Modulbeschreibung

Module no./code	IMA_5.3.3
Module title	Future Cars and new Automotive Processes
Courses in the module, if applicable	
Content	• Scientific investigation of a selected topic • Key issues in the automotive industry: - CO2 reduction and following concepts as e-mobility, hydrogen cars, hybrid vehicles and new concept studies - Resource efficiency - Role of mobility in urbanized areas • Global processes and players in the automotive world • Theory and praxis in the targets for CO2 reduction • New partners and competitors for new cars and processes • New business models for new mobility cycles e.g. autonomous driving • Teamwork also with students from lower semesters
Learning outcomes	In this module the participants will gain basics and deeper insights into the tasks and processes involved in future cars and new automotive processes. Using practical cases, knowledge and methods of demand new car technics and new processes in a company. The management topics for new car and process strategies for all company processes belong to these IT-systems oriented subjects. Students are to understand the basics of new cars and processes as an academic subject, know the basic principles and be able to analyse new technologies for cars and automotive processes based on specific criteria. Students will apply the contents of the course in practical case studies and thus understand and adhere to the requirements of academic work. The students will: • be able to understand the role of new cars and processes in a company and describe them by means of their development, business, production and service perspective • be able to understand the most important processes for decisions of new car and processes introductions and see them in context to all processes in a company • be able to comprehend new car and processes strategies and assess them as to their alignment to the corporate strategy • be able to analyse and assess new car and processes concepts and make proposals on how to improve them • be able to assess and prioritize new car and process project portfolios

	• be able to structure new cars / processes and there tasks with IT resources to implement new systems into a company
Semester (or trimester)	5th semester
Duration	1 semester
Frequency	Each semester
ECTS credits	5 ECTS Credits
Workload	• Total: 150h • Participation in courses: 45h • Self-study: 105h
Type of module (compulsory, optional, etc.)	Elective module, depends on students‘ selection
Applicability of the module	Other technical or business studies with IT Management
Prerequisites for participation	Recommended courses: • Automotive Development Processes • Basic courses of car and IT technic sciences
Person responsible for module	Prof. Dipl. Ing. Manfred Plechaty
Name of teacher	Prof. Dipl. Ing. Manfred Plechaty
Language of instruction	English / German
Type of examination / requirement for receiving credits	Written report (min. 10 pages without pictures) and 10 min. presentation with following discussion
Weighting in overall examination grade	2,4%
Teaching and learning methods	• Lecture / presentation • Case studies / experimental studies Media: • projector, whiteboard, flip chart, walls • newspaper and online articles Teaching material: • lecture script • Matlab/Simulink • Hardware, experimental studies • Prototypes of new mobility concepts • autonomous model cars
Special features (online component, visits to companies, guest lectures, etc.)	
Reading list (required reading / additional recommended reading)	Mandatory:

	• Markus Maurer, J.Christian Gerdes, Barbara Lenz, Hermann Winner, Autonomes Fahren, Springer Open, ISBN 978-3-662-45854-9 • E. Hofmann, Advanced Purchasing & SCM, St. Gallen, Schweiz, Springer Verlag, ISBN 978-3-662-45520-3 Recommended: • KPMG International, Survey of Corporate Responsibility Report, Zürich 2013 • Eigner, M.; Ovtcharova, J.: Produktentstehung im 21. Jahrhundert, Anforderungen an die IT für die Konstruktion der Zukunft, Digital Ing. Magazin 2007 • Hans-Hermann Braess, Ulrich Seiffert: Vieweg Handbuch Kraftfahrzeugtechnik: (ATZ/MTZ-Fachbuch). 7 Auflage. Springer Vieweg, 2013, ISBN 978-3658016906