

Autodesk CFD 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 provided for future use
- Training for up to 1-3 people
- Sessions can start within 7 days upon ordering
- Flexible sessions (for example, consecutive or Monday, Wednesday, Friday)
- Courses are private and topics can be customised to suit
- Includes Certificate of Completion

The Autodesk CFD Training Course provides practical instructor-led training for engineers, designers, manufacturers, HVAC consultants, building services engineers, sustainability specialists, data centre consultants, and digital engineering professionals looking to leverage Computational Fluid Dynamics (CFD) simulation to improve design performance and reduce project risk.

This Autodesk CFD Course teaches participants how to simulate airflow, fluid flow, heat transfer, pressure distribution, thermal comfort, cooling performance, ventilation effectiveness, and product performance using Autodesk CFD Ultimate. The course focuses on practical engineering applications and real-world workflows rather than purely theoretical CFD concepts.

Whether you are searching for Autodesk CFD Training, Autodesk CFD Learning, an Autodesk CFD Course, or an Autodesk CFD Training Course, this training provides practical skills that can be immediately applied to engineering and design projects

Autodesk CFD Training Delivery Options

This Autodesk CFD Training Course can be delivered in three different formats:

CFD Simulation Training for Manufacturing

Focused on manufacturing, product design, industrial equipment, process equipment, electronics cooling, thermal management, fluid flow, and product optimisation.

CFD Simulation Training for AEC

Focused on buildings, HVAC systems, ventilation, thermal comfort, sustainability, data centres, construction projects, and building services engineering.

CFD Simulation Training Customised

Tailored specifically around your organisation's projects, engineering challenges, workflows, and simulation requirements. Customised training and simulation studies based on commercial projects may take longer than 16-hours and hours required will be pre-determined prior to commencement of training.

Topics Covered

- Computational Fluid Dynamics fundamentals
- Fluid flow analysis
- Heat transfer simulation
- Airflow and ventilation studies
- Thermal management
- Electronics cooling
- HVAC analysis
- Building performance analysis
- Data centre cooling
- Sustainability studies
- Design optimisation
- Engineering reporting
- Results interpretation
- Project-based simulation workflows

Prerequisites

No prior CFD experience is required.

Participants should have a basic understanding of engineering principles and be familiar with CAD software such as Autodesk Inventor, Fusion, Revit, Civil 3D, Plant 3D, or similar engineering design applications.

Training Guide Contents

CFD Simulation Training for Manufacturing

Chapter 1: CFD Fundamentals

- Introduction to Computational Fluid Dynamics
- Understanding Fluid Behaviour
- Engineering Applications of CFD
- CFD Terminology and Concepts

Chapter 2: Autodesk CFD User Interface

- Autodesk CFD Interface
- Project Navigation
- Simulation Workflow
- Project Setup

Chapter 3: Geometry Preparation

- CAD Model Import
- Geometry Simplification
- Repair Tools
- Model Validation

Chapter 4: Materials and Fluid Properties

- Material Libraries
- Fluid Definitions
- Thermal Properties
- Custom Material Creation

Chapter 5: Boundary Conditions

- Inlets and Outlets
- Pressure Conditions
- Heat Sources
- Environmental Conditions

Chapter 6: Meshing and Solver Setup

- Mesh Fundamentals
- Automatic Meshing
- Mesh Refinement
- Solver Configuration

Chapter 7: Internal Flow Analysis

- Pipe Flow Studies
- Pressure Drop Analysis
- Flow Distribution
- Equipment Performance

Chapter 8: External Flow Analysis

- Aerodynamics
- Wind Studies
- Drag Analysis
- External Flow Behaviour

Chapter 9: Thermal Management

- Electronics Cooling
- Heat Transfer Analysis
- Heat Sink Performance
- Thermal Optimisation

Chapter 10: Design Studies and Optimisation

- Parametric Studies
- What-If Scenarios
- Design Comparisons
- Performance Improvements

Chapter 11: Advanced Manufacturing Applications

- Rotating Regions
- Fans and Blowers
- Heat Exchangers
- Industrial Equipment Simulation

Chapter 12: Results, Reporting and Project Workshop**

- Results Interpretation
- Velocity Analysis
- Pressure Analysis
- Temperature Analysis
- Engineering Reports
- Project-Based Simulation Workshop

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CFD Simulation Training for AEC

Chapter 1: CFD Fundamentals for Buildings

- Introduction to Building CFD
- Airflow Principles
- Heat Transfer Principles
- Building Performance Analysis

Chapter 2: Autodesk CFD User Interface

- Autodesk CFD Interface
- Project Setup
- Building Workflow Overview
- Model Navigation

Chapter 3: BIM and Model Preparation

- Revit Integration
- BIM Workflows
- Geometry Preparation
- Model Simplification

Chapter 4: Building Materials and Environmental Inputs

- Material Definitions
- Environmental Conditions
- Weather Data
- Solar Effects

Chapter 5: HVAC System Analysis

- Supply Air Systems
- Return Air Systems
- Air Distribution
- HVAC Performance

Chapter 6: Ventilation Analysis

- Natural Ventilation
- Mechanical Ventilation
- Air Exchange Rates
- Indoor Air Quality

Chapter 7: Thermal Comfort Studies

- Occupant Comfort

- Temperature Distribution
- Draught Analysis
- Comfort Validation

Chapter 8: Sustainability and Energy Performance

- Sustainability Analysis
- Green Building Design
- Energy Efficiency Studies
- Passive Design Evaluation

Chapter 9: Data Centre Cooling

- Rack Cooling Analysis
- Hot and Cold Aisles
- Airflow Optimisation
- Critical Facility Performance

Chapter 10: Large Building Analysis

- Commercial Buildings
- Hospitals
- Airports
- Industrial Facilities

Chapter 11: Design Optimisation and Reporting

- Design Alternatives
- Scenario Analysis
- Stakeholder Reporting
- Visualisation Outputs

Chapter 12: AEC Project Workshop**

- Building Performance Analysis
- Real Project Studies
- Design Validation
- Optimisation Strategies
- Commercial Project Outcomes

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