multisoft
Systems

Digital Twin & AI Integration for SPPID Professionals Training

COURSE CONTENT

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About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

Digital Twin & AI Integration for SPPID Professionals Training by Multisoft Systems is designed to help plant engineers, designers, and technical professionals enhance their capabilities in modern digital engineering environments. The course focuses on integrating Digital Twin technology and Artificial Intelligence with SmartPlant P&ID (SPPID) workflows to improve plant design accuracy, asset intelligence, and operational efficiency.

Module 1: Digital Twin Fundamentals for Process Plants

- ✓ Evolution from 3D Model to Intelligent Digital Twin
- ✓ Digital Twin vs Digital Thread vs BIM
- ✓ Role of Digital Twin in EPC and Owner-Operator lifecycle
- ✓ Integration of Engineering Data with Operations
- ✓ Industry 4.0 in Oil & Gas, Power, Petrochemical

Module 2: Deep Dive into SPPID Data Structure

- ✓ SPPID Database architecture
- ✓ Tag management, line lists, instrument index
- ✓ Engineering data relationships in SPPID
- ✓ Extracting intelligent data from SPPID
- ✓ Linking SPPID with Smart 3D and Engineering Tools

Module 3: Digital Twin Architecture in Plant Engineering

- ✓ Physical asset → IoT sensors → Digital representation
- ✓ Data integration from DCS, SCADA, ERP
- ✓ Real-time synchronization methods
- ✓ Cloud vs On-Prem deployment
- ✓ OPC-UA, MQTT for industrial data communication

Module 4: AI & Machine Learning for Process Plants

- ✓ AI fundamentals for engineers (non-coding overview)
- ✓ Predictive Maintenance for rotating equipment
- ✓ Anomaly detection using AI models
- ✓ ML algorithms for process optimization
- ✓ AI-based risk and failure prediction

Module 5: Integrating SPPID with Digital Twin Platforms

- ✓ Connecting SPPID engineering data to Digital Twin platforms
- ✓ Data extraction & APIs
- ✓ Integration with AVEVA and Hexagon ecosystems
- ✓ Workflow automation
- ✓ Use case: Intelligent P&ID connected to live plant data

Module 6: Advanced Analytics & Predictive Engineering

- ✓ Time-series data analytics
- ✓ Simulation-driven decision support
- ✓ Real-time KPI monitoring
- ✓ Failure Mode & Effect Analysis (FMEA) with AI
- ✓ What-if analysis and scenario modeling?

Module 7: Implementation Roadmap for EPC Companies

- ✓ Building Digital Twin from FEED stage
- ✓ Data governance strategy
- ✓ Cybersecurity in Digital Twin
- ✓ ROI analysis and business case building
- ✓ Change management in engineering teams

Module 8: Capstone Project

- ✓ Build a conceptual Digital Twin architecture for a process unit
- ✓ Define AI use case (e.g., predictive pump failure)
- ✓ Map SPPID data with live telemetry
- ✓ Design dashboard for performance tracking