Course of Study Theoretical Mechanical Engineering (Study Cohort w20)

Sample course plan A Master Theoretical Mechanical Engineering (TMBMS)
Specialisation Robotics and Computer 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	GÜ	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	GÜ	2	Lab Applied Dynamics	PR	3						
10												
11												
12												
13	**Modelling and Optimization in Dynamics**			**Computational Fluid Dynamics II**			**Advanced Topics in Control**					
14	Flexible Multibody Systems	VL	2	Computational Fluid Dynamics II	VL	2	Advanced Topics in Control	VL	2			
15	Optimization of dynamical systems	VL	2	Computational Fluid Dynamics II	HÜ	2	Advanced Topics in Control	GÜ	2			
16												
17												
18												
19	**Control Lab C**			**Linear and Nonlinear System Identifikation**			**Mathematical Image Processing**					
20	Control Lab VII	PR	1	Linear and Nonlinear System Identification	VL	2	Mathematical Image Processing	VL	3			
21	Control Lab VIII	PR	1				Mathematical Image Processing	GÜ	1			
22	**Robotics**			**Design optimization and probabilistic approaches in structural analysis**								
23	Robotics: Modelling and Control	VL	3	Design Optimization and Probabilistic Approaches in Structural Analysis	VL	2						
24	Robotics: Modelling and Control	HÜ	2	Design Optimization and Probabilistic Approaches in Structural Analysis	HÜ	2						
25												
26												
27												
28												
29												
30												
	Business & Management (from catalogue) - 6LP											
	Non-technical 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.