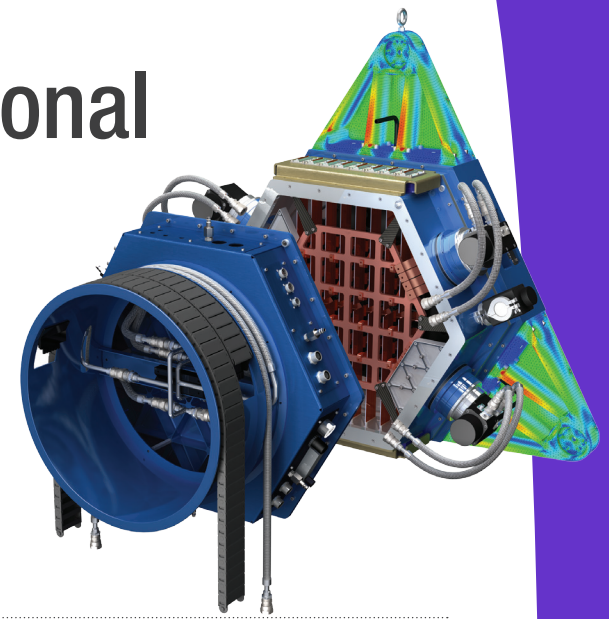


# SolidWorks Simulation Professional 2012 Training Course



**Course Outline**    Duration: 2 days • Prerequisites: SolidWorks Essentials and SolidWorks Simulation

- LESSON 1** Frequency Analysis of Parts
- LESSON 2** Frequency Analysis of Assemblies
- LESSON 3** Buckling Analysis
- LESSON 4** Thermal Analysis Objectives
- LESSON 5** Thermal Analysis with Radiation
- LESSON 6** Advanced Thermal Stress, 2D Simplification

- LESSON 7** Fatigue Analysis
- LESSON 8** Advanced Fatigue Analysis
- LESSON 9** Drop Test Analysis
- LESSON 10** Optimization Analysis
- LESSON 11** Pressure Vessel Analysis

## Training Content

### Introduction

- About This Course
- What is SolidWorks Simulation?
- Limitations of SolidWorks Simulation Professional

### LESSON 1

#### Frequency Analysis of Parts

- Objectives
- Modal Analysis Basics
- Case Study: The Tuning Fork
- Frequency Analysis With Supports
- Frequency Analysis Without Supports
- Frequency Analysis with Load

### LESSON 2

#### Frequency Analysis of Assemblies

- Objectives
- Case Study: The Engine Mount
- All Bonded Contact Conditions
- Bonded and Free Contact Conditions

### LESSON 3

#### Buckling Analysis

- Objectives
- Buckling Analysis
- Case Study: Partial Separator

### LESSON 4

#### Thermal Analysis Objectives

- Thermal Analysis Basics
- Case Study: Microchip Assembly
- Steady-State Thermal Analysis
- Transient Thermal Analysis
- Transient Analysis with Time Varying Load
- Transient Thermal Analysis using a Thermostat

### LESSON 5

#### Thermal Analysis with Radiation

- Case Study: Spot Light Assembly
- Project Description
- Steady State Analysis
- Full Radiation Conditions

### LESSON 6

#### Advanced Thermal Stress, 2D Simplification

- Objectives
- 2D Simulations - plane stress, plane strain, axisymmetry
- Thermal Stress Analysis
- Case Study: Thermal Expansion Joint
- Thermal Analysis
- Thermal Stress Analysis

### LESSON 7

#### Fatigue Analysis

- Fatigue
- Stress-life (S-N) Based Fatigue
- Case Study: Pressure Vessel
- Thermal Stress Study
- Fatigue Terminology
- Fatigue Study
- Fatigue study with Dead Load

### LESSON 8

#### Advanced Fatigue Analysis

- Objectives
- Case Study: Suspension
- Fatigue Study

### LESSON 9

#### Drop Test Analysis

- Objectives
- Drop Test Analysis
- Case Study: Camera
- Rigid Floor Drop Test
- Elastic Floor Drop Test
- Elasto-Plastic Material Model
- Drop Test with Contact

### LESSON 10

#### Optimization Analysis

- Objectives
- Optimization Analysis
- Case Study: Press Frame
- Static and Frequency Analyses
- Optimization Analysis
- Design Study

### LESSON 11

#### Pressure Vessel Analysis

- Objectives
- Case Study: Pressure Vessel
- Pressure Vessel Analysis
- Manhole Nozzle Flange and Cover

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