DS SOLIDWORKS

invenio

Training
SolidWorks Simulation

Description	This course is designed to make SOLIDWORKS users productive more quickly with the SOLIDWORKS Simulation Bundle. This course will provide an in-depth coverage on the basics of Finite Element Analysis (FEA), covering the entire analysis process from meshing to evaluation of results for parts and assemblies. The class discusses linear stress analysis, gap/contact analysis, and best practices.
Prerequisites	SolidWorks Essentials course and basic mechanical engineering concepts is recommended.
Duration	3 Days

Course Outline

Introduction	About This Course
Lesson 1	**The Analysis Process** • The Analysis Process • SOLIDWORKS Simulation Options • Preprocessing • Meshing • Processing • Postprocessing • Multiple Studies
Lesson 2	**Mesh Controls, Stress Concentrations and Boundary Conditions** • Mesh Control • Project Description • Understanding the Effect of Boundary Conditions
Lesson 3	**Assembly Analysis with Interactions** • Interaction Analysis • Contact or Bonded Interaction • Pliers with Local Interaction
Lesson 4	**Symmetrical and Free Self-Equilibrated Assemblies** • Shrink Fit Parts • Project Description • Analysis with Soft Springs
Lesson 5	**Assembly Analysis with Connectors and Mesh Refinement** • Problem Statement • Remote Load/Mass • Connectors • Mesh Control in an Assembly • Mesh Plots

Lesson 6	**Bonded Mesh Options** • Bonded Mesh Options • Centrifugal Force • Cyclical Symmetry • Bonding Options • Bonding Formulation
Lesson 7	**Analysis of Thin Components** • Thin Components • Mesh with Solid Elements • Refined Solid Mesh • Solid vs. Shell • Creating Shell Elements • Shell Elements - Mid-plane Surface • Results Comparison
Lesson 8	**Mixed Meshing Shells and Solids** • Mixed Meshing Solids and Shells • Simulation Evaluator
Lesson 9	**Beam Elements – Analysis of a Conveyor Frame** • Project Description
Lesson 10	**Mixed Meshing Solids, Beams and Shells** • Mixed Meshing • Beam Imprint
Lesson 11	**Design Study** • Design Study • Multiple Load Cases • Geometry Modification
Lesson 12	**Thermal Stress Analysis** • Thermal Stress Analysis • Saving Model in its Deformed Shape
Lesson 13	**Adaptive Meshing** • Adaptive Meshing • h-Adaptivity • p-Adaptivity • h vs p Elements
Lesson 14	**Large Displacement Analysis** • Small vs. Large Displacement Analysis • Small Displacement Linear Analysis • Large Displacement Nonlinear Analysis