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AutoCAD® 2022 Advanced

Learning Guide

Metric Units - 1st Edition

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ASCENT - Center for Technical Knowledge®
AutoCAD® 2022
Advanced

Metric Units - 1st Edition

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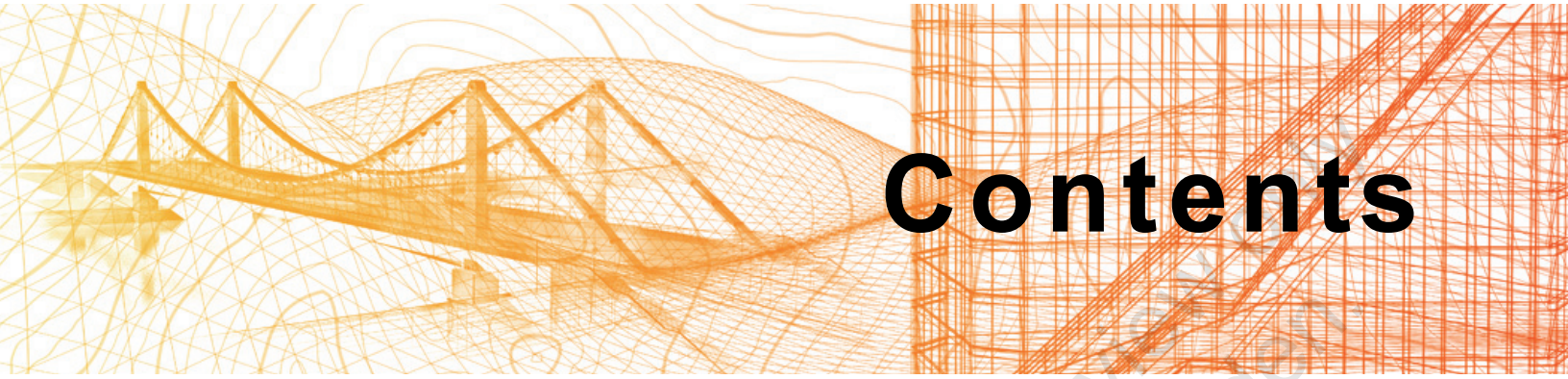

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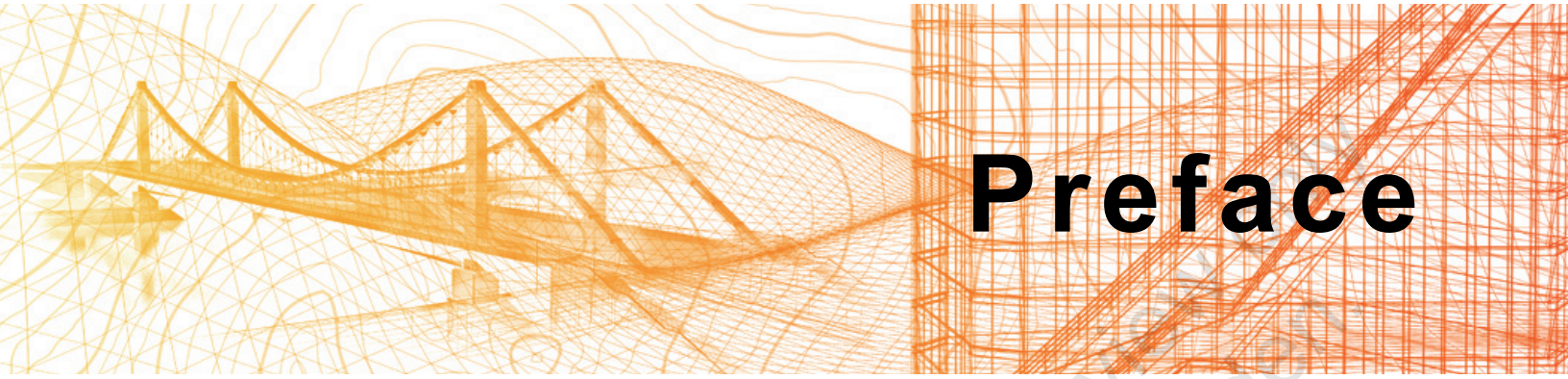

Preface

The *AutoCAD® 2022: Advanced* guide is designed for those using AutoCAD® 2022 with a Windows operating system. This guide is not designed for the AutoCAD for Mac software.

The *AutoCAD 2022: Advanced* guide introduces advanced techniques and teaches you to be proficient in your use of the AutoCAD software. 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 Covered

- Advanced text objects
- Working with tables
- Defining dynamic blocks and attributes
- Outputting and publishing files for review
- Collaboration and automation tools
- 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

Prerequisites

- Access to the 2022.0 version of the software, to ensure compatibility with this guide. Future software updates that are released by Autodesk may include changes that are not reflected in this guide. The practices and files included with this guide might not be compatible with prior versions (e.g., 2021).
- Completion of the *AutoCAD® 2022: Fundamentals* guide, or equivalent experience using the AutoCAD software.

