



AUTODESK/AUTOCAD TRAINING

Autodesk Simulation

Master Autodesk Simulation for advanced product design and testing. Confidently analyze performance and optimize designs.

DURATION

Flexible

LEVEL

Intermediate

FORMAT

Instructor-Led

- Globally Recognized Certification

- Expert-Led Hands-On Training

- Flexible Scheduling

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COURSE OVERVIEW

This intermediate-level Autodesk Simulation course, offered by Computer Pride, is meticulously designed to empower engineers, designers, and analysts with the advanced computational tools necessary for predicting product performance, optimizing designs, and validating engineering decisions before physical prototyping. You will dive deep into Autodesk's powerful simulation software suite, including Autodesk Nastran In-CAD for finite element analysis (FEA), Autodesk CFD for computational fluid dynamics, and other specialized tools for specific analyses like thermal or explicit dynamics. The course emphasizes practical application, allowing you to solve real-world engineering challenges across various industries, from automotive and aerospace to consumer products and heavy machinery.

Mastering Autodesk Simulation tools will significantly enhance your ability to innovate faster, reduce development costs, and bring higher-quality, more reliable products to market. By understanding how to set up, run, and interpret simulation results, you'll gain a critical edge in design validation, material selection, and failure prediction. This comprehensive training will equip you with the skills to confidently tackle complex engineering problems, making you an invaluable asset in any product development team focused on efficiency, structural integrity, and product excellence.

Level	Intermediate
Vendor	Autodesk/AutoCAD

COURSE CURRICULUM

01 Module 1: Introduction to Engineering Simulation & FEA Fundamentals

- Overview of Engineering Simulation workflows and benefits
- Introduction to Autodesk Simulation software portfolio
- Core concepts of Finite Element Analysis (FEA): Nodes, Elements, Meshing
- Understanding material properties and their influence on simulation results
- Defining boundary conditions, loads, and constraints
- Basic interpretation of simulation outputs and result validation

02 Module 2: Structural Analysis with Autodesk Nastran In-CAD

- Navigating the Autodesk Nastran In-CAD interface and setup
- Performing Linear Static Stress Analysis: Setup, execution, and post-processing
- Modal Analysis: Determining natural frequencies and mode shapes
- Buckling Analysis: Predicting structural instability under compressive loads
- Analyzing assemblies: Defining contact conditions and connections
- Generating professional reports and visualizing simulation results

03 Module 3: Computational Fluid Dynamics (CFD) with Autodesk CFD

- Fundamentals of fluid flow, heat transfer, and their engineering applications
- Introduction to the Autodesk CFD environment and project setup
- Setting up fluid flow simulations: Inlets, outlets, walls, and domain definition
- Advanced mesh generation techniques for complex CFD models
- Analyzing velocity, pressure, temperature, and turbulence distributions
- Understanding transient vs. steady-state CFD simulations and their applications

04 Module 4: Thermal and Multi-physics Simulation

- Principles of heat conduction, convection, and radiation
- Conducting thermal stress analysis and combined thermal-structural simulations
- Introduction to coupled multi-physics simulations (e.g., fluid-thermal interactions)

- Basic concepts of Fatigue Analysis for predicting component life
- Strategies for optimizing designs based on thermal and multi-physics insights

05 Module 5: Dynamic Analysis and Advanced Topics

- Introduction to dynamic simulation: Time-domain and frequency-domain analyses
- Performing Transient Response Analysis for time-varying loads
- Concepts of Impact and Drop Test Simulation using explicit dynamics (overview)
- Parametric studies and design optimization workflows within Autodesk Simulation tools
- Best practices for robust simulation modeling, verification, and error checking

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **CAE (Computer-Aided Engineering) Analyst**
- > **Product Design Validation Engineer**
- > **Finite Element Analysis (FEA) Specialist**

FREQUENTLY ASKED QUESTIONS

Q: What foundational engineering knowledge or prior software experience is recommended before enrolling in the Autodesk Simulation course?

While this is an intermediate course, a basic understanding of engineering mechanics, materials science, and heat transfer principles is highly beneficial. Prior experience with 3D CAD software, particularly AutoCAD or Autodesk Inventor, will also significantly help, as simulation models are typically built upon existing CAD geometries. The course will cover simulation-specific software navigation, but familiarity with the Autodesk ecosystem aids a smoother learning curve.

Q: How will mastering Autodesk Simulation tools directly contribute to my ability to develop innovative and reliable products?

Mastering Autodesk Simulation tools will empower you to virtually test and validate product designs under various real-world conditions, identifying potential failures, optimizing material usage, and improving performance long before physical prototypes are made. This capability accelerates the design cycle, reduces costly physical testing, and fosters an iterative design process that leads to more innovative, efficient, and highly reliable products, directly impacting market competitiveness.

Q: Does this course cover any specific industry standards or prepare me for professional simulation certification exams?

This course focuses on imparting practical skills and theoretical understanding of Autodesk Simulation software, which are broadly applicable across industries. While it doesn't directly serve as a certification exam prep course for specific industry standards (like ASME or Eurocode), the comprehensive curriculum provides a strong foundation in FEA and CFD principles and their application, which are essential for any professional simulation certification. The knowledge gained will significantly aid in understanding and applying relevant industry standards in your daily work.

ABOUT COMPUTER PRIDE

**East Africa's Premier IT Training Center**

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

10,000+

Professionals Trained

50+

Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

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