.....	5-12
Edit the part using the Circular Pattern command .....	5-20
Edit the part using the Fillet command .....	5-23
Chapter Problems.....	5-28

<b>Chapter 6 Designing Part Models for Assembly .....</b>	<b>6-1</b>
Learn to use the YZ, XZ, and XZ Planes.....	6-3
Learn to use the Wireframe viewing command .....	6-5
Learn to project geometry to a new sketch .....	6-7
Learn to use the Shell command.....	6-12
<b>Chapter 7 Introduction To Assembly View Procedures .....</b>	<b>7-1</b>
Learn to import existing solid models into the Assemble Panel.....	7-3
Learn to constrain all parts in the Assemble Panel.....	7-9
Learn to edit/modify parts while in the Assemble Panel .....	7-31
Learn to assign colors to different parts in the Assemble Panel .....	7-41
Learn to drive constraints to simulate motion.....	7-45
Learn to create an .avi or .wmv file while in the Assemble Panel.....	7-49
Chapter Problems.....	7-53
<b>Chapter 8 Introduction To The Presentation Panel.....</b>	<b>8-1</b>
Learn to import existing assembly models into the Presentation Panel.....	8-9
Learn to Tweak Components in the Presentation Panel .....	8-11
Chapter Problems.....	8-17
<b>Chapter 9 Introduction to Advanced Commands .....</b>	<b>9-1</b>
Learn to create a sweep using the Sweep command.....	9-2
Learn to use the Rectangular Pattern command .....	9-8
Learn to create a loft using the Loft command .....	9-10
Learn to create a coil using the Coil command.....	9-21
Chapter Problems.....	9-24
<b>Chapter 10 Introduction to Creating Threads.....</b>	<b>10-1</b>
Learn to create a Polygon .....	10-2
Learn to create Threads.....	10-6
<b>Chapter 11 Advanced Work Plane Procedures .....</b>	<b>11-1</b>
Learn to create points on multiple sketches.....	11-5
Learn to use these points to create an offset work plane .....	11-8
Chapter Problems.....	11-14

<b>Chapter 12 Introduction to Stress Analysis .....</b>	<b>12-1</b>
Learn to create a simple part.....	12-2
Learn to apply material to a simple part .....	12-3
Learn to apply a fixture to a simple part .....	12-6
Learn to apply force to a simple part	12-7
Learn to perform a stress analysis on a simple part.....	12-8
Learn to interpret results of a stress analysis .....	12-8
Chapter Problems.....	12-11
<b>Chapter 13 Introduction to the Design Accelerator .....</b>	<b>13-1</b>
Learn to create a Disc Cam.....	13-10
Learn to edit a Disc Cam .....	13-13
Learn to animate the assembly.....	13-24
Chapter Problems.....	13-28
<b>Chapter 14 Introduction to Sheet Metal.....</b>	<b>14-1</b>
Learn to create a simple sketch.....	14-3
Learn to create a Face .....	14-4
Learn to create a Flange .....	14-5
Learn to create a sheet metal bend .....	14-6
Learn to create a Bend from the adjacent face.....	14-6
Learn to create an Angular Flange.....	14-7
Learn to create a Flat Pattern .....	14-10
Learn to create a Bend Order Annotation .....	14-11
Learn to create a 3 view drawing of a Flat Pattern .....	14-12
Learn to create a 3 view drawing of a folded part .....	14-15
Chapter Problems.....	14-20
<b>Chapter 15 Introduction to Weldment .....</b>	<b>15-1</b>
Learn to create a Weldment .....	15-6
Learn to create a Convex Weldment.....	15-11
Learn to create a Concave Weldment .....	15-13
Learn to create a Cosmetic Weldment.....	15-16
Learn to use the Weld Calculator.....	15-18
Learn to edit existing Weldments .....	15-20
<b>Chapter 16 Introduction to the Content Center .....</b>	<b>16-1</b>
Learn to Import/Place a Hex Bolt .....	16-2
Learn to edit a previously Imported/Placed Hex Bolt .....	16-7

<b>Chapter 17 Introduction to iLogic Components .....</b>	<b>17-1</b>
Learn to Edit iLogic Component Values .....	17-5
Learn to save an iLogic Component .....	17-7
<b>Chapter 18 Introduction to Spur Gear Design Using the Design Accelerator ...</b>	<b>18-1</b>
Learn to Create a Spur Gear Set Using the Spur Gears Component Generator. .	18-3
Learn to Edit Spur Gears.....	18-5
Learn to Perform Edits Using the Design Accelerator .....	18-8
Learn to Identify the Center to Center Distance of a Spur Gear Set.....	18-8
Learn to Animate a Spur Gear Set .....	18-11
<b>Chapter 19 Introduction to Shaft Design Using the Design Accelerator .....</b>	<b>19-1</b>
Learn to Use the Shaft Component Generator .....	19-3
Learn to Add new Shaft Sections.....	19-4
Learn to Unlock Dimensions .....	19-8
Learn to Create a Split Section .....	19-9
<b>Chapter 20 Introduction to Bearing Design Using the Design Accelerator .....</b>	<b>20-1</b>
Learn to Enter Values in the Bearing Generator Dialog Box .....	20-4
Learn to Populate the Bearing Generator Dialog Box .....	20-4
Learn to Place a Bearing in the Assembly Panel .....	20-6
<b>Chapter 21 Advanced Sheet Metal Design Procedures .....</b>	<b>21-1</b>
Learn to Create a Fold.....	21-4
Learn to Create a Hem .....	21-9
Learn to Create a Punch Tool .....	21-10
Learn to Edit a Punch Tool .....	21-18
Learn to Create a Contour Flange.....	21-23
Learn to Create a Contour Roll.....	21-28