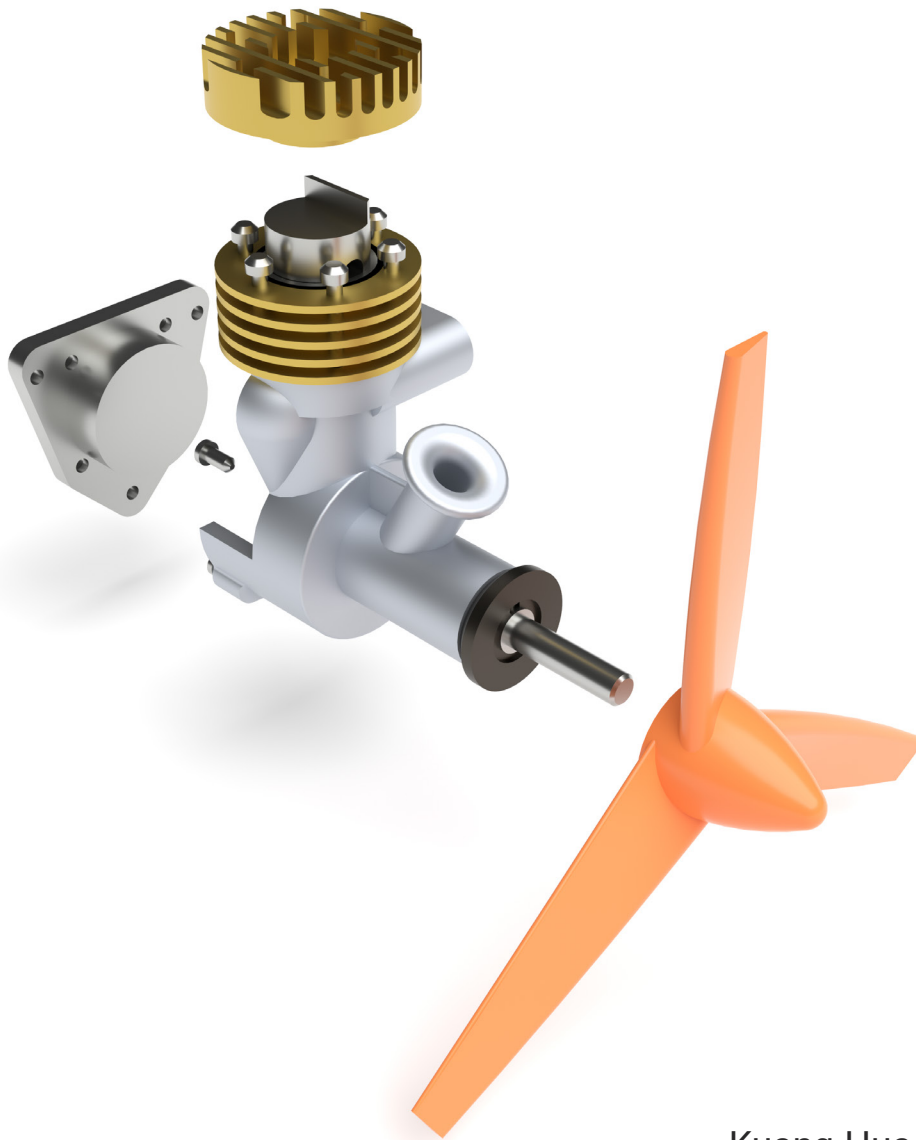


Mechanism Design and Analysis

Using PTC® Creo® Mechanism 11.0



Kuang-Hua Chang Ph.D.

Visit the following websites to learn more about this book:



[amazon.com](https://www.amazon.com)

[Google books](https://books.google.com)

[BARNES & NOBLE](https://www.barnesandnoble.com)

Table of Contents

Preface	i
Acknowledgments	iii
Table of Contents	iv

Lesson 1: Introduction to *Mechanism*

1.1 Overview of the Lesson.....	1-1
1.2 What is <i>Mechanism</i> ?	1-1
1.3 Mechanism and Motion Analysis.....	1-3
1.4 <i>Mechanism</i> Capabilities	1-5
1.5 Open Lesson 1 Model.....	1-13
1.6 Motion Examples	1-14

Lesson 2: A Ball Throwing Example

2.1 Overview of the Lesson.....	2-1
2.2 The Ball Throwing Example	2-1
2.3 Using <i>Mechanism</i>	2-3
2.4 Result Verifications.....	2-15
Exercises	2-17

Lesson 3: A Spring-Mass System

3.1 Overview of the Lesson.....	3-1
3.2 The Spring-Mass System.....	3-1
3.3 Using <i>Mechanism</i>	3-3
3.4 Result Verifications.....	3-11
Exercises	3-15

Lesson 4: A Simple Pendulum

4.1 Overview of the Lesson.....	4-1
4.2 The Simple Pendulum Example	4-1
4.3 Using <i>Mechanism</i>	4-3
4.4 Result Verifications.....	4-10
Exercises	4-14

Lesson 5: A Slider-Crank Mechanism

5.1 Overview of the Lesson.....	5-1
5.2 The Slider-Crank Example.....	5-1

5.3	Using <i>Mechanism</i>	5-4
5.4	Result Verifications	5-17
	Exercises	5-22

Lesson 6: A Compound Spur Gear Train

6.1	Overview of the Lesson.....	6-1
6.2	The Gear Train Example	6-2
6.3	Using <i>Mechanism</i>	6-4
	Exercises	6-15

Lesson 7: Planetary Gear Train Systems

7.1	Overview of the Lesson.....	7-1
7.2	The Planetary Gear Train Examples.....	7-2
7.3	Using <i>Mechanism</i>	7-5
	Exercises	7-17

Lesson 8: Cam and Follower

8.1	Overview of the Lesson.....	8-1
8.2	The Cam and Follower Example.....	8-1
8.3	Using <i>Mechanism</i>	8-4
	Exercises	8-13

Lesson 9: Assistive Device for Wheelchair Soccer Game

9.1	Overview of the Lesson.....	9-1
9.2	The Assistive Device.....	9-1
9.3	Using <i>Mechanism</i>	9-4
9.4	Result Discussion	9-9

Lesson 10: Kinematic Analysis for a Racecar Suspension

10.1	Overview of the Lesson.....	10-1
10.2	The Quarter Suspension	10-2
10.3	Using <i>Mechanism</i>	10-5
10.4	Full-Vehicle Dynamic Simulation.....	10-12

Appendix A: Defining Joints	A-1
--	-----

Appendix B: Defining Measures	B-1
--	-----

Appendix C: The Default Unit System	C-1
--	-----

Appendix D: Functions	D-1
------------------------------------	-----