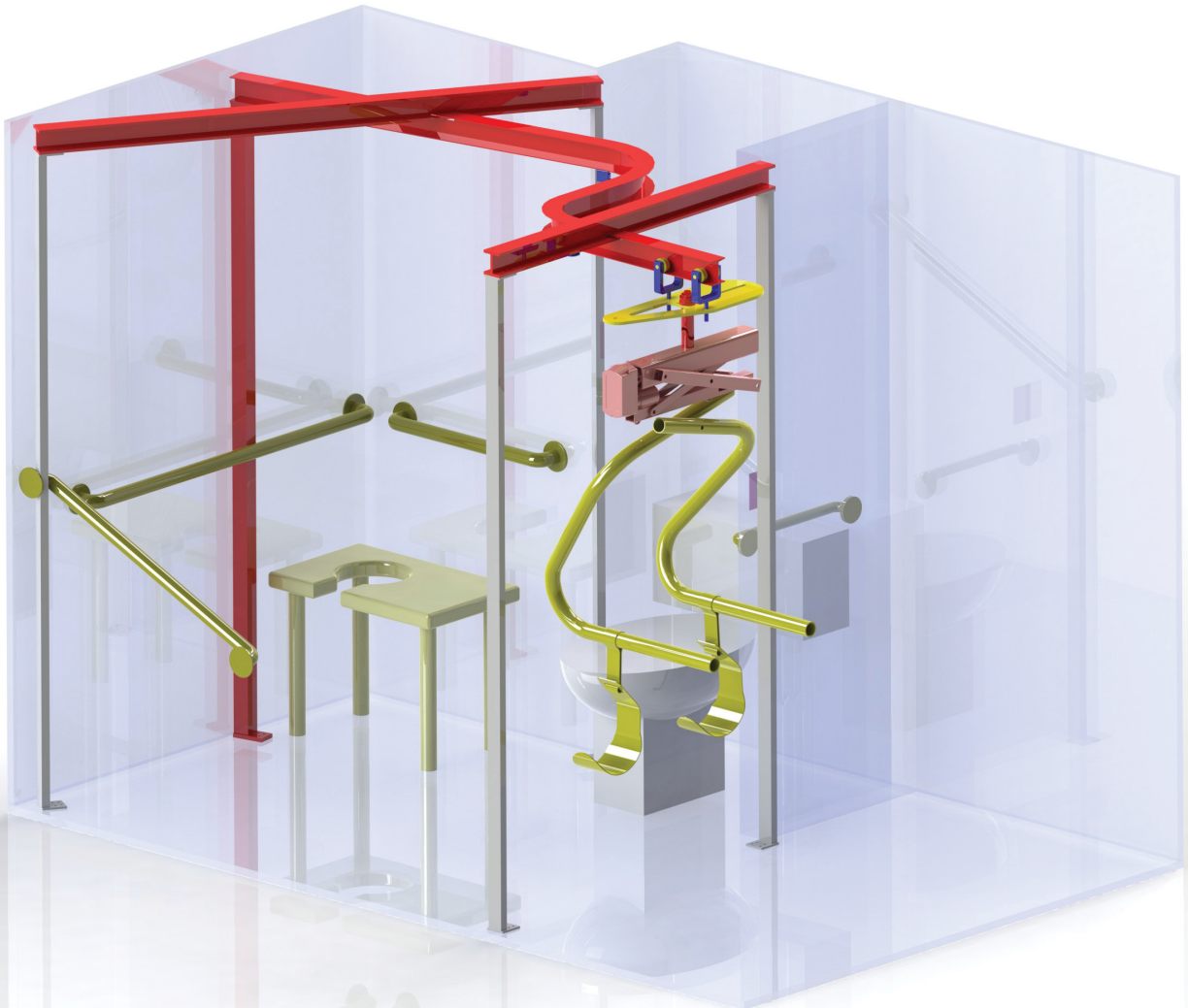
Motion Simulation and Mechanism Design with SolidWorks® Motion 2011

Kuang-Hua Chang Ph. D.



SDC PUBLICATIONS
Schroff Development Corporation

Better Textbooks. Lower Prices.
www.SDCpublications.com

Visit the following websites to learn more about this book:

Table of Contents

Preface i

About the Author iii

About the Cover Page iv

Table of Contents v

Lesson 1: Introduction to *SolidWorks Motion*

1.1 Overview of the Lesson 1-1
1.2 What is *SolidWorks Motion*? 1-1
1.3 Mechanism Design and Motion Analysis 1-3
1.4 *SolidWorks Motion* Capabilities 1-5
1.5 Open Lesson 1 Model 1-15
1.6 Motion Examples 1-15

Lesson 2: Animations and Basic Motion—A Single Piston Engine Example

2.1 Overview of the Lesson 2-1
2.2 The Single Piston Engine Example 2-1
2.3 Using *SolidWorks Motion* 2-2
Exercises 2-7

Lesson 3: A Ball Throwing Example

3.1 Overview of the Lesson 3-1
3.2 The Ball Throwing Example 3-1
3.3 Using *SolidWorks Motion* 3-3
3.4 Result Verifications 3-8
Exercises 3-11

Lesson 4: A Simple Pendulum

4.1 Overview of the Lesson 4-1
4.2 The Simple Pendulum Example 4-1
4.3 Using *SolidWorks Motion* 4-2
4.4 Result Verifications 4-5
Exercises 4-9

Lesson 5: A Spring Mass System

5.1 Overview of the Lesson 5-1
5.2 The Spring-Mass System 5-1
5.3 Using *SolidWorks Motion* 5-3
5.4 Result Verifications 5-9
Exercises 5-13

Lesson 6: A Slider-Crank Mechanism

6.1 Overview of the Lesson 6-1
6.2 The Slider-Crank Example 6-1
6.3 Using *SolidWorks Motion* 6-4
6.4 Result Verifications 6-11
Exercises 6-16

Lesson 7: A Rail-Carriage Example

7.1 Overview of the Lesson 7-1
7.2 The Rail-Carriage Example 7-2
7.3 Using *SolidWorks Motion* 7-4
Exercises 7-9

Lesson 8: A Compound Spur Gear Train

8.1 Overview of the Lesson 8-1
8.2 The Gear Train Example 8-1
8.3 Using *SolidWorks Motion* 8-5
Exercises 8-9

Lesson 9: Cam and Follower

9.1 Overview of the Lesson 9-1
9.2 The Cam and Follower Example 9-1
9.3 Using *SolidWorks Motion* 9-5
Exercises 9-9

Appendix A: Defining Joints A-1

Appendix B: The Unit Systems B-1

Appendix C: Importing *Pro/ENGINEER* Parts and Assemblies C-1