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
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