

Digital Twin & Simulation Technologies

COURSE OVERVIEW

This course explores the principles and applications of Digital Twin and simulation technologies in industrial and business environments. The curriculum covers digital twin modelling, simulation techniques, integration with IoT and AI, and real-time analytics to support decision-making, predictive maintenance, and operational efficiency. Participants will learn how virtual replicas of physical assets, systems, and processes use real-time data to replicate behavior, optimize performance, and predict future outcomes.

WHO SHOULD ATTEND?

This course is ideal for engineers, data analysts, system designers, and technology managers involved in manufacturing, industrial automation, smart infrastructure, and digital transformation initiatives seeking to leverage digital twins and simulations for enhanced asset management and process optimization.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Understand digital twin concepts and architecture for virtual representation of physical systems.
- Develop and implement simulation models to analyze and optimize industrial processes.
- Utilize real-time data streams for condition monitoring and predictive maintenance.
- Integrate digital twins with IoT sensors, cloud computing, and AI analytics.
- Apply digital twin technology for smart factory optimization, product development, and lifecycle management.
- Use simulation for operator training, risk assessment, and decision support.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- The basics of digital twin technology and simulation methods.
- Role of data acquisition and sensor integration for real-time modelling.
- AI and machine learning techniques in enhancing digital twin predictions.
- Practical case studies of digital twin deployment in manufacturing, smart cities, and energy sectors.
- Visualization technologies including AR/VR for immersive simulation experiences.
- Operational benefits such as predictive maintenance, quality management, and process optimization.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.

1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded