Course Descriptions

AutoCAD/AutoCAD LT 2012 Level 1 - Training for the Professional, Part I & II
Prerequisite: Working knowledge of Microsoft Windows
Working knowledge of basic design/drafting procedures and terminology
Length: 40 Hours

Course Description:
The objective of AutoCAD/AutoCAD LT 2012 Fundamentals is to enable students to create a basic 2D drawing in AutoCAD. Even at this fundamental level, AutoCAD is one of the most sophisticated computer applications that you are likely to encounter. Therefore, learning to use it can be challenging. To make the process easier and provide flexibility for instructors and students, the course is divided into two parts that can be taken independently.

The Part 1 (24 hours) training guide covers the essential core topics for working with AutoCAD. The teaching strategy is to start with a few basic tools that enable the student to create and edit a simple drawing, and then continue to develop those tools. More advanced tools are also introduced throughout the course. Not every command or option is covered, because the intent is to show the most essential tools and concepts. Topics include:

- Understanding the AutoCAD workspace and user interface
- Using basic drawing, editing, and viewing tools
- Organizing drawing objects on layers
- Inserting reusable symbols (blocks)
- Preparing a layout to be plotted
- Adding text, hatching, and dimensions

The Part 2 (16 hours) training guide continues with more sophisticated techniques that extend a student's mastery of the program. For example, users go beyond the basic skill of inserting a block to learn how to create blocks, and beyond the basic skill of using a template to understand the process of setting up a template. Topics include:

- Using more advanced editing and construction techniques
- Adding parametric constraints to objects
- Creating local and global blocks
- Setting up layers, styles, and templates
- Learning advanced plotting and publishing options

AutoCAD 2012 Level 2 - Training for the Professional
Prerequisite: AutoCAD Professional Level 1 (Parts I & II), or equivalent experience
Length: 24 Hours

Course Description:
AutoCAD 2012 Advanced introduces advanced techniques and teaches you to be proficient in your use of AutoCAD. This is done by teaching you how to recognize the best tool for the task, the best way to use that tool, and how to create new tools to accomplish tasks more efficiently. Topics include:

- Advanced text objects
- Working with tables
- Defining dynamic blocks and attributes
- Outputting and publishing files for review
- Creating, publishing and customizing sheet sets
- Managing Layers
- CAD management and system setup
- Enhancing productivity by customizing the AutoCAD interface
- Using macros and custom routines
AutoCAD 2012 – Update for AutoCAD 2011 Users

**Prerequisite:** Working knowledge of AutoCAD 2011  
**Length:** 8 Hours

**Course Description:**
The AutoCAD 2012 Update for AutoCAD 2011 Users course introduces the new and enhanced features of AutoCAD 2012. Topics covered range from general improvements and command enhancements to new 3D modeling techniques and customization workflow. There are enhancements to many commands as well many new commands have been added.

Among the many changes in this new release are the general user interface components such as, Command Line, UCS, Ribbon, Multifunctional Grips, Object selections, Snapping, Quick Properties, External References, and Layers.

There are updates to commands such as Fillet, Chamfer, Join, Spline, Multileaders, 3D tools, and creation previews. Many new tools are introduced such as Nudge, Blend Curve, DWG Convert, 3D Offset Edge, Autodesk Exchange, and the Associative Array commands.

Some major new functionality includes the power to automatically generate intelligent documents based on 3D models with the new Drawing Views toolset. Another function to revolutionize online collaboration is the direct access to AutoCAD WS. Finally, searching for objects within your large database and libraries is improved with the new arrival of the Content Explorer. Topics include:

- Interface Enhancements
- Object Selection and Grouping
- Multifunctional Grips
- Command Enhancements including Fillet, Chamfer, Join and Spline
- New Object Moving Functionality – Nudge
- New Object Connection with Continuity Too – Blend Curve
- Associative Arrays including Rectangular, Polar, and New Path
- Style Enhancements to External References, Multileaders, and Layers
- UCS Improvements
- New 3D Model Import File Type List
- New 3D Offset Edge Command
- Various 3D Command Enhancements
- New Automatic 3D Model Documentation Toolset
- New DWG Conversion Capabilities
- Customization Updates, including Migration, Resets, and File Paths
- New Autodesk Exchange
- New Direct Access to AutoCAD WS
- New Content Explorer
**Revit Architecture 2012 Level 1 – Training for the Professional**

**Prerequisite:** An understanding of Architectural terminology

**Course Description:**
The Revit Architecture 2012 Fundamentals training guide is designed to teach you the Revit functionality as you would work with it in the design process. Begin by learning about the user interface and the Revit commands for design development, followed by those available for construction documentation.

Since building projects themselves tend to be extremely complex, Revit Architecture is a necessarily a complex program. The objective of the Revit Architecture 2012 Fundamentals training guide is to enable students to create full 3D architectural project models and set them up in working drawings. This training guide focuses on basic tools that the majority of users need to work with Revit Architecture. Topics include:

- Understand the purpose of Building Information Management (BIM) and how it is applied in Revit
- Use the Revit Architecture workspace and interface
- Work with the basic drawing and editing tools in Revit
- Create Levels and Grids as datum elements for the model
- Create a 3D building model with walls, curtain walls, windows, and doors
- Add floors and roofs to the building model
- Create standard and custom stairs
- Detail Reflected Ceiling Plans with ceilings and lighting fixtures
- Add component features such as furniture and equipment
- Set up sheets for plotting with text, dimensions, details, tags, and schedules
- Create details

**Inventor 2012 Level 1 – Training for the Professional, Part I & II**

**Prerequisite:** Working knowledge of CAD, Windows Operating System

**Course Description:**
The Inventor 2012 Introduction to Solid Modeling training guide instructs students in the best usage approaches for parametric design philosophy through a hands-on, practice-intensive curriculum. Students acquire the knowledge needed to complete the process of designing models from conceptual sketching, through to solid modeling, assembly design, and drawing production. Topics include:

- Inventor Interface
- Creating 2D sketches
- Constraining and dimensioning sketches
- Generating 3D parts from sketches
- Part modeling, adding and editing 3D features
- Work Features
- Model geometry and model display manipulation
- Resolving feature failures
- Feature duplication techniques
- Establishing and working with model relationships
- Placing and constraining parts in assemblies
- Assemble component display
- Model Information
- Presentation files (exploded views)
- Assembly tools
- Creating parts and features in assemblies
- Working with projects
- Creating and annotating drawings and views
**Inventor 2012 Level 2 – Training for the Professional**

**Prerequisite:** Inventor 2012 Level 1  
**Length:** 16 Hours

**Course Description:**
Autodesk Inventor 2012 Advanced Part Modeling is the second in a series of training guides on Inventor published by ASCENT. The goal of this guide is to build on the skills acquired in Inventor Introduction to Solid Modeling by taking students to a higher level of productivity when designing part models in Inventor.

In this training guide, we consider various approaches to part design and emphasize useful strategies. Specific advanced part modeling techniques covered include multi-body design, advanced lofts, advanced sweeps, coils, and surface modeling. Additional material aimed at increasing efficiency is also included: iFeatures for frequently needed design elements, iParts for similar designs, iLogic for automating designs, translation options for importing data, and the Engineer’s Notebook for communication. The guide also covers some miscellaneous drawing tools such as custom sketches symbols, working with title blocks and borders, and documenting iParts. With an understanding of these tools, students can begin to streamline the design and documentation process. Topics include:

- Advanced model appearance options
- Multi-body part modeling
- 2D and 3D sketching techniques
- Advanced geometry creation tools (work features, area lofts, sweeps, and coils)
- Part creating using iLogic
- Analysis tools
- Creating and editing basic surfaces
- Importing surfaces and surface repair tools
- Using iFeatures and iParts to work efficiently with part models
- Advanced drawing tools (tables for iParts, surfaces in drawing views, and custom sketched symbols)
- Importing and exporting data
- Emboss and Decal features
- Adding notes with the Engineer’s Notebook

**Inventor 2012 Update for Inventor 2010/2011 Users**

**Prerequisite:** Familiarity with Inventor 2010, 2011  
**Length:** 8 Hours

**Course Description:**
The Autodesk® Inventor® 2012 Update for 2010/2011 Users training guide introduces the new concepts and techniques of solid modeling that have been introduced with Autodesk Inventor 2011 and Autodesk Inventor 2012 software programs. The structure follows the most commonly used working environments. Topics include:

- Interface and General Enhancements
- Visualization Enhancement
- Part Modeling Enhancements
- Sketching Enhancements
- General Modeling Enhancement
- Top Down Design Enhancements
- Part Design using iLogic
- Assembly Modeling Enhancements
- Drawing Enhancements