



Modulbeschreibung

Studiengang	Embedded Systems for Mechatronics
Modulname	Mechatronic Systems Engineering
Abkürzung	MSE
Sprache	
- Unterricht	englisch
- Prüfung	englisch
- Literatur	englisch
Semester/Art z.B. 3. Fachsemester (Wintersemester) / Blockwochenangebot	SoSe 18
Dozent/Ansprechpartner	Prof. Dr. Stefan Henkler
E-Mail	stefan.henkler@fh-dortmund.de
Lernziel	<p>Knowledge:</p> <ul style="list-style-type: none"> - Knows CONSENS, INCOSE SE handbook, MechatronicUML - Knows mechatronic systems engineering processes - Knows Enterprise Architect and other relevant tools <p>Skills:</p> <ul style="list-style-type: none"> - Can model mechatronic systems - Can apply methodology and state of the art tools on real use cases (e.g. printing machine) - Can select tools and define tool chains and design flows <p>Competence - attitude:</p> <ul style="list-style-type: none"> - Can structure the early phase of mechatronic systems design - Can lead cross domain design of mechatronic systems - Understands issues from different domains and can integrate solutions into a holistic design
Inhalt	<p>Mechatronics Systems Engineering is both a challenge and a chance. A holistic and well elaborated engineering process for complex mechatronic system/cyber physical systems is a mandatory requirement for developing future intelligent products. Teaching this new school of engineering is the major goal of the whole master programme and an attractive offer for a university of applied sciences. This module introduces the holistic engineering methodology and offers the big picture for the other modules. The focus is on the early phase of mechatronic systems design since this phase offers the biggest leverage for better technical systems. Topics like cross domain engineering and systems integration are addressed, too. The content of the course is largely inspired from finding of the BMBF Spitzencluster "it's OWL" and the new Fraunhofer Institute "Entwurfstechnik Mechatronik". A continuous transfer of new findings into this course is intended.</p>
Maximale Teilnehmeranzahl	50



Voraussetzungen nach Prüfungsordnung	mechanics/physics, basics of embedded systems Requires: MOD204 Control Theory and Systems MOD103 Embedded Software Engineering
Empfohlene Voraussetzungen	SysML, UML
Lehrform /Umfang	Lectures, Labs (with Enterprise Architect and other tools), homework Access to tools and tool tutorials Access to recent research papers
Arbeitsaufwand	180 h
Art der Prüfung	Written Exam at the end of the course (50%) and individual homework (50%): MechatronicUML model of an example
Leistungspunkte	6 credits
Verwendbarkeit <small>(Wird durch die RMS eingefügt!)</small>	-
Vorbereitungsphase	-
Nachbereitungsphase	-
Literatur/Ressourcen	Jürgen Gausemeier, Franz Rammig, Wilhelm Schäfer (Editors): Self-optimizing Mechatronic Systems: Design the Future. HNI-Verlagsschriftenreihe, Band 223, 2008 P.L. Tarr, A.L. Wolf (eds.): Engineering of Software. Springer-Verlag Berlin Heidelberg 2011