Curriculum (CAME) 08.08.2019

Study branch: Conception of Machines

Den Studierenden im Masterstudiengang Computer Aided Conception and Production in Mechanical Engineering wird im Rahmen einer studiengangsspezifischen Informationsveranstaltung empfohlen, sich bereits im ersten Semester für eine der beiden Vertiefungsrichtungen Production oder Conception zu entscheiden, um das Studium in Regelstudienzeit erfolgreich abschließen zu können. Zusätzlich wird den Studierenden empfohlen nach Ankunft und Immatrikulation den Kontakt mit dem jeweiligen Studierendenberater bzw. Mentoren aufzunehmen, um Einzelgespräche hinsichtlich der Studiengangsplanung zu vereinbaren.

Module	CP	WS			SS			WS			SS			SWS
		L	E	P	L	E	P	L	E	P	L	E	P	
Compulsory Courses														
Numerical Methods in Mechanical Engineering	7	3	2											5
Advanced Finite Element Methods	5	2	2											4
Advanced Software Engineering	5	2	2											4
Continuum Mechanics	5				2	2								4
Multibody Dynamics	5				2	2								4
Nonlinear Structural Mechanics	5				2	2								4
Failure of Structures and Structural Elements	5				2	1								3
Computational Fluid Dynamics I & II*	7				2	1		1	1					5
Simulation of Discrete Event Systems	5							2	2					4
Machine Design Process and Practical Applications of Computer-Aided Engineering Tools	7							2	2	1				5
Total Compulsory Courses	**56**	17			24			15						
Elective Courses - 20 CP to be taken														
Practical Introduction to FEM-Software I	5	1		2										3
Mechatronics and Control Techniques for Production Plants	5	2	2											4
Fundamentals of Light Weight Design	4	2	1											3
Tensor Algebra and Tensor Analysis for Engineering Students I	5	2	2											4
Tensor Algebra and Tensor Analysis for Engineering Students II	5				2	2								4
Finite Element Methods in Lightweight Design	5				2	1								3
Welding and Joining Technologies	5				2	2								4
Practical Introduction to FEM-Software II	5				1		2							3
Modeling, Model Reduction and Simulation in Laser Processing - Laser	5				2	2								4
Modeling, Model Reduction and Simulation in Laser Processing - Design	5				2	2								4
Reliable Simulation in the Mechanics of Materials and Structures	6				2	2								4
Machine Dynamics of Rigid Systems	6				2	2								4
Mechanics of Engineering Materials	5				2	1								3
Micro- and Macrosimulation of Casting Processes	4							2	1					3
Modeling, Model Reduction and Simulation in Laser Processing - Applications	5							2	2					4
Selected Topics of Inelasticity Theory	6							2	2					4
Molecular Mechanics and Multi-Scale Modelling of Materials	5							2	2					4
Mechanics of Forming Processes	5							2	2					4
Total Elective Courses	**20**													
German Language Course	6	2	2											4
Mini Thesis	9								260 h					
Industrial Internship	9										9 weeks			
Master Thesis	20										4 months			
Total	**120**													

Study branch: Production of Machines

Den Studierenden im Masterstudiengang Computer Aided Conception and Production in Mechanical Engineering wird im Rahmen einer studiengangsspezifischen Informationsveranstaltung empfohlen, sich bereits im ersten Semester für eine der beiden Vertiefungsrichtungen Production oder Conception zu entscheiden, um das Studium in Regelstudienzeit erfolgreich abschließen zu können. Zusätzlich wird den Studierenden empfohlen nach Ankunft und Immatrikulation den Kontakt mit dem jeweiligen Studierendenberater bzw. Mentoren aufzunehmen, um Einzelgespräche hinsichtlich der Studiengangsplanung zu vereinbaren.

Module	CP	WS			SS			WS			SS			SWS
		L	E	P	L	E	P	L	E	P	L	E	P	
Compulsory Courses														
Advanced Finite Element Methods	5	2	2											4
Numerical Methods in Mechanical Engineering	7	3	2											5
Advanced Software Engineering	5	2	2											4
Continuum Mechanics	5				2	2								4
Multibody Dynamics	5				2	2								4
Computational Fluid Dynamics I & II*	7				2	1		1	1					5
Simulation of Discrete Event Systems	5							2	2					4
Quality Management	5							2	2					4
Simulation Techniques in Manufacturing Technology	5							2	1					3
Production Management A	5							2	2					4
Total Compulsory Courses	**54**	17			14			23						
Elective Courses - 22 CP are to be taken														
Mechatronics and Control Techniques for Production Plants	5	2	2											4
Practical Introduction to FEM-Software I	5	1		2										3
Control Engineering	3	2	2											4
Machine Tools	5	2	2											4
Manufacturing Technology I	5	2	2											4
Industrial Engineering and Ergonomics	5	2	2											4
Manufacturing Technology II	5				2	2								4
Production Metrology	5				2	2								4
Computational Modeling of Membranes and Shells	5				2	1								3
Welding and Joining Technologies	5				2	2								4
Finite Element Methods in Lightweight Design	5				2	1								3
Practical Introduction to FEM-Software II	5				1		2							3
Modeling, Model Reduction and Simulation in Laser Processing - Laser	5				2	2								4
Modeling, Model Reduction and Simulation in Laser Processing - Design	5				2	2								4
Reliable Simulation in the Mechanics of Materials and Structures	6				2	2								4
Mechanics of Engineering Materials	5				2	1								3
Micro- and Macrosimulation of Casting Processes	4							2	1					3
Modeling, Model Reduction and Simulation in Laser Processsing - Applications	5							2	2					4
Selected Topics of Inelasticity Theory	6							2	2					4
Molecular Mechanics and Multi-Scale Modelling of Materials	5							2	2					4
Mechanics of Forming Processes	5							2	2					4
Total Elective Courses	**22**													
German Language Course	6	2	2											4
Mini Thesis	9								260 h					
Industrial Internship	9										9 weeks			
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Total	**120**													