Note on Software Setup

This guide assumes a standard installation of the software using the default preferences during installation. Lectures and practices use the standard software templates and default options for the Content Libraries.

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Lead Contributor: Renu Muthoo

Renu uses her instructional design training to develop courseware for AutoCAD and AutoCAD vertical products, Autodesk 3ds Max, Autodesk Showcase and various other Autodesk software products. She has worked with Autodesk products for the past 20 years with a main focus on design visualization software.

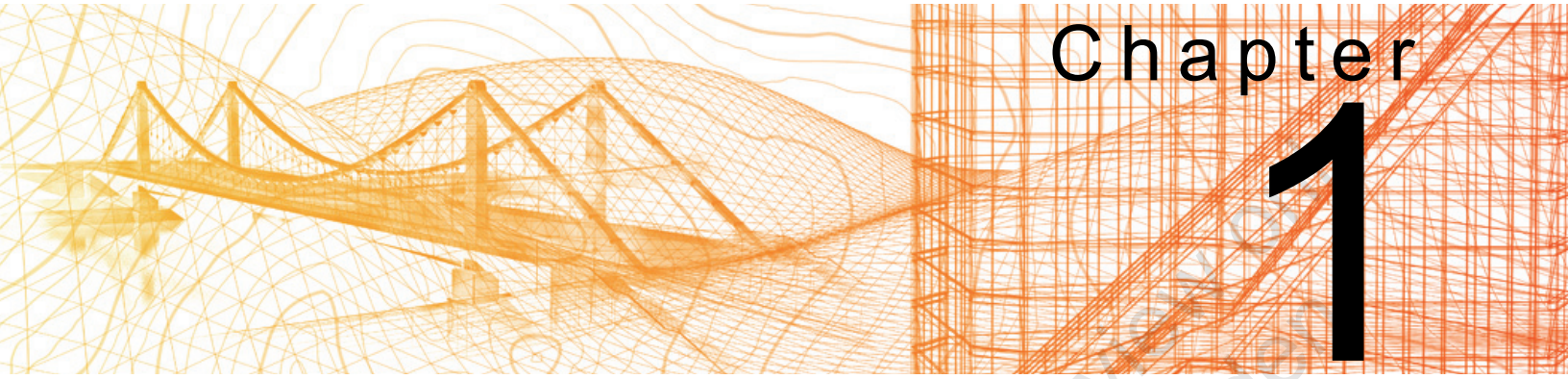
Renu holds a bachelor’s degree in Computer Engineering and started her career as a Instructional Designer/Author where she co-authored a number of Autodesk 3ds Max and AutoCAD books, some of which were translated into other languages for a wide audience reach. In her next role as a Technical Specialist at a 3D visualization company, Renu used 3ds Max in real-world scenarios on a daily basis. There, she developed customized 3D web planner solutions to create specialized 3D models with photorealistic texturing and lighting to produce high quality renderings.

Renu Muthoo has been a Lead Contributor for *AutoCAD: Advanced* since 2016.

In This Guide

The following highlights the key features of this guide.

Feature	Description
Practice Files	The Practice Files page includes a link to the practice files and instructions on how to download and install them. The practice files are required to complete the practices in this guide.
Chapters	A chapter consists of the following - Learning Objectives, Instructional Content, Practices, Chapter Review Questions, and Command Summary. • **Learning Objectives** define the skills you can acquire by learning the content provided in the chapter. • **Instructional Content**, which begins right after Learning Objectives, refers to the descriptive and procedural information related to various topics. Each main topic introduces a product feature, discusses various aspects of that feature, and provides step-by-step procedures on how to use that feature. Where relevant, examples, figures, helpful hints, and notes are provided. • **Practice** for a topic follows the instructional content. Practices enable you to use the software to perform a hands-on review of a topic. It is required that you download the practice files (using the link found on the Practice Files page) prior to starting the first practice. • **Chapter Review Questions**, located close to the end of a chapter, enable you to test your knowledge of the key concepts discussed in the chapter. • **Command Summary** concludes a chapter. It contains a list of the software commands that are used throughout the chapter and provides information on where the command can be found in the software.
Appendices	Appendices provide additional information to the main course content. It could be in the form of instructional content, practices, tables, projects, or skills assessment.



Introduction

Learn how to use the AutoCAD® software by completing a practice that will help you familiarize yourself with the structure of the practices available in this training guide, and learn the concepts that you are expected to know.

Learning Objective in This Chapter

- Review the use of the AutoCAD software by drawing, editing, and dimensioning a cross-section.

Practice 1a

Introduction

Practice Objective

- Review the use of the AutoCAD software by drawing, editing, and dimensioning a cross-section.

