

SOLIDWORKS Simulation Premium: Nonlinear Course

LENGTH: 2 DAYS

Prerequisites: Must have attended the basic SOLIDWORKS Simulation class, or must have an experience with SOLIDWORKS + working basic 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 on the use of SOLIDWORKS Simulation Premium Nonlinear module. The 2-day course 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, most importantly, how to drive a non-linear analysis to successful completion.

Who Should Attend: Designed for users who would like to become productive fast, the SOLIDWORKS Simulation Premium: Nonlinear course offers hands-on experience on the use of SOLIDWORKS Simulation nonlinear module. The 2-day course provides an overview on a wide range of nonlinear structural/mechanical analysis topics.



Topics covered in this course are:

Geometric Nonlinearities

- Large displacements problems
- Large strain formulation

Material Nonlinearities

- Nonlinear elasticity
- Hyperelasticity (Mooney-Rivlin, Ogden)
- Plasticity (von Mises, isotropic/kinematic/mixed hardening rules)
- Temperature dependent material properties
- Visco-elasticity and creep

Contact (Boundary) Nonlinearities

- 3D nonlinear gap/contact analysis (with or without material nonlinearities)

Numerical Procedures

- Solution control techniques (force, displacement, and Arc-Length controls)
- Equilibrium Iterations schemes (Newton-Raphson, modified Newton-Raphson)
- Termination schemes (convergence and divergence criteria)

Special Topics

- Adaptive automatic stepping algorithm
- Prescribed non-zero displacements associated with time curves
- Deformation dependent loading
- Analysis stabilization techniques

Viewing the Results

- Deflected shape plots
- Displacement and stress color filled contour plots
- Animation of deflected shape, displacement, and stress contour plots
- X-Y plots for response quantities
- Isoplanes and sectioning



Training Registration

View our upcoming training schedule and training locations.

[Training Calendar](#)



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Training Registration

www.alignex.com/training-calendar