

Master Course Computational Engineering Curriculum						
		Code	Module Name	hours per week	CP	Semester
1st & 2nd semester	P Compulsory Courses 39 CP	CE-P01	Mathematical Aspects of Differential Equations and Numerical Mathematics	4	6	1
		CE-P02	Mechanical Modeling of Materials	4	6	1
		CE-P03	Computer-based Analysis of Steel Structures	4	6	1
		CE-P04	Modern Programming Concepts in Engineering	4	6	1
		CE-P05	Finite Element Methods in Linear Structural Mechanics	4	6	1
		CE-P06	Fluid Dynamics	2	3	2
		CE-P07	Continuum Mechanics	4	6	2
		Subtotal CP: Compulsory Courses				
1st, 2nd & 3rd semester	WP Compulsory Optional Courses 35 CP (elective)	CE-WP01	Variational Calculus and Tensor Analysis	3	4	1
		CE-WP02	Concrete Engineering and Design	4	6	2
		CE-WP03	Dynamics and Adaptronics	4	6	2
		CE-WP04	Advanced Finite Element Methods	4	6	2
		CE-WP05	Computational Fluid Dynamics	4	6	2
		CE-WP06	Finite Element Methods for Nonlinear Analyses of Materials and Structures	2	3	2
		CE-WP08	Numerical Methods and Stochastics	4	6	2
		CE-WP09	Numerical Simulation in Geotechnics and Tunnelling	4	6	2
		CE-WP10	Object-oriented Modelling and Implementation of Structural Analysis Software	2	3	2
		CE-WP11	Dynamics of Structures	4	6	3
		CE-WP12	Computational Plasticity	3	4	3
		CE-WP13	Advanced Control Methods for Adaptive Mechanical Systems	4	6	3
		CE-WP14	Computational Wind Engineering	2	3	3
		CE-WP15	Design Optimization	4	6	3
		CE-WP16	Parallel Computing	4	6	3
		CE-WP17	Adaptive Finite Element Methods	4	6	3
		CE-WP18	Safety and Reliability of Engineering Structures	4	6	3
		CE-WP19	Computational Fracture Mechanics	4	6	3
		CE-WP20	Materials for Aerospace Applications	4	6	3
		CE-WP21	Energy Methods in Material Modelling	3	4	3
		CE-WP22	Porous Materials	4	6	3
		CE-WP23	Computational Dynamics	4	6	3
		CE-WP24	Case Study A	2	3	2+3
		Minimum Subtotal CP: Compulsory optional courses				
1st, 2nd & 3rd semester	W Optional Courses 16 LP	CE-W01	Training of Competences (part 1)	4	4	1
		CE-W02	Training of Competences (part 2)	4	4	2
		CE-W03	Case Study B	2	3	2+3
		CE-W04	Parallel Solvers for Finite Element Methods	4	4	3
		CE-W05	Simulation of Incompressible Turbulent Flows with the Finite Volume Method	2	3	3
		CE-W06	other relevant courses of the faculty or from engineering faculties of other universities			1+2+3
		Minimum Subtotal CP: Optional Courses				
4th Semester	M Master- Thesis	CE-M	Master Thesis	-	30	4
		Subtotal CP: Master Thesis				
Subtotal CP: Compulsory Courses					39	
Subtotal CP: Compulsory optional courses					35	
Subtotal CP: Optional courses					16	
Subtotal CP: Master Thesis					30	
Sum CP in total:					120	