

AVEVA E3D

Course outline

Module 1: Introduction to AVEVA E3D

Module 1: Introduction to AVEVA E3D is an introductory course designed to provide an overview of the AVEVA E3D software and its capabilities. It covers topics such as the user interface, navigation, and basic modeling techniques. This module is designed to give students a basic understanding of the software and its features, and to provide a foundation for further learning.

Lessons

- Overview of AVEVA E3D
- Understanding the AVEVA E3D Interface
- Working with AVEVA E3D Models
- Creating and Editing AVEVA E3D Objects
- Working with AVEVA E3D Views
- Working with AVEVA E3D Layers
- Working with AVEVA E3D Attributes
- Working with AVEVA E3D Reports
- Working with AVEVA E3D Templates
- Working with AVEVA E3D Animations

After completing this module, students will be able to:

- Understand the fundamentals of 3D design and modelling in AVEVA E3D.
- Create and modify 3D models using the AVEVA E3D tools.
- Utilize the AVEVA E3D library of components and symbols.
- Generate drawings and reports from the 3D models.

Module 2: 3D Modeling and Design

Module 2 of the AVEVA E3D course focuses on 3D modeling and design. Students will learn how to create 3D models from scratch, as well as how to modify existing models. They will also learn how to use the various tools available in the AVEVA E3D software to create realistic 3D models. Additionally, students will gain an understanding of the principles of 3D design and how to apply them to their own projects.

Lessons

- Introduction to 3D Modeling and Design

- Understanding the Basics of 3D Modeling
- Working with 3D Modeling Tools
- Creating 3D Models with AVEVA E3D
- Working with 3D Modeling Software
- Advanced 3D Modeling Techniques
- Creating 3D Animations with AVEVA E3D
- Working with 3D Rendering Software
- Creating 3D Visualizations with AVEVA E3D
- Working with 3D Printing Software

After completing this module, students will be able to:

- Understand the fundamentals of 3D modeling and design principles.
- Create 3D models of components and assemblies using AVEVA E3D.
- Utilize the AVEVA E3D tools to create drawings and renderings of 3D models.
- Develop the ability to troubleshoot and modify 3D models in AVEVA E3D.

Module 3: Piping Design

Module 3 of the AVEVA E3D course covers the fundamentals of piping design. It covers topics such as pipe routing, pipe support, pipe stress analysis, and pipe fabrication. It also covers the use of AVEVA E3D software to create and manage piping designs. This module is designed to give students the skills and knowledge needed to design and manage complex piping systems.

Lessons

- Introduction to Piping Design
- Piping Design Process
- Piping Components and Specifications
- Piping Design Tools
- Piping Stress Analysis
- Piping Isometrics
- Piping Support Design
- Piping Fabrication and Installation
- Piping Design Documentation
- Piping Design Troubleshooting

After completing this module, students will be able to:

- Understand the fundamentals of piping design and engineering
- Develop the ability to create and modify piping systems in AVEVA E3D
- Utilize the tools and features of AVEVA E3D to create and modify piping systems
- Develop the ability to troubleshoot and optimize piping systems in AVEVA E3D

Module 4: Equipment Modeling

Module 4: Equipment Modeling is a module in the AVEVA E3D course that focuses on the creation of 3D models of equipment and components. It covers topics such as creating and editing equipment models, using the Equipment Modeler, and creating and editing component models. It also covers the use of the Equipment Modeler to create and edit equipment models, and the use of the Component Modeler to create and edit component models.

Lessons

- Introduction to Equipment Modeling
- Understanding Equipment Modeling Workflows
- Creating Equipment Models in AVEVA E3D
- Working with Equipment Model Components
- Modeling Equipment with Multiple Configurations
- Working with Equipment Model Properties
- Modeling Equipment with Multiple Configurations
- Working with Equipment Modeling Rules
- Troubleshooting Equipment Modeling Issues
- Best Practices for Equipment Modeling

After completing this module, students will be able to:

- Understand the fundamentals of 3D modeling and the AVEVA E3D software.
- Create 3D models of equipment and components using the AVEVA E3D software.
- Utilize the AVEVA E3D software to create accurate and detailed drawings of equipment and components.
- Utilize the AVEVA E3D software to create accurate and detailed bills of materials for equipment and components.

Module 5: Structural Design

Module 5 of the AVEVA E3D course focuses on the structural design of 3D models. It covers topics such as creating and editing structural components, creating and editing structural connections, and creating and editing structural assemblies. It also covers the use of the AVEVA E3D Structural Design module to create and manage structural designs.

