Integrated Plant Engineering with AVEVA E3D: From Administration to Project Delivery

Course Objectives

This comprehensive AVEVA E3D training program is designed to provide participants with in-depth knowledge and practical expertise in 3D plant design, administration, catalog management, drafting, and multidisciplinary engineering integration. The course covers the complete project lifecycle—from project setup and database administration to modelling, drawing extraction, electrical and instrumentation integration, and final project delivery. Participants will develop the skills required to manage complex EPC projects using AVEVA's integrated ecosystem. By the end of the program, learners will be capable of executing and delivering coordinated 3D engineering projects aligned with industry standards and best practices.

Target Audience

This course is ideal for:

- Piping Designers and 3D Modellers
- Structural Designers and Plant Layout Engineers
- Electrical and Instrumentation Engineers
- AVEVA Administrators and CAD/BIM Managers
- Project Engineers and EPC Design Coordinators
- Professionals transitioning from PDMS or other 3D platforms to AVEVA E3D

Course Outcomes

Upon successful completion of this 120-hour program, participants will be able to:

- Configure and administer AVEVA E3D projects, including database management, user control, and project configuration.
- Develop and manage catalogues and specifications using Paragon, including piping, structural, insulation, and cable tray specifications.
- Perform complete 3D modelling of equipment, piping, structures, pipe supports, cable trays, and HVAC systems using engineering specifications.
- Generate and manage engineering drawings including isometrics, general arrangements, and drafting deliverables with proper revision control.
- Integrate AVEVA Engineering, Electrical, and Instrumentation modules within a unified project workflow.
- Execute electrical load modelling, cable design, panel configuration, and deliver professional electrical documentation.
- Configure instrumentation data, loops, signals, enclosures, and produce loop diagrams, termination drawings, and hook-up drawings.

- Apply quality control, model validation, and multidisciplinary coordination practices for EPC-level project delivery.
- Deliver final project documentation aligned with IFC standards and industry best practices.

Course Outline

The course comprises **160-hours** of theory and labs and is divided into **11** different Modules. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

Table of Contents

Module 4: AVEVA E3D Design – Modelling

- Design module interface and workflows
- Equipment modelling techniques
- Piping modelling using specifications
- Structural modelling (frames, members, grids)
- Pipe support modelling
- Instrument modelling
- Cable tray modelling
- HVAC duct modelling

Module 5: Isodraft Administration

- Isodraft environment and project setup
- Option file creation and control
- Template settings for piping isometrics
- MTO configuration and customization
- Isometric extraction workflows

Module 6: Draw Administration

- Draw admin setup and drawing standards
- Backing sheet and title block creation
- Representation rules and styles
- SYMBOL template creation
- Manual and auto tagging configuration

Module 7: Drafting & Extraction

- Isometric generation and review
- General Arrangement (GA) drawings
- 2D Layout extractions
- Annotation, dimensioning, and tagging
- Drawing revisions and updates

Module 8: Project Delivery & Best Practices

- Model checking and quality control
- Coordination between disciplines
- Clash Detection
- Final deliverables and handover
- Industry best practices and lessons learned

Module 9: AVEVA Engineering

- Overview and Introduction to AVEVA™ Engineering
- Creating and Editing Records
- Record Management
- Engineering Deliverables

Module 10: AVEVA Electrical

- Introduction to AVEVA Electrical
- Project Management and Collaboration
- Fundamentals of Electrical Design
- Load & Supply Modeling
- Advanced Panel & Compartment Configuration
- Cable Design & Configuration
- Cable Accessories & Installation Planning
- Electrical Drawing & Deliverables

Module 11: Aveva Instrumentation

- Project Setup & Instrument Data Management
- Signal & I/O Engineering
- Enclosure & Panel Engineering
- Instrument Allocation & Wiring Configuration
- Cable Creation, Termination & Interconnections
- Fieldbus, Control Valves & Installation Planning
- Cable Block Diagram Creation & Management
- Loop Drawings & Signal Connectivity
- Advanced Instrumentation Drawings & Deliverables