

Masterstudiengang Computer Aided Conception and Production in Mechanical Engineering an

PO 2012
01.09.2021

Production

Compulsory Courses										
Responsible for Module	Lecturers	Module	CP	L	P/L	Σ SWS	Summer / Winter	Module ID	Σ CP	Σ SWS
Itskov	Itskov	Advanced Finite Element Methods for Engineers	5	2	2	4	w	4013866	58	42
Jeschke, S.	Jeschke, S.	Advanced Software Engineering	5	2	2	4	w	4011468		
Markert	Markert	Mechanik poröser Medien	6	2	2	4	s	4010870		
N.N.	N.N.	Simulation of Discrete Event Systems	5	2	2	4	s	4011437		
Abel	Abel	Control Engineering	3	2	2	2	w	4011476		
Itskov	Itskov / Schmid	Continuum Mechanics	6	2	2	4	s	4013360		
Schmitt	Schmitt	Quality Management	6	2	2	4	w	4011453		
Corves	Corves	Multibody Dynamics	5	2	2	4	s	4011462		
Ban	Ban	Numerical Methods in Mechanical Engineering	7	3	2	5	w	4011449		
Schuh	Schuh	Production Management A	5	2	2	4	w	4011477		
N.N.	N.N.	Simulation Techniques in Manufacturing Technology	5	2	1	3	w	4012413		
N.N.	N.N.	German Language Course	6	2	0	2	sw	4013375	45	
Brecher	Brecher	Mini Thesis	9	0	0	260		4014344		
		Industrial Internship	9			9 weeks	sw			
RWTH		Master Thesis	30			6 months	sw			

* Technical English

** If not proficient/ native speaker

Elective Courses										
Responsible for Module	Lecturers	Module	CP	L	P/L	Σ SWS	Summer / Winter	Module ID	Σ CP	Σ SWS
Brecher	Brecher	Mechatronics and Control Techniques for Production Plants	5	2	2	4	w	4011451	24	*
Schröder	Schröder / Meinke	Computational Fluid Dynamics I	4	2	1	3	s	4012278		
Schröder	Schröder / Meinke	Computational Fluid Dynamics II	3	1	1	2	w	4012279		
Sauer	Sauer	Computational Modeling of Membranes and Shells	5	2	1	3	s	4012293		
Brecher	Brecher	Machine Tools	5	2	2	4	w	4011460		
N.N.	N.N.	Industrial Engineering and Ergonomics	5	2	2	4	w	4014442		
Klocke	Klocke	Manufacturing Technology I	5	2	2	4	w	4011458		
Klocke	Klocke	Manufacturing Technology II	5	2	2	4	s	4011447		
Schulz	Schulz	Modeling, Model Reduction and Simulation in Laser Processing - Laser	5	2	2	4	w/s	4013863		
Schulz	Schulz	Modelling, Model Reduction and Simulation in Lasers Processing - Design	5	2	2	4	s	4013860		
Schulz	Schulz	Modeling, Model Reduction and Simulation in Laser Processing - Applications	5	2	2	4	w/s	4013864		
Markert	Markert	Molecular Mechanics and Multiscale Modelling of Materials	5	2	2	4	w	4011511		
Itskov	Itskov	Practical Introduction to FEM-Software I	5	1	2	3	w	4012292		
Itskov	Itskov	Practical Introduction to FEM-Software II	5	1	2	3	s	4011498		
Schmitt	Schmitt	Production Metrology	5	2	2	4	s	4011467		
Schröder	Schröder	Finite Element Methods in Lightweight Design	5	2	1	3	s	4011464		
Heider / Markert	Heider / Markert	Reliable Simulation in the Mechanics of Materials and Structures	6	2	2	4	s	4011496		
Simon	Simon	Mechanics of Engineering Materials	5	2	1	3	s	4011448		
Bührig-Polaczek	Bührig-Polaczek	Micro- and Macrosimulation of Casting Processes	4	2	1	3	w/s	5212763		
N.N.	N.N.	Selected Topics of Inelasticity Theory	5	2	2	4	w	4013374		
Markert	Markert	Mechanics of Forming Processes	5	2	2	4	w	4011512		
Reisgen	Reisgen	Welding and Joining Technologies	5	2	2	4	s	4011441		

* The total amount of weekly contact hours (SWS) depends on the modules selected.

