

TABLE OF CONTENTS

Dedication	iii
Foreword	iv
Acknowledgements	v
About the Author	vi
Accessing Tutorial Files	vii
Free Teaching Resources for Faculty	viii
Accessing the Videos of the Tutorials in this Textbook	viii
Preface	ix
Table of Contents	xi

Chapter 1 - Introduction to Autodesk Navisworks

Autodesk Navisworks	1-2
Autodesk Navisworks Products	1-2
Autodesk Navisworks Simulate	1-2
Autodesk Navisworks Manage	1-3
Autodesk Navisworks Freedom	1-3
Autodesk Navisworks Interface	1-3
Autodesk Navisworks Interface Components	1-4
Autodesk Navisworks Workspaces	1-8
Navisworks Standard	1-9
Navisworks Extended	1-9
Safe Mode	1-9
Navisworks Minimal	1-9
Creating a User-Defined Workspace	1-10
Native File Support	1-10
Autodesk Navisworks NWC File Export Utility	1-12
Autodesk Navisworks File formats	1-12
NWC Files	1-12
NWF Files	1-13
NWD Files	1-13
Creating Federated Models in Autodesk Navisworks	1-13
Opening Files	1-14
Opening from Web Server	1-15
Appending Files	1-16
Merging Files	1-17
Modifying Units, Size, and Location of a File	1-17
Saving your Work	1-18
Save Tool	1-18
Save As Tool	1-19
Publish Tool	1-19
Auto-Save	1-22
Deleting Files from the Scene	1-23
Navigating through the Model	1-23

Changing the Render Style Options	1-24
Lighting Flyout	1-25
Render Mode Flyout	1-25
Surfaces	1-26
Lines	1-26
Points	1-26
Snap Points	1-26
Text	1-26
ViewCube	1-27
Hands-On Tutorial	1-27
Skill Evaluation	1-41
Class Test Questions	1-42

Chapter 2 - Selecting and Manipulating Objects in the Scene

Object Selection	2-2
Selection Resolution	2-2
Select Flyout	2-4
Select Same Flyout	2-5
Selection Tree	2-6
Controlling the Visibility of the Items	2-6
Hide	2-6
Require	2-7
Hide Unselected	2-7
Unhide All	2-8
Unrequire All	2-8
Item Tools	2-8
Transform Ribbon Panel	2-8
Appearance Ribbon Panel	2-10
Selection Sets and Search Sets	2-11
Selection Sets	2-11
Search Sets	2-12
Viewing Item Properties	2-15
Creating Properties Sets	2-16
Dynamically Displaying Item Properties on the Model	2-19
Selection Inspector	2-20
Appearance Profiler	2-21
Hands-On Tutorial	2-24
Skill Evaluation	2-53
Class Test Questions	2-54

Chapter 3 - Viewpoints, Animations, and Measurements

Viewpoints	3-2
Configuring Global Viewpoint Defaults before Creating Viewpoints	3-2
Creating Viewpoints	3-3
Editing a Viewpoint	3-4
Updating a Viewpoint	3-7
Realtime Navigation using the Walk Tool	3-8

Walk Tool	3-8
Adding Realism to the Navigation	3-8
Third Person	3-8
Gravity	3-11
Collision	3-11
Crouching	3-11
Creating Walkthrough Animations	3-12
Recording the Walk	3-12
Creating Viewpoint Animation	3-13
Playing the Animations	3-14
Exporting Animations	3-14
Exporting and Importing Viewpoints	3-15
Object Snapping	3-16
Measuring Objects	3-16
Point to Point Distance Measurements	3-17
Clearing Measurements	3-18
Point to Multiple Points Measurements	3-17
Point Line Measurements	3-20
Accumulated Distance Measurements	3-20
Angle Measurements	3-21
Area Measurements	3-21
Measuring Coordinates of a Single Point	3-22
Measuring Shortest Distance Between Two Objects	3-22
Transforming Objects	3-23
Converting Measurements to Markup	3-23
Locking Measurements	3-23
Hands-On Tutorial	3-25
Skill Evaluation	3-49
Class Test Questions	3-50

Chapter 4 - Reviewing and Sectioning the Design

Design Review in Autodesk Navisworks	4-2
Redline Markups	4-2
Comments	4-8
Tags	4-13
Sectioning the Model	4-14
Sectioning a Model Using a Single Section Plane	4-15
Sectioning a Model Using Multiple Section Planes	4-17
Sectioning a Model using Linked Section Planes	4-18
Sectioning a Model using a Section Box	4-19
Sectioning a Model using Fixed Grids in Autodesk Revit Models	4-21
Saving a Sectioned View	4-21
Exporting a Reconstructed NWD File	4-22
Hands-On Tutorial	4-23
Skill Evaluation	4-47
Class Test Questions	4-48

Chapter 5 - Autodesk Navisworks Productivity Tools

Controlling the visibility of Grids and Levels in an Autodesk Revit File	5-2
Show Grid	5-2
Active Grid List	5-3
Display Level List	5-3
Changing the Grids and Levels Settings	5-3
Linking Files and URLs to the Items in the Model	5-4
Procedure for Adding Links to the Items in the Scene	5-5
Turning On the Visibility of the Links in the Scene	5-7
Controlling the Global Display of Links	5-7
Editing the Links Assigned to the Items	5-8
Following the Links Assigned to the Items	5-9
Linking External Databases to The Autodesk Navisworks Items	5-9
Getting a 64-BIT Computer Ready to Use DataTools	5-10
Linking Database Properties	5-10
SQL Query Strings	5-13
Splitting the Autodesk Navisworks View	5-14
Working with the Full Screen Display	5-16
Working with the Head-Up Display	5-16
Hands-On Tutorial	5-17
Skill Evaluation	5-33
Class Test Questions	5-34

Chapter 6 - Working with the Clash Detective Module

The Clash Detective Module	6-2
Tests Panel	6-2
Rules Tab	6-5
Select Tab	6-5
Results Tab	6-8
Report Tab	6-13
Procedures for Performing Various Clash Test Related Activities	6-16
Procedure for Performing Hard Clash Tests	6-16
Procedure for Interrogating the Clash Results	6-16
Procedure for Writing the Clash Report	6-17
Procedure for Resolving the Clashes Using the SwitchBack Functionality	6-18
Procedure for Exporting and Importing Clash Tests Based on Search Sets	6-19
Procedure for Grouping Clashes	6-19
Hands-On Tutorial	6-22
Skill Evaluation	6-59
Class Test Questions	6-60

Index	I-1
Answers to Skill Evaluation	A-1