

## Masterstudiengang Computer Aided Conception and Production in Mechanical Engineering an

PO 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	53	38
Jeschke, S.	Jeschke, S.	Advanced Software Engineering	5	2	2	4	w	4011468		
Schröder	Schröder / Meinke	Computational Fluid Dynamics I	4	2	1	3	s	4012278		
Markert	Markert	Computational Intelligence in Engineering	5	2	1	3	w	4021493		
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.	Language Course (1) *	2	1	1	2	sw	4021266		
N.N.	N.N.	Language Course (2) *	2	1	1	2	sw	4021267		
N.N.	N.N.	Linguistic Elective **	2	1	1	2	sw	4024418		
Brecher	Brecher	Mini Thesis	9	0	0	260		4014344		
		or 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
Stoffel	Stoffel	Artificial Neural Networks in Structural Mechanics	6	2	2	4	w	4021387	24	*
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		
Abel	Abel	Control Engineering	5	2	1	3	w	4011476		
N.N.	N.N.	Industrial Engineering and Ergonomics	5	2	2	4	w	4014442		
Markert	Markert	Intelligent Monitoring of Engineering Systems	5	2	1	3	s	4021494		
Klocke	Klocke	Manufacturing Technology I	5	2	2	4	w	4011458		
Schulz	Schulz	Modelling, Model Reduction and Simulation in Laser Processing	5	2	2	4	s	4013861		
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		
N.N.	N.N.	Simulation of Discrete Event Systems	5	2	2	4	s	4011437		

\* 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	53	37
Jeschke, S.	Jeschke, S.	Advanced Software Engineering	5	2	2	4	w	4011468		
Stoffel	Stoffel	Artificial Neural Networks in Structural Mechanics	6	2	2	4	w	4021387		
Schröder	Schröder / Meinke	Computational Fluid Dynamics I	4	2	1	3	s	4012278		
Markert	Markert	Computational Intelligence in Engineering	5	2	1	3	w	4021493		
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		
Ban	Ban	Numerical Methods in Mechanical Engineering	7	3	2	5	w	4011449		
N.N.	N.N.	Language Course (1) *	2	1	1	2	sw	4021266	45	
N.N.	N.N.	Language Course (2) *	2	1	1	2	sw	4021267		
N.N.	N.N.	Linguistic Elective **	2	1	1	2	sw	4024418		
Brecher	Brecher	Mini Thesis	9or	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
Schröder	Schröder / Meinke	Computational Fluid Dynamics II	3	1	1	2	w	4012279	23	*
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		
Markert	Markert	Intelligent Monitoring of Engineering Systems	5	2	1	3	s	4021494		
Jacobs	Jacobs	Machine Design Process	6	2	3	5	w	4012285		
Schulz	Schulz	Modelling, Model Reduction and Simulation in Laser Processing II	5	2	2	4	w	4014454		
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		
N.N.	N.N.	Simulation of Discrete Event Systems	5	2	2	4	s	4011437		
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.