Lessons

- Introduction to Structural Design
- Structural Design Principles
- Structural Design Process
- Structural Design Tools
- Structural Design Analysis
- Structural Design Optimization
- Structural Design Documentation
- Structural Design Automation
- Structural Design for Fabrication
- Structural Design for Maintenance

After completing this module, students will be able to:

- Understand the principles of structural design and how to apply them to create 3D models.
- Develop the ability to create and modify structural components and assemblies.
- Learn how to use the tools available in AVEVA E3D to create and modify structural components and assemblies.
- Develop the skills to create and modify structural drawings and documents.

Module 6: Electrical Design

Module 6 of the AVEVA E3D course covers the fundamentals of electrical design. It covers topics such as electrical components, wiring diagrams, and electrical schematics. It also covers the use of electrical design software and how to create and manage electrical designs. This module is designed to give students the skills and knowledge needed to create and manage electrical designs in the AVEVA E3D environment.

Lessons

- Introduction to Electrical Design in AVEVA E3D
- Electrical Design Workflows in AVEVA E3D
- Electrical Design Components in AVEVA E3D
- Electrical Design Rules and Best Practices in AVEVA E3D
- Electrical Design Documentation in AVEVA E3D
- Electrical Design Troubleshooting in AVEVA E3D
- Electrical Design Automation in AVEVA E3D
- Electrical Design Optimization in AVEVA E3D
- Electrical Design Visualization in AVEVA E3D
- Electrical Design Integration with Other Systems in AVEVA E3D

After completing this module, students will be able to:

- Understand the fundamentals of electrical design and the principles of electrical engineering.
- Develop the ability to create and modify electrical schematics and diagrams.
- Learn how to use the AVEVA E3D software to create and manage electrical designs.
- Develop the skills to troubleshoot and debug electrical designs.

Module 7: Isometric Drawing

Module 7 of the AVEVA E3D course covers the fundamentals of isometric drawing. Students will learn how to create isometric drawings from 3D models, as well as how to use the isometric drawing tools to create and edit isometric drawings. The module also covers the basics of isometric drawing standards and conventions.

Lessons

- Introduction to Isometric Drawing
- Isometric Drawing Tools and Techniques

- Creating Isometric Drawings in AVEVA E3D
- Working with Isometric Views in AVEVA E3D
- Isometric Drawing Best Practices
- Troubleshooting Isometric Drawings in AVEVA E3D
- Isometric Drawing Standards and Guidelines
- Advanced Isometric Drawing Techniques in AVEVA E3D
- Isometric Drawing for Piping and Equipment
- Isometric Drawing for Structural Steel

After completing this module, students will be able to:

- Understand the fundamentals of isometric drawing and its application in AVEVA E3D.
- Create isometric drawings of 3D models in AVEVA E3D.
- Utilize the isometric drawing tools in AVEVA E3D to create accurate and detailed drawings.
- Use the isometric drawing tools to modify existing drawings and create new drawings.

Module 8: Clash Detection

Module 8 of the AVEVA E3D course covers the fundamentals of clash detection, a process used to identify potential conflicts between different components of a 3D model. It covers topics such as setting up clash detection, running a clash test, and interpreting the results. It also provides an overview of the different types of clashes and how to resolve them.

Lessons

- Overview of Clash Detection
- Setting up Clash Detection
- Working with Clash Detection
- Clash Detection Reports
- Clash Detection Troubleshooting
- Clash Detection Best Practices
- Clash Detection Automation
- Clash Detection in AVEVA E3D
- Clash Detection in AVEVA PDMS
- Clash Detection in AVEVA Plant Design Management System (PDMS)

After completing this module, students will be able to:

- Understand the principles of clash detection and how to use the AVEVA E3D software to detect clashes in a 3D model.
- Identify and resolve clashes between different components of a 3D model.
- Utilize the clash detection tools in AVEVA E3D to identify and resolve clashes between different components of a 3D model.
- Create reports to document the clash detection process and the results of the clash detection process.

Module 9: Report Generation

Module 9 of the AVEVA E3D course focuses on report generation. It covers topics such as creating reports, customizing report formats, and using report templates. It also covers how to use the Report Generator to create reports from the 3D model. This module provides the skills necessary to generate reports quickly and accurately.

