SolidWorks Simulation Professional

Length: 1 day **Prerequisites**: SolidWorks Simulation Basic course

Description: This course is designed to make SolidWorks Simulation users productive with the SolidWorks Simulation Professional extension. This 1 day course will provide an in-depth coverage on the advanced topics in Finite Element Analysis (FEA) including heat transfer analysis, frequency analysis, fatigue, stability analyisis based on the linear buckling concepts, and pressure vessel modulus. Example or parts and assemblies including those with various gap.contact conditions are reviewed.

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: Particle 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 Analysis

- Objectives
- Thermal Stress Analysis
- Case Study: Microchip Testing Assembly
- 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