Course of study/ focus of study:	
M.Sc. Produktionstechnik und -management	

Module name / title	Global Customer Processes
Module number	GCP
Module coordinator/ person responsible	Herr Prof. Dr. Henner Gärtner
Duration of the module/ semester/ frequency	1 Semester/ first or second semester/ annually
Credits (CP)/ semester hours per week (SHW)	5 LP/ 3.00 SWS
Type of module , Applicability of the module	Course-specific elective module
Workload	Contact hours: 51 h and Self-study: 99 h (Basis: 17 semester weeks (incl. exam time), 1 SHW = 60 minutes)
Module prerequisites Requirements for participation/ previous knowledge	
Teaching language	Teaching language: English Alternate teaching language: German If there is more than one teaching language, the used teaching language will be announced by the lecturer.
Competencies gained/ Learning Outcome	Steadily increasing competition forces industry to accept customer order in a short term manner. If there is short before the series start a request for change from the customer then this results often in drastic influences on design, production and logistics, because processes are not optimized for these changes. This asks for highly flexible processes and high demands on the knowledge of people and the technology. The students will be able to optimize the processes in a company so that even short term customer specific changes can be handled profitably in the company.The competencies in detail are the ability to: 1) analyse the influence and risk of customer orders on technique, deadline and budget, earnings and the human in the organization. By this also get an insight in basic influences on globalization including ethical questions. 2) design processes with a total process view, i.e., optimizing the whole process rather than its single parts. 3) handle insecure decisions in a badly structured environment 4) use tool of information techniques for process coordination, so that they will we able to define for the humans, organisation, technologies and information systems solutions. 5) chose and apply IoT Tools using examples from technologies like Collaborating Robot, Mikrocontroller, Virtual-/Augmented Reality and Artificial Intelligence in a basic understanding to solve the above challenges. 5) To reach sensibility in the consequencies of technical decision making in products or processes and its influence on inner and outer social structures with emphasis on global environment. This should finally result in a saver social environment of employees.

Content of the module	The lecture focuses on the influence of changes from customers on the total process from customer order over development until series production. 1) Design networks in global context with internal and external customer, supplier relations management. 2) Development of interfaces between design and production with concepts for efficient failure handling and prevention. 3) Risk management for systematic prevention, analysis, conception and control of risks with total process view. This includes the discussion of globalisation aspects. 4) Workflow methods using SAP as information system. 5) Methods to improve the learning efficiency of labour force to handle changed processes. 6) Cooperation with industry management for actual case studies (such as Airbus, Ferchau, Siemens, Jungheinrich) 7) Laboratory-Cases to get basic understanding of the IoT-Tools like Collaborating Robot, Mikrocontroller, Virtual-/Augmented Reality and Artificial Intelligence. Students will get help to do first steps and get basic understanding with assistance and self guided learning.
Requirements for the award of credit points **(Study and exam requirements)**	Regular form of examination: written exam (graded) Alternative forms: oral exam (graded), portfolio assessment (graded) Laboratories: certification (not graded) Where more than one possible examination type is listed, the lecturer specifies the form of examination at the start of the course.
Learning and teaching types/ methods/ media types	Powerpoint-Presentation with beamer, slides and blackboard. E-Learning using Internet-Courses and self-guided learning techniques.
Literature	Aalst, W. (2004): Workflow Management, MIT Press (März 2004) Gleißner, W. (2005): Risikomanagement. Mit CD-ROM, Umsetzung, Werkzeuge, Risikobewertung, Haufe (Mai 2005) Isenberg, Randolf (2011): International aspects of knowledge management and its sustainability in the quality function. In Paul Young, John Geraghty (Eds.): IMC28 - Manufacturing Sustainability. International Manufacturing Conference IMC28. Dublin, 30.8.11 bis 1.9.11. Dublin City University. Isenberg, Randolf; Riesselmann, Julia (2009): Sustainable structure for knowledge management in the quality department. In Garret O'Donnell, Kevin Kelly (Eds.): International Manufacturing Conference IMC26. Energy Efficient & Low Carbon Manufacturing. Trinity College Dublin. Isenberg, R. (2005): The customer gating concept to deal with late changes in product development accepted for publication at The International Manufacturing Conference (IMC 22) - Challenges Facing Manufacturing # The Institute of Technology Tallaght, Dublin (31st August to the 2nd September 2005) Isenberg, Randolf (2002): Wege zur prozeßorientierten Arbeitsvorbereitung, Workshop: Moderne Aufbau- und Ablauforganisation - Wo steht die Arbeitsvorbereitung?, NORTEC2002, Hamburg 24.1.2002 Vogel-Heuser, B. , Bauernhansl, T., ten Hompel, M. (2017): Handbuch Industrie 4.0 Bd. 1 Produktion, 2te Auflage, (Springer Reference Technik), 27.1.2017