

Autodesk Inventor Simulation Training Course

Course Overview

Course Length: 16-Hours

- 16-Hours – 8 x 2-hour training sessions
- Remote training over MS Teams
- Sessions are recorded and download links for each session are provide for future use
- Training for up to 1-3 People
- Sessions can start within 7 days upon ordering
- Flexible sessions (i.e. consecutive or Monday, Wednesday, Friday, etc.)
- Courses are private and topics can be customised to suit
- Includes Certificate of Completion

Learn the fundamental principles and recommended workflows for analysing designs and creating dynamic simulations of mechanisms using Autodesk® Inventor® Professional.

Users learn how to validate digital prototypes by simulating the operation of mechanisms and motorised assemblies in the Dynamic Simulation Environment.

They also learn how to analyse parts and assemblies, perform parametric design studies, and use modal analysis in the FEA and Frame Analysis Environment of Autodesk Inventor. Hands-on exercises representing real-world, industry-specific design scenarios are included.

Topics Covered

- Cyclic Symmetry Analysis
- Assembly Optimization
- Bolted Connections
- Weldment Analysis
- Assembly Analysis with Built-in Welds
- Wind Load Analysis
- Fabrication Analysis
- Sheet Metal Analysis
- Motion Load Transfer Analysis
- Multiple Motion Load Transfer
- Modal Analysis
- Frame Analysis Environment
- Frame Analysis Using Content Centre Structures
- Frame Analysis Using Frame Generator Structures
- Dynamic Simulation Joints
- Dynamic Simulation Environmental Constraints
- Analysing Dynamic Simulation Results

Prerequisites

Students should have completed an Autodesk Inventor Introduction to Modelling course. Students should also have a solid understanding of Frame Generator and Weldments found in the Autodesk Inventor Advanced Assembly Modelling course and have a working knowledge of complex assembly design using Autodesk Inventor, a foundational understanding of finite element analysis and kinematic motion, and mechanical engineering or engineering analysis principles.

Training Guide Contents

Chapter 1: Introduction to Autodesk Inventor Simulation

- 1.1 Introduction to the Simulation Environment
- 1.2 Simulation Workflows and Study Types
- 1.3 Recommended Analysis Practices
- 1.4 Preparing Models for Simulation

Chapter 2: Stress and Assembly Analysis

- 2.1 Part Analysis Fundamentals
- 2.2 Assembly Analysis
- 2.3 Assembly Optimisation
- 2.4 Cyclic Symmetry Studies
- 2.5 Bolted Connections
- 2.6 Weldment and Built-in Weld Analysis

Chapter 3: Specialised Analysis Studies

- 3.1 Fabrication Analysis
- 3.2 Sheet Metal Analysis
- 3.3 Wind Load Analysis
- 3.4 Modal Analysis

Chapter 4: Frame Analysis

- 4.1 Frame Analysis Environment
- 4.2 Using Content Centre Structures
- 4.3 Using Frame Generator Structures
- 4.4 Reviewing Frame Analysis Results

Chapter 5: Dynamic Simulation

- 5.1 Dynamic Simulation Joints
- 5.2 Environmental Constraints
- 5.3 Analysing Dynamic Simulation Results

Chapter 6: Motion Load Transfer and Design Studies

- 6.1 Motion Load Transfer Analysis
- 6.2 Multiple Motion Load Transfer
- 6.3 Parametric Design Studies
- 6.4 Interpreting and Comparing Results

Chapter 7: Review and Best Practices

- 7.1 Reviewing Study Results
- 7.2 Simulation Workflow Best Practices