SOLIDWORKS Simulation Premium: Nonlinear

OVERVIEW

CLASSROOM LENGTH: 2 days / **INSTRUCTOR-LED ONLINE LENGTH:** 3 days

PREREQUISITES: Must have attended the basic SOLIDWORKS Simulation class or have similar experience with SOLIDWORKS and a working knowledge of finite elements and of basic mechanical principles.

DESCRIPTION: This class will raise your SOLIDWORKS Simulation FEA skills to the next level. It offers hands-on experience for the SOLIDWORKS Simulation Premium nonlinear module. It provides an overview on a wide range of nonlinear structural/mechanical analysis topics. You will learn how to deal with models that exhibit large displacements and/or yielding, discuss and practice the use of many material models available in SOLIDWORKS Simulation and how to drive a non-linear analysis to successful completion.

LESSON 1:
SOLIDWORKS BASICS
- WCase Study: Hose Clamp
- Linear Static Analysis
- Nonlinear Static Study
- Linear Static Study (Large Displacement)

LESSON 2:
INTRODUCTION TO SKETCHING
- Case Study: Trampoline
- Linear Analysis
- Nonlinear Analysis - Force Control
- Nonlinear Analysis - Displacement Control

LESSON 3:
NONLINEAR STATIC BUCKLING ANALYSIS
- Case Study: Cylindrical Shell
- Linear Buckling
- Linear Static Study
- Nonlinear Symmetrical Buckling
- Nonlinear Asymmetrical Buckling

LESSON 4:
PLASTIC DEFORMATION
- Case Study: Paper Clip
- Linear Elastic
- Nonlinear - von Mises
- Nonlinear - Tresca's

LESSON 5:
HARDENING RULES
- Case Study: Crank Arm
- Isotropic Hardening
- Kinematic Hardening

LESSON 6:
ANALYSIS OF ELASTOMERS
- Case Study: Rubber Pipe
- Two Constant Mooney-Rivlin (1 Material Curve)
- 2 Constant Mooney-Rivlin (2 Material Curves)
- 2 Constant Mooney-Rivlin (3 Material Curves)
- 6 Constant Mooney-Rivlin (3 Material Curves)

LESSON 7:
NONLINEAR CONTACT ANALYSIS
- Case Study: Rubber Tube

LESSON 8:
METAL FORMING
- Bending
- Case Study: Sheet Bending

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