

SOLIDWORKS SIMULATION- TRAINING OVERVIEW

PRODUCT LINE

SolidWorks Simulation (included in SolidWorks Premium)

SolidWorks Simulation Professional

SolidWorks Simulation Premium

SolidWorks Motion (included in SolidWorks Premium)

SolidWorks Flow Simulation

TRAINING BREAKDOWN

SolidWorks Simulation – 3 days

Introduction to FEA

Lesson 1: The Analysis Process

Lesson 2: Mesh Controls, Stress Concentrations and Boundary Conditions

Lesson 3: Assembly Analysis with Contacts

Lesson 4: Symmetrical and Free Self-Equilibrating Assemblies

Lesson 5: Assembly Analysis with Connectors

Lesson 6: Compatible/Incompatible Meshes

Lesson 7: Assembly Analysis Mesh Refinement

Lesson 8: Analysis of Thin Components

Lesson 9: Mixed Meshing Shells & Solids

Lesson 10: Mixed Meshing Solids, Beams & Shells

Lesson 11: Design Scenarios

Lesson 12: Thermal Stress Analysis

Lesson 13: Adaptive Meshing

Lesson 14: Large Displacement Analysis

Appendix A: Meshing, Solvers, and Tips & Tricks

Appendix B: Customer Help and Assistance

SolidWorks Simulation Professional – 1 day

Lesson 1: Frequency Analysis of Parts

Lesson 2: Frequency Analysis of Assemblies

Lesson 3: Buckling Analysis

Lesson 4: Thermal Analysis Objectives

Lesson 5: Thermal Analysis with Radiation

Lesson 6: Advanced Thermal Stress Analysis

Lesson 8: Advanced Fatigue Analysis

Lesson 9: Drop Test Analysis

Lesson 10: Optimization Analysis

Lesson 11: Pressure Vessel Analysis

Simulation Premium Non Linear – 2 days

Contact (Boundary) Nonlinearities

Material Nonlinearities

Geometric Nonlinearities

Numerical Procedures

Viewing the Results

Simulation Premium Dynamics - 2 days

Modal time history analysis

Steady-state harmonic analysis

Random vibration

Damping

Excitation

SolidWorks Motion – 2 days

Action only forces and moments

Action/Reaction forces and moments

Translatory and torsional springs

Translatory and torsional dampers

3D Contacts

Impact forces

Flexible connectors - Bushings

Kinematic and Dynamic analysis

Redundancies

Export of results to SolidWorks Simulation

SolidWorks Flow Simulation - 2 days

Basics of Fluid Flow

Meshing concerns

Modelling concerns

Applying boundary conditions

Steady State

Transient

Conjugate heat transfer

Compressible and incompressible

Newtonian / non-Newtonian fluid

Fan Curves

Particle trajectories

Supersonic flows

Cavitation

Relative humidity

Conjugate heat transfer

Manual mesh control

Manual convergence

Export of results to SolidWorks Simulation modulus