

Autodesk Inventor Essentials

Courseware Description

This courseware covers the fundamental principles of 3D parametric part design, assembly design, and creating production-ready part and assembly drawings using Autodesk® Inventor™. Students learn how to capture design intent by using the proper techniques and recommended workflows for creating intelligent 3D parametric parts; creating, placing, and constraining custom and standard components in an assembly; and simulating mechanisms, animating assembly designs, and checking for interferences. Students also learn how to document their designs using base, projected, section, detail, and isometric drawing views; document assemblies using standard and exploded drawing views; and follow drafting standards while dimensioning and annotating drawing views with automated balloons and parts lists.

Hands-on exercises representing real-world, industry-specific design scenarios are included.

Suggested Course Duration:	5 days
Pages:	Vol. 1: 382 Vol. 2: 344
Trial CD:	Yes
Onscreen Exercises Included?	Yes

Objectives

The primary objective of this course is to provide students with a thorough understanding of the principal 3D design, validation, and documentation processes that they will use to develop products using Autodesk Inventor. Upon completion of the course, students will be proficient in 3D part and assembly design, and in documenting those designs using part and assembly drawing creation and annotation techniques.

Who Should Attend

This courseware is designed for new Autodesk Inventor users.

Prerequisites

No previous CAD experience is necessary. However, drafting, design, or mechanical engineering experience is a plus. It is also recommended that the student have a working knowledge of Microsoft® Windows® XP or Microsoft® Windows® 2000.

Course Outline

Day 1

Getting Started

- Autodesk Inventor User Interface
- Online Help and Tutorials

Parametric Part Design and Basic Sketching

- Designing Parametric Parts
- Using Project Files for Part Design

Basic Sketching Techniques

- Creating 2D Sketches
- Geometric Constraints
- Dimensioning Sketches

Basic Shape Design

- Creating Basic Sketched Features
- Intermediate Sketching
- Editing Parametric Parts
- Creating Work Features
- Creating Basic Swept Shapes

Detailed Shape Design

- Creating Chamfers and Fillets
- Creating Holes and Threads
- Paterning and Mirroring Features
- Creating Thin-Walled Parts

Day 2

Assembly Design Overview

- Designing Assemblies
- Using Project Files for Assembly Design

Placing, Creating, and Constraining Components

- Placing Existing Components in an Assembly
- Constraining Components
- Placing Standard Components Using the Content Center
- Basic Part Design in an Assembly

Basic Assembly Tools

- Identifying Parts in an Assembly
- Analysis and Motion Tools
- Presenting Your Assembly

Day 3

Basic View Creation

- Drawing Creation Environment
- Base and Projected Views
- Section Views
- Detail Views
- Managing Views

Dimensions, Annotations, and Tables

- Automated Dimensioning Techniques
- Manual Dimensioning Techniques
- Annotating Holes and Threads
- Creating Centerlines, Symbols, and Leaders
- Creating Tables

Day 4

Annotating Assembly Drawings

- Bill of Materials
- Creating and Customizing Parts Lists
- Creating Balloons

Drawing Standards and Resources

- Setting Drawing Standards
- Drawing Resources

Note: The suggested course duration is a guideline. Course topics and duration may be modified by the instructor based upon the knowledge and skill level of the course participants.

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