In this practice, you will draw, edit, and dimension a simple cross-section using a variety of tools (such as drawing aids and shortcut menu options), as shown in Figure 1–1. The purpose of this practice is to familiarize you with the style of the practices in this training guide and to review how to use the AutoCAD software.

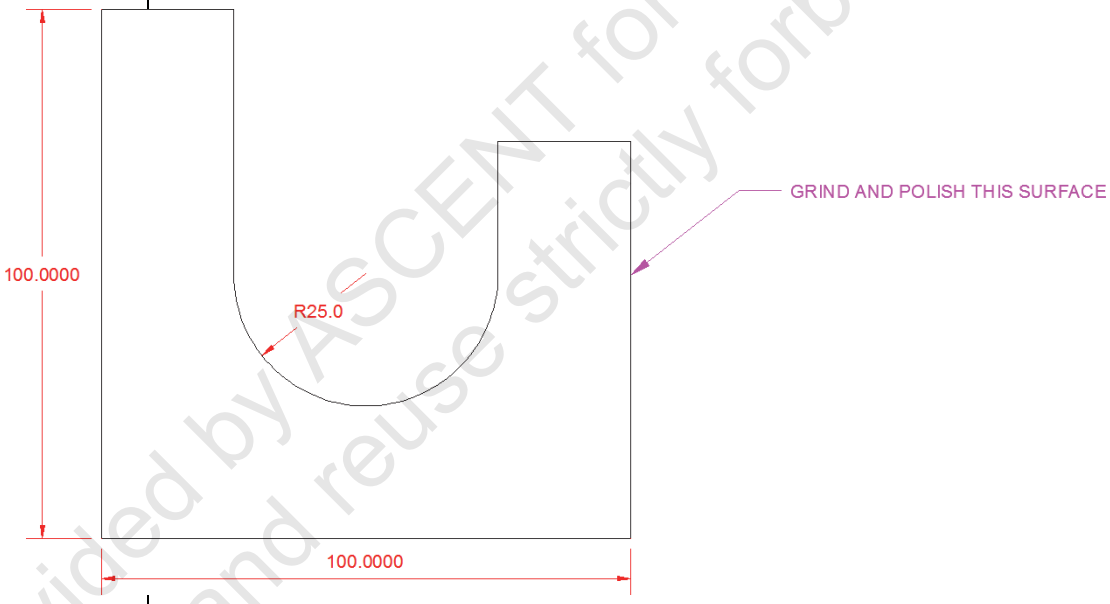


Figure 1–1

1. Open **Cross Section-M.dwg** from the practice files folder.

*If Object Snap is not displayed in the Status Bar, expand (Customization) and select **2D Object Snap**.*

2. In the Status Bar, expand (Object Snap) and select only **Endpoint** and toggle **Object Snap On**.
3. Start the **Polyline** command. Use the **Endpoint** object snap to pick the left endpoint of the top right horizontal line.
4. Toggle (Polar Tracking) on if it is not already done.
5. Move the cursor straight down, type **25**, and press <Enter>.
6. Right-click in the drawing window and select **Arc**. Move the crosshair horizontally to the left, type **50**, and press <Enter> to select a point 50 units to the left.

7. Right-click in the drawing window and select **Line**. Draw a polyline segment straight up and pick the right endpoint of the top left horizontal line.

8. Right-click and select **Enter** to end the command.

9. Without starting another command, select the new polyline object that you just created to display the grips.

10. Right-click, expand **Polyline**, and select **Edit Polyline**. Select the **Join** option. Select all of the other lines in the drawing and press <Enter>. Press <Enter> again or press <Esc> to end the command. Note that the polyline and all the other lines are converted into a single object.

11. Select the polyline object (single object), the leader, and the Mtext note. Right-click and select **Move**. Move the objects **75 units** to the right.

12. In the ribbon, in the *Annotate* tab>Dimensions panel, expand the Layer Control and select the layer **Dimensions**.

13. Create a linear dimension on the bottom of the object and a radius dimension on the arc, as shown in Figure 1–1. When you are done dimensioning, press <Esc> to end the dimension command.

14. Select only the linear dimension, hover the cursor over the dimension grip for the dimension text and select **Above Dim Line** from the multifunctional grip list. The text moves above the line. Press <Esc> to exit the dimension.

15. Select the radius dimension, right-click and change the *Precision* to **0.0**. The text changes to **R25.0**.

16. Add a linear dimension to the left vertical line.

17. Double-click on the magenta text and modify it to say **GRIND AND POLISH THIS SURFACE**.

18. Open the Layer Properties Manager. Select the layer **Object** and set it to be active if it is not already active.

19. Right-click in the Layer Properties Manager and select **Select All but Current**. Freeze the selected layers and close the Layer Properties Manager. Only the PLine object displays in the drawing window without any dimensions or text.

20. Save and close the drawing.