Lessons

- Overview of Report Generation in AVEVA E3D
- Creating Reports in AVEVA E3D
- Customizing Reports in AVEVA E3D
- Exporting Reports in AVEVA E3D
- Troubleshooting Report Generation Issues in AVEVA E3D
- Best Practices for Report Generation in AVEVA E3D
- Automating Report Generation in AVEVA E3D
- Integrating Report Generation with Other AVEVA E3D Modules
- Security Considerations for Report Generation in AVEVA E3D
- Advanced Report Generation Techniques in AVEVA E3D

After completing this module, students will be able to:

- Understand the fundamentals of report generation in AVEVA E3D.
- Create custom reports using the AVEVA E3D Report Generator.
- Utilize the Report Generator to generate reports from the AVEVA E3D database.
- Generate reports in various formats such as HTML, PDF, and Excel.

Module 10: Project Management

Module 10: Project Management is a module in the AVEVA E3D course that focuses on the fundamentals of project management. It covers topics such as project planning, scheduling, budgeting, and risk management. It also provides an overview of the tools and techniques used to manage projects effectively.

Lessons

- Introduction to Project Management
- Project Planning and Scheduling
- Risk Management
- Cost Estimation and Control
- Quality Assurance and Control
- Project Documentation
- Project Communication
- Project Leadership
- Project Closure
- Project Management Software Tools

After completing this module, students will be able to:

- Understand the fundamentals of project management and how to apply them to AVEVA E3D projects.
- Develop a project plan and timeline for AVEVA E3D projects.
- Utilize project management tools and techniques to manage AVEVA E3D projects.
- Monitor and control AVEVA E3D projects to ensure successful completion.

Module 11: Customization and Automation

Module 11 of the AVEVA E3D course focuses on customizing and automating the software. It covers topics such as creating custom commands, automating tasks, and creating custom scripts. It also covers topics such as creating custom menus, customizing the user interface, and creating custom macros. This module provides the skills necessary to customize and automate the software to meet specific needs.

Lessons

- Introduction to Customization and Automation in AVEVA E3D
- Automating Design Processes with AVEVA E3D
- Customizing AVEVA E3D for Improved Efficiency
- Creating Custom Reports with AVEVA E3D
- Automating Data Exchange with AVEVA E3D
- Automating Drawing Production with AVEVA E3D
- Automating Modeling with AVEVA E3D
- Automating Isometric Production with AVEVA E3D
- Automating Bill of Materials with AVEVA E3D
- Automating Clash Detection with AVEVA E3D
- Automating Design Reviews with AVEVA E3D
- Automating Quality Assurance with AVEVA E3D
- Automating Change Management with AVEVA E3D
- Automating Documentation with AVEVA E3D
- Automating Project Management with AVEVA E3D

After completing this module, students will be able to:

- Understand the customization and automation capabilities of AVEVA E3D.
- Create custom macros and scripts to automate repetitive tasks.
- Utilize the AVEVA E3D API to create custom applications.
- Develop custom reports and dashboards to monitor project progress.

Module 12: Advanced Topics in AVEVA E3D

Module 12: Advanced Topics in AVEVA E3D is a comprehensive course designed to provide students with an in-depth understanding of the advanced features of AVEVA E3D. Topics covered include advanced 3D modeling techniques, advanced piping and equipment modeling, advanced clash detection, and advanced project management. This module also covers the use of AVEVA E3D in the context of a project, including the use of AVEVA E3D in the design and construction of a plant.

Lessons

- Advanced Modeling Techniques in AVEVA E3D
- Advanced Piping Design in AVEVA E3D
- Advanced Structural Design in AVEVA E3D
- Advanced Electrical Design in AVEVA E3D
- Advanced Instrumentation Design in AVEVA E3D
- Advanced HVAC Design in AVEVA E3D
- Advanced Plant Layout Design in AVEVA E3D
- Advanced Isometric Drawing in AVEVA E3D
- Advanced Bill of Materials in AVEVA E3D
- Advanced Clash Detection in AVEVA E3D
- Advanced Visualization in AVEVA E3D
- Advanced Data Management in AVEVA E3D
- Advanced Automation in AVEVA E3D
- Advanced Reporting in AVEVA E3D
- Advanced Customization in AVEVA E3D

After completing this module, students will be able to:

- Understand the principles of advanced 3D modelling techniques such as Boolean operations, advanced surface modelling, and advanced solid modelling.
- Create complex 3D models using advanced modelling techniques.
- Utilize the advanced features of AVEVA E3D to create and manage complex 3D models.
- Develop a comprehensive understanding of the AVEVA E3D software and its capabilities.