SOLIDWORKS FLOW SIMULATION

Pre-Requisites: Knowledge of SOLIDWORKS and basic mechanical engineering concepts is recommended.

Daily Schedule: 8:30 a.m. - 4:30 p.m.

Length: 2 Days

This three-day, hands-on training program provides an in-depth session on the basics of turbulent fluid flow analysis, in addition to covering meshing concerns, modeling concerns, analysis, post-processing, available options, and preferences.

Introduction: Fundamentals of Flow Simulation

» About This Course

Lesson 1: Creating a SOLIDWORKS Flow Simulation Project

» Objectives
» Case Study: Manifold Assembly
» Model Preparation
» Post-processing

Lesson 2: Meshing

» Objectives
» Case Study: Chemistry Hood
» Computational Mesh
» Basic Mesh
» Initial Mesh
» Geometry Resolution
» Optimize Thin Wall Resolution
» Result Resolution/Level of Initial Mesh
» Control Planes

Lesson 3: Thermal Analysis

» Objectives
» Case Study: Electronics Enclosure
» Fans
» Perforated Plates

Lesson 4: External Transient Analysis

» Objectives
» Case Study: Flow Around a Cylinder
» Reynolds Number
» External Flow
» Transient Analysis
» Turbulence Intensity
» Solution Adaptive Mesh Refinement
» Two Dimensional Flow
» Computational Domain
» Calculation Control Options
» Time Animation

Lesson 5: Conjugate Heat Transfer

» Objectives
» Case Study: Heated Cold Plate
» Conjugate Heat Transfer
» Real Gases
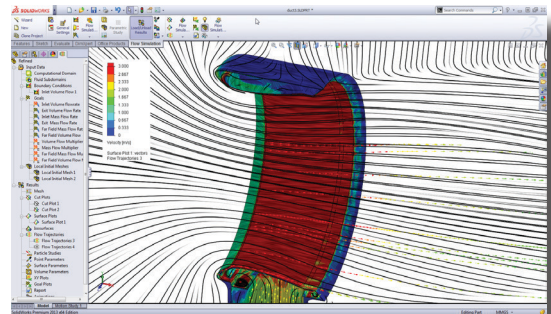
SOLIDWORKS FLOW SIMULATION

Lesson 6: EFD Zooming

- » Objectives
- » Case Study: Electronics Enclosure
- » EFD Zooming

Lesson 7: Porous Media

- » Objectives
- » Case Study: Catalytic Converter
- » Porous Media
- » Design Modification

Lesson 8: Rotating Reference Frames

- » Objectives
- » Rotating Reference Frame
- » Case Study: Fan Assembly

Lesson 9: Parametric Study

- » Objectives
- » Case Study: Piston Valve
- » Parametric Analysis
- » Goal Optimization
- » Design Scenario

Lesson 10: Cavitation

- » Objectives
- » Case Study: Cone Valve
- » Cavitation

Lesson 11: Relative Humidity

- » Objectives
- » Relative Humidity
- » Case Study: Cook House

Lesson 12: Particle Trajectory

- » Objectives
- » Case Study: Hurricane Generator
- » Particle Trajectories

Lesson 13: Supersonic Flow

- » Objectives
- » Supersonic Flow
- » Case Study: Conical Body
- » Drag Coefficient
- » Shock Waves

Lesson 14: FEA Load Transfer

- » Objectives
- » Case Study: Billboard