



AutoCAD Engineering Design Course: 2D Drawing Standards, 3D Modelling and Drawing Sets



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Introduction:

AutoCAD engineering design, covering 2D drawing standards, 3D modelling and drawing sets, is a 1-week course for engineers, draughtspersons and technical designers in engineering, construction, manufacturing and utility organisations, ending with a Standard Engineering Drawing Set built from a 3D model. Drawings produced without shared templates, layer rules and reference control are slow to revise, hard to check and inconsistent between disciplines and contractors. Nominees already use AutoCAD for basic drafting, and teaching is by hands-on lab work on an engineering drawing package. CoreConcept Training Center delivers this AutoCAD engineering design course.

Course Objectives:

- Set up drawing templates, layer structures and text and dimension styles that follow ISO 13567 and ISO 128 principles
- Build blocks with attributes and dynamic behaviour and extract their data into schedules and tables
- Control multi-discipline drawings with external references, layouts, viewports and annotative scaling
- Model engineering parts and assemblies as 3D solids and surfaces and generate 2D views from them
- Organise, publish and check drawing sets with the Sheet Set Manager, PDF output and the CAD Standards checker
- Produce a Standard Engineering Drawing Set that colleagues can revise, check and reuse

Target Audience:

- Design engineers responsible for preparing and checking engineering drawings
- Draughtspersons responsible for drawing production and revisions
- Technical designers responsible for 3D models and fabrication details
- CAD coordinators responsible for templates, standards and drawing management
- Site and maintenance engineers responsible for as-built and modification drawings

Course Outline:

Day 1: Engineering Drawing Standards and CAD Setup

- ISO 128 Representation Principles for Engineering Drawings
 - ISO 13567 Layer Naming and Organisation Rules
 - AutoCAD Drawing Template With Units and Styles
 - Text, Dimension and Multileader Style Configuration
 - Existing Drawing Audit Against Organisation CAD Rules
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Day 2: Blocks, Attributes and Annotation Control

- Dynamic Blocks With Parameters and Action Sets
- Block Attributes for Title Blocks and Tags
- Data Extraction From Attributes Into Schedules
- Annotative Scaling Across Model and Layout Spaces
- Layouts, Viewports and Plot Style Table Setup

Day 3: Multi-Discipline Drawings and 3D Modelling

- External References for Multi-Discipline Drawing Coordination
- Sheet Set Manager for Drawing Register Control
- 3D Solid Modelling With Extrude, Revolve and Sweep
- 3D Surface and Mesh Modelling for Complex Shapes
- VIEWBASE Drawing Views Generated From 3D Models

Day 4: Drawing Quality, Revisions and Problem Cases

- CAD Standards Checker With DWS Standards Files
- Revision Clouds, Revision Tables and Drawing Status Control
- Broken Xref Paths and Drawing File Recovery
- Drawing Purge, Audit and File Size Reduction
- PDF Publishing and Electronic Drawing Transmittal Packages

Day 5: Lab Work and the Engineering Drawing Set

- Lab Exercise Modelling a Mechanical Assembly in 3D
- Lab Exercise Producing Sections and Details From Models
- Lab Exercise Coordinating Discipline Drawings With Xrefs
- Drawing Set Peer Check Against the Standards File
- Standard Engineering Drawing Set Completion and Publishing

Skills You Will Gain:

- CAD Template Design
 - Layer Standardisation
 - Dynamic Block Creation
 - Annotation Scaling
 - Reference Drawing Coordination
 - 3D Solid Modelling
 - Drawing Set Management
 - Drawing Quality Checking
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Why Attend This Course:

- Deliver a Standard Engineering Drawing Set with its 3D model, sheet set and standards file to the engineering manager and the document controller
- Decide which template, layer and referencing rules an engineering team should adopt for new projects
- Avoid drawing errors, slow revisions and rejected submissions caused by inconsistent layers, styles and references
- Train colleagues on the templates, blocks and checking routine built during the lab exercises

Conclusion:

Back at work, the participant gives the Standard Engineering Drawing Set, the template and the standards file to the engineering manager, the document controller and fellow designers. They use them to decide which drawing rules become the team standard and how references and sheet sets are organised on the next project. After the first submission, the organisation should review checking comments, revision counts and drawing rejections and adjust the template and standards file where problems repeat.

Frequently Asked Questions FAQ:

What should participants know before an AutoCAD engineering design course?

Participants should already draw and edit basic geometry in AutoCAD and read engineering drawings in their own discipline. Bringing a typical drawing, title block or company template helps them apply the lab exercises to the standards their organisation already uses.

How does an AutoCAD engineering design course differ from an introductory AutoCAD course?

Introductory courses teach basic commands and simple 2D drafting. This course assumes those basics and concentrates on drawing standards, dynamic blocks, references, sheet sets, 3D modelling and drawing quality control for engineering teams.

Why do drawing standards matter in AutoCAD engineering design?

Shared templates, layer rules and styles let several designers and contractors work on the same drawing set without confusion. They make drawings faster to check and revise, and they reduce errors when drawings move between disciplines and organisations.

What do participants take back from the AutoCAD engineering design course?

Participants take back a Standard Engineering Drawing Set built from a 3D model, a drawing template, a block library, a sheet set and a CAD standards file they can use on their next project.
