MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

FUNDAMENTALS OF DIGITAL TWINS

"Bridge the Physical and Digital Worlds with Real-Time, Intelligent Simulations."

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

The Fundamentals of Digital Twins course provides a practical and conceptual foundation for understanding and implementing digital twin technologies. Digital twins—virtual replicas of physical assets or systems—are transforming operations across manufacturing, infrastructure, energy, and more. Participants will learn how to design, deploy, and manage digital twins for enhanced performance monitoring, predictive maintenance, and real-time decision-making.

Objectives

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

- Define what a digital twin is and how it differs from similar technologies
- Understand the components and architecture of digital twin systems
- Identify use cases and value propositions across industries
- Design and plan the implementation of basic digital twin models
- Leverage digital twins for simulation, prediction, and optimization

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Why Attend

As digital twins become essential in Industry 4.0 and smart operations, this course offers an early mover advantage. It equips participants with the knowledge to conceptualize and lead digital twin initiatives within their organizations.

Target Audience

- Engineers and Plant Operators
- IT and OT (Operational Technology) Professionals
- Digital Transformation Officers
- Asset Managers and Maintenance Leads
- Data Scientists and Systems Integrators

Individual Benefits

- Develop in-demand skills in an emerging, high-growth technology
- Learn to integrate IoT, AI, and simulation into operations
- Enhance capabilities in monitoring, analysis, and predictive modeling
- Build a foundation for advanced digital twin specialization

Organizational Benefits

- Improve asset visibility, uptime, and lifecycle management
- Enable data-driven decision-making with real-time insights
- Reduce costs through predictive maintenance and optimization
- Drive innovation in design, manufacturing, and operations

Instructional Methodology

- Technical lectures and architecture walkthroughs
- Industry case studies and demonstration platforms
- Hands-on exercises using sample datasets and twin models
- Group workshops for twin strategy and roadmap planning

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Course Outline

DETAILED 5-DAY COURSE OUTLINE (CUSTOMIZABLE)

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee Breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Introduction to Digital Twins

- Module 1: What is a Digital Twin? Concepts & Evolution (07:30 – 09:30)
- Module 2: Types of Digital Twins – Component, Asset, System, Process (09:45 – 11:15)
- Module 3: Key Technologies Enabling Digital Twins (IoT, AI, Cloud) (11:30 – 01:00)
- Module 4: Industry Use Cases: Oil & Gas, Manufacturing, Smart Cities (02:00 – 03:30)

Day 2: Digital Twin Architecture & Design

- Module 1: Digital Twin Frameworks and Models (07:30 – 09:30)
- Module 2: Data Sources – Sensors, SCADA, ERP, Edge Devices (09:45 – 11:15)
- Module 3: Twin Integration with Simulation Tools & Dashboards (11:30 – 01:00)
- Module 4: Workshop: Mapping Physical to Digital Entities (02:00 – 03:30)

Day 3: Real-Time Monitoring & Predictive Capabilities

- Module 1: Data Collection, Processing & Visualization (07:30 – 09:30)
- Module 2: Using AI/ML in Twins – Anomaly Detection & Forecasting (09:45 – 11:15)
- Module 3: Building Feedback Loops Between Physical and Digital (11:30 – 01:00)
- Module 4: Hands-On Lab: Twin Simulation and Alerting (02:00 – 03:30)

Day 4: Deployment, Security, and Interoperability

- Module 1: Edge vs. Cloud-Based Digital Twin Deployments (07:30 – 09:30)
- Module 2: Cybersecurity and Data Integrity in Twin Systems (09:45 – 11:15)
- Module 3: Standards, Protocols & Interoperability (OPC UA, MQTT) (11:30 – 01:00)
- Module 4: Group Activity: Planning a Twin Deployment (02:00 – 03:30)

Day 5: Strategy, ROI & Future Trends

- Module 1: Creating a Digital Twin Strategy & Roadmap (07:30 – 09:30)
- Module 2: Measuring Value and KPIs – Cost, Downtime, Uptime (09:45 – 11:15)
- Module 3: Emerging Trends – Metaverse, Hybrid Twins, AIOps (11:30 – 01:00)
- Module 4: Final Presentations, Q&A, and Certification Wrap-Up (02:00 – 03:30)

Certification

Participants will receive a Certificate in Fundamentals of Digital Twins upon successful completion of all modules and practical exercises. This certification validates the foundational skills needed to conceptualize and apply digital twin technology across real-world applications.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

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