TECHNISCHE HOCHSCHULE LÜBECK

Module: Process Integration

Level	Master	**Short Name**	PINT
Responsible Lecturers	Töbermann, J.-Christian, Prof. Dr.-Ing.		
Department, Facility	Electrical Engineering and Computer Science		
Course of Studies	Applied Information Technology, Master		
Compulsory/elective	Elective	**ECTS Credit Points**	5
Semester of Studies	2	**Semester Hours per Week**	4
Length (semesters)	1	**Workload (hours)**	150
Frequency	WiSe	**Presence Hours**	60
Teaching Language	English	**Self-Study Hours**	90

The following section is filled only if there is **exactly one** module-concluding exam.

Exam Type	Project Work	**Exam Language**	German/English
Exam Length (minutes)		**Exam Grading System**	One-third Grades
Learning Outcomes	The students: - understand concepts of integrated operation management systems, the digital factory, and in particular for the integration of the automation process level with Manufacturing Execution Systems (MES) and Enterprise Resource Planning (ERP) systems. - understand different systems, system concepts, system architectures and the reasons for each choice - can classify functionalities of an MES system such as production data acquisition, asset management, quality management, detailed production planning and control and can describe and evaluate them in an overall task context - can design and implement IT couplings between MES systems and the automation process level systematically and in a task-oriented manner - have gained first experiences in using industrial MES systems		
Participation Prerequisites			

The previous section is filled only if there is **exactly one** module-concluding exam.

Consideration of Gender and Diversity Issues	✔ Use of gender-neutral language (THL standard) ✔ Target group specific adjustment of didactic methods ✘ Making subject diversity visible (female researchers, cultures etc.)
Applicability	
Remarks	

Module Course: Process Integration (Lecture)

(of Module: Process Integration)

Course Type	Lecture	**Form of Learning**	Presence
Mandatory Attendance	no	**ECTS Credit Points**	3
Participation Limit		**Semester Hours per Week**	3
Group Size		**Workload (hours)**	90
Teaching Language	English	**Presence Hours**	45
Study Achievements ("Studienleistung", SL)		**Self-Study Hours**	45
SL Length (minutes)		**SL Grading System**	

The following section is filled only if there is a course-specific exam.

Exam Type		**Exam Language**	
Exam Length (minutes)		**Exam Grading System**	
Learning Outcomes			
Participation Prerequisites			

The previous section is filled only if there is a course-specific exam.

Contents	- Concepts and variants of integrated operations management and the digital factory - Modules of MES systems and their functionalities - Interface description, design and implementation between automation process level and higher operating levels (MES and ERP)
Literature	Literature will be named in the lecture.
Remarks	

Module Course: Process Integration (Practical Training)

(of Module: Process Integration)

Course Type	Practical Training	**Form of Learning**	Presence
Mandatory Attendance	yes	**ECTS Credit Points**	2
Participation Limit		**Semester Hours per Week**	1
Group Size	12	**Workload (hours)**	60
Teaching Language	English	**Presence Hours**	15
Study Achievements ("Studienleistung", SL)	Practical Training	**Self-Study Hours**	45
SL Length (minutes)		**SL Grading System**	Pass

The following section is filled only if there is a course-specific exam.

Exam Type		**Exam Language**	
Exam Length (minutes)		**Exam Grading System**	
Learning Outcomes			
Participation Prerequisites			

The previous section is filled only if there is a course-specific exam.

Contents	In the practical trainings during the semester, the students apply what they have learned in the lecture to given or self-study topics for selected application scenarios.
Literature	See lecture.
Remarks	