Course of Study Theoretical Mechanical Engineering (Study Cohort w18)

Sample course plan A Master Theoretical Mechanical Engineering (TMBMS)
Specialisation Materials Science

Legend:

Core qualification Compulsory	Specialisation Compulsory	Focus Compulsory	Thesis Compulsory
Core qualification Elective Compulsory	Specialisation Elective Compulsory	Focus Elective Compulsory	Interdisciplinary complement

LP	Semester 1	Form	Hrs/wk	Semester 2	Form	Hrs/wk	Semester 3	Form	Hrs/wk	Semester 4	Form	Hrs/wk
1	**Finite Elements Methods**			**Numerical Treatment of Ordinary Differential Equations**			**Research Project Theoretical Mechanical Engineering**			**Master Thesis**		
2	Finite Element Methods	VL	2	Numerical Treatment of Ordinary Differential Equations	VL	2						
3	Finite Element Methods	HÜ	2	Numerical Treatment of Ordinary Differential Equations	UE	2						
4												
5												
6												
7	**Control Systems Theory and Design**			**Applied Dynamics: Numerical and experimental methods**								
8	Control Systems Theory and Design	VL	2	Applied Dynamics	VL	2						
9	Control Systems Theory and Design	UE	2	Lab Applied Dynamics	PR	3						
10												
11												
12												
13	**Modelling and Optimization in Dynamics**			**Computational Fluid Dynamics II**			**Materials Physics and Atomistic Materials Modeling**					
14	Flexible Multibody Systems	VL	2	Computational Fluid Dynamics II	VL	2	Materials Physics	VL	2			
15	Optimization of dynamical systems	VL	2	Computational Fluid Dynamics II	HÜ	2	Atomistic Materials Modeling	VL	2			
16							Exercises in Materials Physics and Modeling	UE	2			
17												
18												
19	**Control Lab C**			**Linear and Nonlinear System Identifikation**			**Advanced Functional Materials**					
20	Control Lab VII	PR	1	Linear and Nonlinear System Identification	VL	2	Advanced Functional Materials	SE	2			
21	Control Lab VIII	PR	1									
	Control Lab IX	PR	1									
22	**Polymers**			**Design optimization and probabilistic approaches in structural analysis**								
23	Structure and Properties of Polymers	VL	2	Design Optimization and Probabilistic Approaches in Structural Analysis	VL	2						
24	Processing and design with polymers	VL	2	Design Optimization and Probabilistic Approaches in Structural Analysis	HÜ	2						
25												
26												
27												
28												
29												
30												
	Business & Management (from catalogue) - 6LP											
	Nontechnical Elective Complementary Courses for Master (from catalogue) - 6LP											

The choice of courses from the catalogue is flexible (depends on the semestral work load), provided the necessary number of required credits is reached.