Fundamentals of Industry 4.0

FESTO

Level 1

The **Fundamentals of Industry 4.0** certification introduces learners to the fourth industrial revolution and the digital transformation of manufacturing and production systems. Students gain foundational knowledge about cyber-physical systems, smart factories, automation, data analytics, and emerging digital and biological technologies impacting the future of industry. Learners explore historical industrial shifts and gain perspective on how interconnected systems, automation, and data integration shape modern manufacturing. This certification is ideal for students entering manufacturing, engineering, information technology, or related pathways, and it emphasizes the integration of technology and industry-driven innovation.

Industry Recognized Certification Topics

- History and Evolution of Industrial Revolutions
- Core Concepts of Industry 4.0 and Cyber-Physical Systems
- Smart Factory, Smart Maintenance, and Predictive Technologies
- Internet of Things and Machine-to-Machine Communication
- Automation Pyramid and Hierarchical System Design
- Data Analytics, Big Data, and Cloud Computing
- Human-Robot Collaboration and Safety
- Digital Twins, Digital Shadows, and Simulation
- Definitions and Case Studies of Industry 4.0 Integration

Units -1

Industry Recognized Certification Competencies

- Industrial History and Frameworks
- Terminology and Technology Integration
- Smart Manufacturing Systems
- Automation Pyramid Mapping
- Data, Connectivity, and Decision Making
- Collaborative Robotics and Augmented Intelligence
- Problem Solving through Case Study
- Workforce Awareness and Future Trends