

## Technical Education Services

### AutoCAD Mechanical Essentials

**Course Length: 4 days**

The AutoCAD Mechanical Essentials training course teaches students about the indispensable core topics required to use the AutoCAD® Mechanical software. Through a hands-on, practice-intensive curriculum, students acquire the knowledge needed to accelerate the mechanical design process. With specific tools for creating and manipulating geometry, automatically acquiring bills of materials, generating mechanical components, and performing design calculations, the AutoCAD Mechanical software offers significant productivity gains that the student learns to maximize.

#### Topics Covered

- Identify the main interface elements, their setup and what Help information is available, and to create and use drawing template files.
- Describe the object property management system in which layers are configured and the tools for manipulating layers.
- Describe the workflows for organizing drawing geometry and create a Mechanical structure in a drawing by creating components, component views, and folders.
- Describe the core mechanical design tools of rectangle, hatch, fillet, chamfer, holes, slots, and threads and how to use them to create and modify geometry in your drawings.
- Modify and edit drawing objects by creating multiple offset copies, scaling them with separate values for the X and Y direction, or using a power command.
- Insert industry standard parts into your assembly designs.
- Create production-ready drawings in model space and layouts of structured and non-structured geometry and insert title blocks and borders.
- Notate a drawing through the creation and editing of dimensions, hole charts, fits lists, and mechanical symbols.
- Explain how to create and edit a bill of materials, parts list, and balloons.
- Describe the tools that you can use to verify whether or not the standard parts or custom parts within your design meet or exceed the requirements for operational use.
- Exchange data between CAD systems in the form of Mechanical DWG™ and IGES files and create Mechanical drawings using Inventor Link.
- Create a custom drafting standard and drawing template that includes the configuration settings for layers, object properties, symbols, text, BOMs, parts list, balloons, and other annotation tools.

*Course description shown for AutoCAD 2021. Topics, curriculum, and/or prerequisites may change depending on software version.*



## Prerequisites

This course is designed for users who are new to the AutoCAD Mechanical software.

- A basic understanding of mechanical drafting or design.
- A working knowledge of the AutoCAD® software.
- A working knowledge of the Microsoft® Windows® 10 operating system.

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## Training Guide Contents

### Chapter 1: Getting Started

- Lesson: Interacting with the User Interface
- Lesson: Common Drawing Setup

### Chapter 2: Object Property and Layer Management

- Lesson: Property Management
- Lesson: Layer Control

### Chapter 3: Organizing Drawing Geometry

- Lesson: Drawing Creation Workflows and Organization
- Lesson: Structuring Data in Drawings
- Lesson: Reusing and Editing Structured Data

### Chapter 4: Tools for Creating Key Geometry

- Lesson: Core Design Tools
- Lesson: Power Snaps
- Lesson: Centerlines
- Lesson: Construction Lines
- Lesson: Designing with Lines
- Lesson: Adding Standard Feature Data for Holes and Slots

### Chapter 5: Tools for Manipulating Geometry

- Lesson: Editing Tools
- Lesson: Power Commands
- Lesson: Associative Hide

### Chapter 6: Mechanical Part Generators

- Lesson: Standard Parts
- Lesson: Chains and Belts
- Lesson: Shaft Generator
- Lesson: Standard Shaft Parts
- Lesson: Springs

### Chapter 7: Creating Drawing Sheets

- Lesson: Model Space Views in Layouts
- Lesson: Creating Drawing Sheets in Model Space
- Lesson: Annotation Views When Using Structure
- Lesson: Title Blocks and Drawing Borders

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### **Chapter 8: Dimensioning and Annotating Drawings**

- Lesson: Annotation and Annotation Symbols
- Lesson: Creating Dimensions
- Lesson: Editing Dimensions
- Lesson: Hole Charts and Fits Lists
- Lesson: Revision Lists

### **Chapter 9: Bill of Materials, Parts Lists, and Balloons**

- Lesson: Part References
- Lesson: Bill of Materials
- Lesson: Inserting Parts Lists
- Lesson: Ballooning Parts

### **Chapter 10: Design Calculations**

- Lesson: Design Calculations

### **Chapter 11: Leveraging Your Existing Data**

- Lesson: DWG Files
- Lesson: IGES Files
- Lesson: Model Documentation

### **Chapter 12: Mechanical Options for the CAD Manager**

- Lesson: Standards-Based Design
- Lesson: Configure Layer, Text, and Object Properties
- Lesson: Configure the Annotation Tools
- Lesson: Configure Component Properties, BOMs, Parts Lists, and Balloons

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## Cancellation Policy

The following cancellation policy shall apply to all training engagements, Live Online, Consulting Services and Dedicated/Custom Training:

- Company reserves the right to reschedule or cancel the date, time and location of its class at any time. In the event that a Training Class is cancelled by Company, Customer is entitled to a full refund. Company shall not be responsible for any other loss incurred by Customer as a result of a cancellation or reschedule.
- For Customer cancellations when written notice is received (i) at least ten (10) business days in advance of the class, the Customer is entitled to a full refund of its payment or reschedule enrollment, (ii) less than ten (10) business days, Customer shall not be entitled to a refund, but shall receive a class credit to be used within three (3) months of the date of the original class.
- Student substitutions are acceptable with at least two (2) days prior notice to the class, provided substitution meets course prerequisites and is approved by Company's Training Coordinator ([trainingcoordinator@rand.com](mailto:trainingcoordinator@rand.com))
- For all Training orders, cancellation notices must be submitted to [trainingcoordinator@rand.com](mailto:trainingcoordinator@rand.com). Company is not responsible for any error in the delivery of the email notice. In the event of any reschedule of Consulting Services and/or Dedicated/Custom Training by Customer, Company will invoice Customer for all non-cancellable travel expenses.

To request more information or to see training locations, visit [www.imaginit.com/contact-us](http://www.imaginit.com/contact-us).

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