Conception of Machines

Compulsory Courses										
Responsible for Module	Lecturers	Module	CP	L	P/L	Σ SWS	Summer / Winter	Module ID	Σ CP	Σ SWS
Itskov	Itskov	Advanced Finite Element Methods for Engineers	5	2	2	4	w	4013866	59	42
Jeschke, S.	Jeschke, S.	Advanced Software Engineering	5	2	2	4	w	4011468		
Markert	Markert	Mechanik poröser Medien	6	2	2	4	s	4010870		
N.N.	N.N.	Simulation of Discrete Event Systems	5	2	2	4	s	4011437		
Abel	Abel	Control Engineering	3	2	2	2	w	4011476		
Itskov	Itskov / Schmid	Continuum Mechanics	6	2	2	4	s	4013360		
Hachemi	Hachemi	Failure of Structures and Structural Elements	5	2	1	3	s	4011486		
Corves	Corves	Multibody Dynamics	5	2	2	4	s	4011462		
Schmidt	Schmidt	Nonlinear Structural Mechanics	5	2	1	3	s	4012290		
Feldhusen	Feldhusen	Machine Design Process and Practical Applications of CAET	7	2	3	5	w	4011469		
Ban	Ban	Numerical Methods in Mechanical Engineering	7	3	2	5	w	4011449		
N.N.	N.N.	German Language Course	6	2	0	2	sw	4013375	45	
Brecher	Brecher	Mini Thesis	9	0	0	260		4014344		
		Industrial Internship	9			9 weeks	sw			
RWTH		Master Thesis	30			6 months	sw			

* Technical English

** If not proficient/ native speaker

Elective Courses										
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Responsible for Module	Lecturers	Module	CP	L	P/L	Σ SWS	Summer / Winter	Module ID	Σ CP	Σ SWS
Schröder	Schröder / Meinke	Computational Fluid Dynamics II	3	1	1	2	w	4012279	23	•
Reisgen	Reisgen	Welding and Joining Technologies	5	2	2	4	s	4011441		
Brecher	Brecher	Mechatronics and Control Techniques for Production Plants	5	2	2	4	w	4011451		
Schröder	Schröder	Finite Element Methods in Lightweight Design	5	2	1	3	s	4011464		
Schröder	Schröder	Fundamentals of Lightweight Design	5	2	2	4	w	4011452		
Bührig-Polaczek	Bührig-Polaczek	Micro- and Macrosimulation of Casting Processes	4	2	1	3	w/s	5212763		
N.N.	N.N.	Selected Topics of Inelasticity Theory	5	2	2	4	w	4013374		
Schulz	Schulz	Modeling, Model Reduction and Simulation in Laser Processing - Laser	5	2	2	4	w/s	4013863		
Schulz	Schulz	Modelling, Model Reduction and Simulation in Lasers Processing - Design	5	2	2	4	s	4013860		
Schulz	Schulz	Modeling, Model Reduction and Simulation in Laser Processing - Applications	5	2	2	4	w/s	4013864		
Hüsing	Hüsing	Machine Dynamics of Rigid Systems	6	2	2	4	s	4017428		
Simon	Simon	Mechanics of Engineering Materials	5	2	1	3	s	4011448		
Markert	Markert	Molecular Mechanics and Multiscale Modelling of Materials	5	2	2	4	w	4011511		
Markert	Markert	Mechanics of Forming Processes	5	2	2	4	w	4011512		
Itskov	Itskov	Practical Introduction to FEM-Software I	5	1	2	3	w	4012292		
Itskov	Itskov	Practical Introduction to FEM-Software II	5	1	2	3	s	4011498		
Heider / Markert	Heider / Markert	Reliable Simulation in the Mechanics of Materials and Structures	6	2	2	4	s	4011496		
Itskov	Itskov	Tensor Algebra and Tensor Analysis for Engineers I	6	2	2	4	w	4012288		
Itskov	Itskov	Tensor Algebra and Tensor Analysis for Engineers II	5	2	2	4	s	4012289		

* The total amount of weekly contact hours (SWS) depends on the modules selected.