

Level 3: Industry 4.0

Industry 4.0 Description

Smart Factories

Industry 4.0 describes a fundamental change in the world of production. Modern information and communication technologies are merging with classic industrial processes to form so-called cyber-physical systems. Driven by the Internet, the real and virtual world are increasingly growing closer together, creating smarter production factories that no longer need to rely on mass-producing goods for cost savings. A Smart Factory uses smart solutions to incorporate item uniqueness with flexibility, enabling the manufacture of individually configurable products at the cost of mass-produced goods.

Course Topics

- Advanced Product Identification
- Human Machine Interface (HMI)
- Smart Maintenance
- Advanced PLC
- Advanced Robotics
- Cyber-Security

Core Competencies

- Festo's Advanced Industry 4.0 Certification extends beyond the assembly line to encompass the whole value chain and production life cycle such as production, lean production, logistics, and quality assurance. This level provides the advanced theoretical and practical concepts needed for a for a skilled worker to thrive in the modern industrial environment of the future.
- Industry 4.0 means that the tasks to be carried out are becoming more demanding, in both technological and organizational terms. Interdisciplinary competencies are growing in importance, which is why it is necessary to adapt the skills and abilities that are taught for the various trades. As the boundaries between the different functional levels are becoming ever more fluid, the need to adapt affects all technical professions.

Equipment

What does the future of Industry look like?

- Entire production plants will be digitally networked
- Intelligent components with plug-and-produce capability
- The plant has a virtual emulation – this will enable automatic start-up and reconfiguration
- Rapid balancing of capacity utilization in a production network
- Automatic adaptation of production lines to ordering capacities through simple, rapid extension or reduction of the manufacturing facilities
- Simple compensation for defective production units
- Control of production is becoming more intelligent and adaptable
- Automatic start-up and reconfiguration of facilities
- Customer-specific production
- Humans and technology are cooperating to an increasing extent

