

Module Description IPE PIM

Official data		
Course of studies	Field of study	Specialisation
International Program in Engineering	-	-

Description of model	Language	No. of model	Version	Responsible person of model
Production and Information Management	English	T3IPE003	0001	Dr. R. Medina Serrano
Production and Information Management				

Placement of models on studies			
Semester	Precondition for participation	Type of model	Duration of model
1.	- no formal -	Local Profile Module	1 Semester

Used learning and examination methods			
Teaching and learning methods	Examination performance	Graded yes/no	Duration of examination
Methods: Lecture, Seminar/Group Work, Lab Practice	<ul style="list-style-type: none"> ▪ Exam (written) and/or ▪ Rated Seminar/Lab Practice 	<ul style="list-style-type: none"> ▪ yes 	<ul style="list-style-type: none"> ▪ 90 min

Workload and ECTS			
Workload (per h, a multiple of 30)	In total: (divided in)	150 h	ECTS: 5
	1. Attendance time (lecture and examination time)	54 h	-
	2. self-study	96h	-

Intention of qualifications and competences	
Professional qualifications:	<ul style="list-style-type: none"> - Understanding of the potential and challenges of integration of human, machines, assets and automation components by information technology, especially regarding realization of business processes in companies. - Overview over selected Business-IT-Systems, their usage and benefits – including newest trends (Cloud Computing, Big Data und Mobile Computing). - Know-How regarding existing and upcoming scenarios in production, service management/maintenance and Quality Management/Energy Management including challenges and limits. - Discussion of Key-Performance-Indicator (KPI) models and examples and understanding of the technological and process requirements in current production strategies. - Insights in Case-Studies for interdisciplinary scenarios and transfer into the industrial practice – from the IT view, process view and user view.
Social and ethical competence:	<ul style="list-style-type: none"> - The students experience the value of interdisciplinary and team-oriented thinking, hands-on by definition and implementation of competitive business processes in producing companies.
Personal competence:	<ul style="list-style-type: none"> - Students are enabled to define and develop own creative ideas to solve current complex problems in the industry
Comprehensive professional competence:	<ul style="list-style-type: none"> - Find solution approaches for specific challenges in companies and learn the importance of teamwork and cross-area collaboration to implement and transfer solutions.

Feature
Prerequisites: <ul style="list-style-type: none"> - Basics in computer science/information management and engineering - Principle knowledge of processes in production & logistics

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Learning units and contents			
Teaching and learning units		Attendance time (h)	self-study(h)
(teaching and learning unit 1):	Business Information Systems in Production and Logistics	32	50
English Term:	Business Information Systems in Production and Logistics		
Content (non-binding guideline)			
<ul style="list-style-type: none"> - Basic Concepts in Business Information Management and Business Systems Architecture - Key areas and processes in companies - Overview Production Management - Main Examples of Business Systems in Production & Logistics: ERP, MES, WMS, PLM, Business Intelligence/KPI Management - SAP ERP Practice (PP, SD, MM) 			
Literature			
<ul style="list-style-type: none"> - Schmelzer, H.J., Sesselmann W.: Geschäftsprozessmanagement in der Praxis: Kunden zufrieden stellen, Produktivität steigern, Wert erhöhen, Carl Hanser Verlag - Benz, J.: Logistikprozesse mit SAP, Vieweg + Teubner Verlag - Kletti, J.: Manufacturing Execution System – MES, Springer-Verlag - Schulz, H.-J., Gebhardt, B.: Product Lifecycle Management für die Praxis: Ein Leitfaden zur modularen Einführung, Umsetzung und Anwendung, Springer-Verlag - Bracht, U.; Geckler, D.; Wenzel, S.: Digitale Fabrik: Methoden und Praxisbeispiele (VDI-Buch) 			
(Lehr- und Lerneinheit 2):	Advanced Concepts in Production Management	8	16
English Term:	Advanced Concepts in Production Management		
Content (non-binding guideline)			
<ul style="list-style-type: none"> - Industry 4.0 and Industrial Internet – Introduction and Trends - I40 Application Use Cases (Research Projects & Industry Practice) Examples: Resilient Production, Tracking & Tracing, Augmented Reality, Predictive Maintenance, Demand-Side Energy Management - New Business Models - Lean/Six Sigma/Kaizen & Quality management practices 			
Literature			
<ul style="list-style-type: none"> - Bauernhansl, Thomas, ten Hompel, Michael, Vogel-Heuser, Birgit (Hrsg.) Industrie 4.0 in Produktion, Automatisierung und Logistik (Springer 2014) 			
(Lehr- und Lerneinheit 3):	Interdisciplinary Seminar & Lab Practice	14	30
English Term:	Interdisciplinary Seminar & Lab Practice		
Content (non-binding guideline)			
<ul style="list-style-type: none"> - FIM Lab Seminar - Production & IT - Vertical and Horizontal Information Integration in Manufacturing & Logistics - Practice on ERP, MES, SCADA, Automation - Scenarios & Use Cases in different application areas 			
Literature			
<ul style="list-style-type: none"> - <i>Own Script (Scenario description)</i> - 			