

**SolidWorks Simulation Professional – 1\* day**

Description	This 1* day course will provide an in-depth coverage on the advanced topics in Finite Element Analysis (FEA) including heat transfer analysis, frequency analysis, fatigue, stability analysis based on the linear buckling concepts, 2D simulations (plane stress, strain and axis symmetry) and pressure vessel modulus. Example of parts and assemblies including those with various gap/contact conditions are reviewed.
Prerequisites	SolidWorks Simulation Essentials

<p><b>Introduction</b>                  What is SolidWorks Simulation?                  Limitations of SolidWorks Simulation                  Professional</p> <p><b>Lesson 1: Frequency Analysis of Parts</b>                  Modal Analysis Basics                  Case Study: The Tuning Fork                  Frequency Analysis With Supports                  Frequency Analysis Without Supports                  Frequency Analysis with Load</p> <p><b>Lesson 2: Frequency Analysis of Assemblies</b>                  Case Study: The Engine Mount                  All Bonded Contact Conditions                  Bonded and Allow Penetration Contacts</p> <p><b>Lesson 3: Buckling Analysis</b>                  Buckling Analysis                  Case Study: Particle Separator</p> <p><b>Lesson 4: Load Cases</b>                  Load Cases – multiple load combinations                  Case Study: Scaffolding</p> <p><b>Lesson 5: Submodeling</b>                  Submodeling – Analyze structural details                  Case Study: Scaffolding                  Part 1: Parent Study                  Part 2: Child Study</p>	<p><b>Lesson 6: Topology Analysis</b>                  Topology Analysis                  Case Study: Rear Bike Shock Link                  Project Description                  Goals and Constraints                  Manufacturing Controls                  Mesh Effects                  Load Cases in Topology Studies                  Export Smoothed Mesh</p> <p><b>Lesson 7: Thermal Analysis</b>                  Thermal Analysis Basics                  Case Study: Microchip Assembly                  Steady-State Thermal Analysis                  Transient Thermal Analysis                  Transient Analysis with Time Varying Load                  Transient Thermal Analysis using a Thermostat</p> <p><b>Lesson 8: Thermal Analysis with Radiation</b>                  Case Study: Spot Light Assembly                  Project Description                  Steady State Analysis</p> <p><b>Lesson 9: Advanced Thermal Stress, 2D Simplification</b>                  Thermal Stress Analysis (Introduction)                  Case Study: Thermal Expansion Joint                  Project Description                  Thermal Analysis                  Thermal Stress Analysis                  3D Model</p>	<p><b>Lesson 10: Fatigue Analysis</b>                  Fatigue                  Stress-life (S-N) Based Fatigue                  Case Study: Pressure Vessel                  Thermal Study                  Thermal Stress Study                  Fatigue Terminology                  Fatigue Study                  Fatigue Study with Dead Load</p> <p><b>Lesson 11: Variable Amplitude Fatigue</b>                  Case Study: Suspension                  Project Description                  Fatigue Study</p> <p><b>Lesson 12: Drop Test Analysis</b>                  Drop Test Analysis                  Case Study: Camera                  Project Description                  Rigid Floor Drop Test                  Elastic Floor, Elasto-Plastic Material                  Elasto-Plastic Material Model                  Drop Test with Contact</p> <p><b>Lesson 13: Optimization Analysis</b>                  Optimization Analysis                  Case Study: Press Frame                  Project Description                  Static and Frequency Analyses                  Optimization Analysis                  Design Study</p> <p><b>Lesson 14: Pressure Vessel Analysis</b>                  Case Study: Pressure Vessel                  Project Description                  Pressure Vessel Analysis                  Manhole Nozzle Flange and Cover</p>
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**NOTE:**

\*Indicative. Course length may vary depending on number of topics that were chosen to be covered.

The table below is a guideline for the course length with respect to number of topics to be covered.

Number of Topics	Number of days
5 or less	1
6-9	2
10-14	3

To Book call: 1300 SWX CAD (1300 799 223)

