

SOLIDWORKS Simulation Professional Course

LENGTH: 1 DAY

Prerequisites: Students must have attended the introductory SOLIDWORKS Simulation course (3 days) or must have working knowledge of the SOLIDWORKS Simulation software. Knowledge of SOLIDWORKS and basic mechanical engineering concepts is recommended.

Description: This course is designed to make users productive with the SOLIDWORKS Simulation Professional extension. This 2 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 analysis based on the linear buckling concepts, 2D simulations (plane stress, strain and axisymmetry) and pressure vessel modulus. Example or parts and assemblies including those with various gap/contact conditions are reviewed.

Who Should Attend: All SOLIDWORKS Simulation users wishing to create better designs in SOLIDWORKS by performing analysis and evaluating the behavior of their parts and assemblies under actual service conditions.



Topics covered in this course are:

Introduction

- About This Course
- More SOLIDWORKS Training Resources
- What is SOLIDWORKS Simulation?
- Limitations of SOLIDWORKS Simulation Professional

Lesson 1: Frequency Analysis of Parts

- 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

- Case Study: The Engine Mount
- All Bonded Contact Conditions
- Bonded and Allow Penetration Contacts

Lesson 3: Buckling Analysis

- Buckling Analysis
- Case Study: Particle Separator

Lesson 4: Load Cases

- Load Cases
- Case Study: Scaffolding

Lesson 5: Submodeling

- Submodeling
- Case Study: Scaffolding
- Part 1: Parent Study
- Part 2: Child Study

Lesson 6: Topology Analysis

- Topology Analysis
- Case Study: Rear Bike Shock Link
- Goals and Constraints
- Manufacturing Controls
- Mesh Effects
- Load Cases in Topology Studies
- Export Smoothed Mesh

Lesson 7: Thermal Analysis

- 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 8: Thermal Analysis with Radiation

- Case Study: Spot Light Assembly
- Steady State Analysis

Lesson 9: Advanced Thermal Stress2D Simplification

- Thermal Stress Analysis
- Case Study: Metal Expansion Joint
- Thermal Analysis
- Thermal Stress Analysis
- 3D model



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Training Registration

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SOLIDWORKS Simulation Professional Course

(Continued)

LENGTH: 2 DAYS

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Lesson 10: Fatigue Analysis

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

Lesson 11: Variable Amplitude Fatigue

- Case Study: Suspension
- Fatigue Study

Lesson 12: Drop Test Analysis

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

Lesson 13: Optimization Analysis

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

Lesson 14: Pressure Vessel Analysis

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



Training Registration

View our upcoming training schedule and training locations.

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