

Courses in English Course Description

Department	09 Engineering and Management
Course title	Cloud Technologies
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	
Prerequisites	none
Recommended reading	
Teaching methods	Lectures in the form of seminars, laboratory tutorials, excursions, team and project work, presentations,
Assessment methods	Module work During the module work, the students need to generate a solution concept for a problem derived from an industrial environment on their own. The problem will consists of the sensor based collection of data, the transport and the storage of the data as well as the corresponding processing. To this end, different usable cloud technologies should be described and a concept generated how the data can be evaluated finally in order to analyze and evaluate the underlying industrial problem. The module work should result in a written document of about 15 pages.
Language of instruction	English
Name of lecturer	Prof. Dr. Hinz, Prof. Dr. Franke
Email	carsten.franke@hm.edu
Link	
Course content	<p>The students will be introduced to modern technologies related tot he following aspects of modern system architectures::</p> <ul style="list-style-type: none">• Scaling of the IT infrastructure to cope with large amounts of sensor data (millions to billions) to build relevant IoT systems.• Properties and application of different data transmission technologies (Ethernet, Wireless, Bluetooth, LoRa, 5G etc.)• Interaction of Fog-/Edge-/Cloudcomputing to solve complex industrial problems• Estimation of communication demands between different solution layers (bandwidth, latencies)• Estimation of the amount of data for different IT setups.• Virtualization and Docker Container Technologies• Different approaches to long term data storage as pre-condition for data analysis• Introduction to Software Product Lines
Remarks	