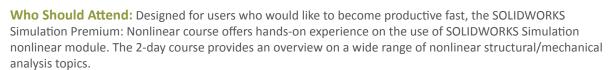
## **SOLIDWORKS Simulation Premium:** Nonlinear Course

## **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.



controls)

**Numerical Procedures** 

Newton-Raphson)

divergence criteria)

Solution control techniques (force,

displacement, and Arc-Length

Equilibrium Iterations schemes

(Newton-Raphson, modified

Termination schemes (convergence and



#### **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)

# **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** 



## Alignex, Inc.

Toll Free: (866) 378-6829 Email: info@alignex.com

## **Training Registration**

www.alignex.com/training-calendar