

# Inventor Simulation and Analysis



## Course Details:

**Duration:** 2 Days

**Prerequisite:** Inventor Introduction or equivalent experience

**Courseware:** Included

**Achievement:** Certificate

**Time:** 8:30 a.m. – 4:30 p.m.

## General Information:

**Locations:** All courses are offered online, on-site, or in-person at SolidCAD training facilities across Canada, including:

Burnaby, BC  
Calgary, AB  
Edmonton, AB  
Regina, SK  
Winnipeg, MB  
Richmond Hill, ON  
Ottawa, ON  
Montreal, QC  
Quebec City, QC  
Hanwell, NB  
Halifax, NS

## Pricing, Registration &

**Scheduling:** Please contact our training coordinator at 1-877-438-2231 x227 or via email at [training@solidcad.ca](mailto:training@solidcad.ca)

**Complete course listing:**

[www.solidcad.ca/training](http://www.solidcad.ca/training)

## Course Description:

Inventor Simulation and Analysis training program introduces designers to the built-in toolset for performing motion simulation and linear, structural finite element analysis (FEA) to help users understand how their designs will perform. Stress, strain, deflection, modal (natural shapes and frequencies) and dynamic (rigid-body) simulations are covered.

Upon completion, users will have the ability to confidently validate their digital prototypes and make early decisions to optimize their designs.

## Learning Objectives:

### Stress and Frame Analysis overview

- Frame vs. Stress Analysis environments
- Global and local mesh control, mid-plane meshing
- Element types (beam, tetrahedral, shell)
- Boundary conditions (loads, constraints)
- Analyzing assemblies (contact options)
- Automatic vs. manual convergence
- Parametric studies and design optimization
- Modal Analysis (natural frequencies and mode shapes) overview
- Topology Optimization (*Shape Generator*)
- Results interpretation for linear static stress and modal analyses

### Dynamic Simulation overview

- Creating joints for mechanisms / kinematic chains
- Defining constant and variable loads
- Repairing redundancies
- Understanding results
- Sharing dynamic simulation results with Stress Analysis

## Supplemental Learning:

- Autodesk Inventor Nastran Essentials
- Autodesk Fusion 360 - Simulation and Generative Design
- Autodesk Inventor Productivity
- Autodesk Inventor Sheet Metal
- Autodesk Inventor Tube & Pipe
- Autodesk Inventor for Cable & Wire Harness