

# Course of Study Theoretical Mechanical Engineering (Study Cohort w17)

Sample course plan A Master Theoretical Mechanical Engineering (TMBMS)  
Specialisation Energy Systems

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	<b>Finite Elements Methods</b>		<b>Numerical Treatment of Ordinary Differential Equations</b>		<b>Research Project Theoretical Mechanical Engineering</b>		<b>Master Thesis</b>	
2	Finite Element Methods	VL 2						
3	Finite Element Methods	HÜ 2	Numerical Treatment of Ordinary Differential Equations	VL 2				
4			Numerical Treatment of Ordinary Differential Equations	UE 2				
5								
6								
7	<b>Control Systems Theory and Design</b>		<b>Applied Dynamics: Numerical and experimental methods</b>					
8	Control Systems Theory and Design	VL 2						
9	Control Systems Theory and Design	UE 2	Applied Dynamics	VL 2				
10			Lab Applied Dynamics	FL 3				
11								
12								
13	<b>Modelling and Optimization in Dynamics</b>		<b>High-Order FEM</b>		<b>Fluid Mechanics and Ocean Energy</b>			
14	Flexible Multibody Systems	VL 2	High-Order FEM	VL 3	Fluid Mechanics II	VL 2		
15	Optimization of dynamical systems	VL 2	High-Order FEM	HÜ 1	Energy from the Ocean	VL 2		
16								
17								
18								
19	<b>Control Lab C</b>		<b>Computational Fluid Dynamics II</b>		<b>Innovative CFD Approaches</b>			
20	Control Lab VII	PR 1	Computational Fluid Dynamics II	VL 2	Application of Innovative CFD Methods in Research and Development	VL 2		
21	Control Lab VIII	PR 1	Computational Fluid Dynamics II	HÜ 2	Application of Innovative CFD Methods in Research and Development	UE 2		
22	Control Lab IX	PR 1						
23	<b>Thermal Engineering</b>		<b>Linear and Nonlinear System Identifikation</b>					
24	Thermal Engineering	VL 3	Linear and Nonlinear System Identifikation	VL 2				
25	Thermal Engineering	HÜ 1						
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.