

Conception of Machines – Suggested Curriculum Overview

1 Semester WS	Compulsory Courses				Compulsory Elective Area II			
	Numerical Methods in Mechanical Engineering	Advanced Finite Element Methods	Advanced Software Engineering		Practical Introduction to FEM-Software I	Machine Design Process*	Fundamentals of Light Weight Design*	Tensor Algebra and Tensor Analysis for Engineering Students I*
	Language Courses				Compulsory Elective Area I - 4 CP are to be taken			
	German language course							
2 Semester SS	Compulsory Courses				Compulsory Elective Area I - 4 CP are to be taken			
	Continuum Mechanics	Multibody Dynamics	Nonlinear Structural Mechanics*	Failure of Structures and Structural Elements*	Porous Media Mechanics	Computational Fluid Dynamics I		
	Language Courses				Compulsory Elective Area II			
	German language course				Tensor Algebra and Tensor Analysis for Engineering Students II*	Finite Element Methods in Lightweight Design	Simulation of Discrete Event Systems	Intelligent Monitoring of Engineering Systems
					Practical Introduction to FEM-Software II	Modeling, Model Reduction and Simulation in Laser Processing - Laser		
3 Semester WS	Compulsory Courses				Compulsory Elective Area II			
	Artificial Neural Networks in Structural Mechanics*	Computational Intelligence in Engineering			Modeling, Model Reduction and Simulation in Laser Processing - Application	Computational Fluid Dynamics II	Molecular Mechanics and Multi-Scale Modelling of Materials	
	Language Courses				Compulsory Elective Area I - 4 CP are to be taken			
	Linguistic Elective							
	Elective Area Internship or Research Project							
	Mini Thesis (260 hours)		or	Industrial Internship (9 weeks)				
4 Semester SS	Master Thesis (six months)							

*Track specific