

# AutoCAD for Professional Audio-Visual (AV) Design

## Target Audience

This course is designed for professionals and beginners involved in audio-visual (AV) system planning, design, and technical documentation who want to develop practical drafting skills using AutoCAD. It is suitable for AV engineers, lighting designers, system integrators, technical designers, installation technicians, and professionals working in audio, lighting, and multimedia system deployment. The course is also beneficial for individuals with a basic understanding of AutoCAD who want to apply CAD tools specifically for AV system layouts, rack designs, signal diagrams, and installation drawings used in professional AV environments.

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## Course Objectives

- Introduce the fundamentals of AV CAD drafting and system design workflows.
  - Develop a strong understanding of AutoCAD tools used in AV system documentation.
  - Teach the use of AV symbols, blocks, and industry drafting standards.
  - Enable participants to create signal flow diagrams and system schematics.
  - Train learners to design rack elevations and equipment layouts.
  - Demonstrate how to create AV floor plans and integrated system layouts.
  - Build skills in creating clear technical documentation and annotations in AutoCAD.
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## Course Outcomes

By the end of this course, participants will be able to:

- Understand AV CAD drafting principles and design workflows.
- Use AutoCAD tools effectively for AV system drawings.
- Create and manage AV symbols, blocks, and drafting standards.
- Develop signal flow diagrams representing AV system architecture.



- Design rack elevations and equipment layout drawings.
  - Produce AV floor plans showing integrated system components.
  - Generate professional documentation and annotated drawings for AV installations.
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**Course Outline:** The course comprises **40-hours** of theory and labs and is divided into **13** different chapters. Each chapter will be followed by **hands-on lab exercises** to reinforce learning and gauge understanding of the topics covered.

### **Chapter 1: Introduction to AV CAD & Drafting Basics**

- Overview of AV system design and documentation
  - Role of CAD in AV system integration
  - Understanding AV drawings and documentation types
  - Basic drafting principles for AV layouts
  - Coordinate systems and drawing units
  - AV design workflow overview
  - Introduction to AutoCAD environment for AV work
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### **Chapter 2: AutoCAD Essentials for AV Design**

- AutoCAD interface and workspace navigation
  - Drawing setup and workspace configuration
  - Basic drawing commands for AV drafting
  - Modify tools used in AV design drawings
  - Object snaps and precision drawing
  - Layer management for AV systems
  - File organization and drawing templates
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### **Chapter 3: AV Symbols, Blocks & Standards**

- Importance of symbols in AV design documentation
  - Standard AV symbols for audio, video, and lighting equipment
  - Creating reusable blocks for AV equipment
  - Managing block libraries
  - Layer standards for AV drawings
  - Industry drafting standards for AV CAD documentation
  - Organizing symbol libraries for efficient workflow
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### **Chapter 4: Signal Flow Diagrams & Line Types**

- Understanding signal flow in AV systems
  - Types of AV signal paths
  - Creating signal flow diagrams in AutoCAD
  - Line types used for signal representation
  - Drawing connections and signal paths
  - Labeling signal lines and connections
  - Structuring system diagrams for clarity
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### **Chapter 5: Rack Elevations & Equipment Layouts**

- Understanding AV equipment racks
  - Rack unit standards and measurements
  - Creating rack elevation drawings
  - Equipment placement and spacing considerations
  - Power distribution and cable routing in racks
  - Labeling rack components and ports
  - Best practices for rack layout documentation
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## **Chapter 6: Floor Plans & AV System Integration**

- Understanding architectural floor plans for AV design
  - Integrating AV equipment into building layouts
  - Speaker placement and coverage planning
  - Display and projection system positioning
  - Lighting fixture placement in AV environments
  - Cable routing and pathway planning
  - Coordinating AV drawings with architectural plans
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## **Chapter 7: AutoCAD Annotations & Documentation**

- Adding text annotations in AV drawings
  - Dimensioning techniques for AV layouts
  - Leaders and callouts for equipment labeling
  - Drawing notes and documentation standards
  - Sheet layouts and title blocks
  - Organizing drawing sets for installation documentation
  - Preparing drawings for presentation and review
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## **Chapter 8: Future Trends in AV System Design**

- Evolution of AV system design practices
  - Emerging AV technologies and design considerations
  - Integration of networked AV systems
  - Smart building and automation trends
  - Digital documentation and collaborative design tools
  - Role of CAD in future AV workflows
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## **Chapter 9: Display & Touch Panel Elevations in AV Design**

- Understanding display mounting requirements
  - Designing display elevation drawings
  - Touch panel placement and ergonomics
  - Wall-mounted display layout planning
  - Control interface placement in AV environments
  - Documentation of display installation details
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## **Chapter 10: Ceiling Equipment Elevations in AV Design**

- Ceiling-mounted AV equipment overview
  - Designing ceiling speaker layouts
  - Lighting fixture ceiling layouts
  - Projector mounting elevations
  - Cable routing through ceiling spaces
  - Coordination with architectural ceiling plans
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## **Chapter 11: Essential AV Standards & AutoCAD Resources**

- Overview of AV industry standards
  - Documentation standards for AV system drawings
  - Recommended AutoCAD resources for AV designers
  - Templates and CAD libraries for AV documentation
  - Maintaining consistency in AV CAD drawings
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## **Chapter 12: Advanced AV CAD Techniques & Automation**

- Efficient CAD workflows for AV design
- Managing large AV drawing files
- Using automation tools in AutoCAD



- Creating reusable drawing templates
- Improving productivity in AV CAD workflows

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### **Chapter 13: AutoCAD Troubleshooting & Optimization**

- Common AutoCAD issues in AV design drawings
- Fixing drawing errors and file problems
- Managing large CAD files efficiently
- Optimizing drawing performance
- Maintaining organized CAD documentation

