



Industry 4.0

Teaching and Learning Environment
SAP University Competence Center Magdeburg

Industry 4.0 Teaching and Learning Environment

In cooperation with its industry partners, SAP UCC Magdeburg has developed various, comprehensive Industry 4.0/IoT teaching and learning environments, which help lecturers demonstrate current key points of digital manufacturing and digital supply chain management. Our flexible system landscape aims at students of engineering as well as business and computer science.

The curricula include an introduction to the complex topic of Internet of Things and present the influences that have led to the Industry 4.0 paradigm. Using practical case studies, students can then generate production orders in an Industry 4.0 landscape and process them virtually or in real life. Different scenarios are available depending on your learning objectives and the training plant used.

Research scenario

Individual scenario

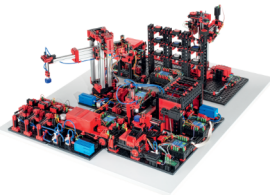


This scenario includes an exclusive Industry 4.0 landscape. Basically, the SAP ME/MII provides and manages production orders for manufacturing plants and can be connected to an SAP S/4HANA client. Using the standardized OPC-UA protocol, various plants, e.g. from FESTO or ETS Didactic, can be connected to SAP ME/MII. This enables educational institutions to integrate individual Industry 4.0 scenarios in teaching and research.

Teaching scenarios

Virtual and physical scenario **fischertechnik**

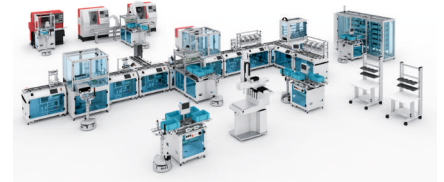
In combination with the fischertechnik factory simulation, this scenario based on the model company Global Bike allows lecturers and students to experience digital processes in cyber-physical systems using a physical miniature manufacturing plant. This setup offers an ideal solution in between a virtual simulation and a full-fledged industry plant.



Physical scenarios

FESTO

In combination with the CP Factory and MES4 from FESTO, this scenario covers comprehensive manufacturing processes. In a modular and flexible teaching system, processes are initiated by an individual production order, handed over to manufacturing until partial or full order confirmation in an ERP system. FESTO's ME system is connected to the sap4school IUS client, which makes this scenario currently available for vocational schools only. In addition, production simulations can be created using FESTO CIROS®.



The CPS-i40® connectedFACTORY from ETS DIDACTIC represents a fully connected and modular production line. Automation standards such as Profinet, Profibus-DP and OPC-UA are used. In combination with SAP ME/MII and a connected sap4school IUS client, a complex process from the entry of a customer order in a web store to manufacturing and delivery can be simulated. This scenario was designed for vocational schools, but can also be used at universities. In addition, simulations can be created using SIEMENS NX.



Services für Lehre, Forschung und Co-Innovation

SAP University Alliances ist ein globales Programm, das über 3.000 Universitäten weltweit kostenlose SAP-Software-Lizenzen für akademische Zwecke zur Verfügung stellt.

Die SAP University Competence Center (SAP UCC) bieten im Rahmen dieses Programms die technische und applikative Unterstützung für den Einsatz der SAP-Technologien in Lehre, Forschung und Co-Innovation an. Darüber hinaus entwickeln und verwalten die SAP UCC Lehrmaterialien zur didaktischen Vermittlung der entsprechenden Technologien. Während das SAP UCC die Verfügbarkeit komplexer Systemlandschaften sicherstellt und die NutzerInnen in deren Anwendung unterstützt, können sich diese auf ihre Kernkompetenzen in Lehre und Forschung konzentrieren.

Durch den Einsatz von praxisnahen Curricula zu aktuellen SAP-Lösungen können Lehrende, Studierende und SchülerInnen ihr volles Potenzial ausschöpfen. Die umfangreichen Lehrmaterialien bestehen aus Präsentationen, Fallstudien und praktischen Übungen.

Kontakt

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