Master's degree program "Environmental Engineering"
Curriculum

Status 01.10.25

		Module code	Module title	SWS	CP	Semester	Specialization			
							Sustainable Systems and Technologies	Sustainability in the Built Environment	Road and Traffic Engineering and Infrastructure Planning	Water Management and Geotechnics
Compulsory module										
1. / 2. Semester	**Compulsory modules 22 CP**	UI-P1	Mathematical Statistics	4	5	WiSe	X	X	X	X
		UI-P2	Modeling of environmental processes	4	6	WiSe	X	X	X	X
		UI-P3	Operations Research and Databases	4	6	WiSe	X	X	X	X
		UI-P4	Environmental Engineering II	4	5	SuSe	X	X	X	X
Compulsory optional modules										
1. - 3. Semester	**Compulsory optional modules 52 CP of which one project (PA) and at least three modules from category 1**	**Sustainable Systems and Technologies**								
		UI-WPA1	Process Development & Plant Design	4	5	WiSe	1			
		UI-WPA2	Circular Process Engineering	4	5	SuSe	2			
		UI-WPA3	Computer Aided Process Design	4	5	SuSe	2			
		UI-WPA4	Mechanical Process Engineering	4	5	WiSe	1			
		UI-WPA5	Processes in Mechanical Process Engineering	4	5	SuSe	2			
		UI-WPA8	High Pressure Process Technology	4	5	SuSe	2			
		UI-WPA9	Integrated High-Pressure Methods	4	5	WiSe	2			
		UI-WPA10	Processthermodynamics	4	5	WiSe	2			
		UI-WPA11	Thermodynamics of Mixtures	4	5	SuSe	1			
		UI-WPA12	Model based Design of Reactors and Separation Units	4	5	SuSe	2			
		UI-WPA13	Waste, Gas and Wastewater Treatment	4	5	WiSe/SuSe	2			
		UI-WPA14	Occupational and Plant Safety	2	3	WiSe	2			
		UI-WPA15	Air Quality	4	5	SuSe	2	2	2	
		UI-WPA16	Environmental Risks	4	5	SuSe/WiSe	2			
		UI-WPA17	Thermal Power Plants	4	5	WiSe	2			
		UI-WPA18	Handling Systems for Supply and Disposal Streams of Power Plants	4	5	WiSe	2			
		UI-WPA19	Energy Conversion Systems	4	5	WiSe	1	2		
		UI-WPA20	Nuclear Power Plants Engineering	4	5	WiSe	2			
		UI-WPA21	Demand and Supply Energy Markets	4	5	SuSe	2			
		UI-WPA22	Computer Simulation of Fluid Flow	4	5	SuSe	2			2
		UI-WPA23	Technical Combustion	4	5	SuSe	2			
		UI-WPA24	Energy Storage Technologies and Applications	4	5	WiSe	2			
		UI-WPA26	Materials for Energy Technology	4	5	WiSe	2			
		UI-WPA27	Chemical Processes for Closed Carbon Cycles	4	5	SuSe	1	2		2
		UI-WPA28	Chemical Energy Storage and Carbon-Based Feedstock	4	5	WiSe	2			
		UI-WPA29	Process Simulation of Energy Plants	4	5	WiSe	2			
		UI-WPA30	Energy Systems Analysis	4	5	WiSe	1			
		UI-WPA32	Management of Non-Renewable and Renewable Resources	2	3	WiSe	2			
		UI-WPA33	Environmental Protection in Chemical Industry	2	3	WiSe	2			
		UI-WPA34	Carbon dioxide capture in from Industrial Processes	4	5	SuSe	2			
		Sustainability in the Built Environment								
		UI-WPB1	Environmental Planning + GIS	4	6	WiSe		1	2	2
		UI-WPB2	Material Flow Management	4	6	SuSe	2	1		
		UI-WPB3	Sustainable Building	4	6	WiSe		2		
		UI-WPB4	Environmental Sustainability and Recycling of Building Materials	4	6	WiSe/SuSe	2	2		
		UI-WPB5	Spatial data analysis and environmental modelling	4	6	WiSe		1	2	2
		UI-WPB6	Sustainable operation and resource conservation with urban water management facilities	4	6	WiSe		2		2
		Road and Traffic Engineering and Infrastructure Planning								
		UI-WPC1	Design of roads, material models and practical aspects in road construction technology	5	6	WiSe		2	1	
		UI-WPC2	Sustainability and Digitization in road construction	5	6	SuSe		1	1	2
		UI-WPC3	Traffic Engineering	4	6	SuSe			1	
		UI-WPC4	Transportation Systems	5	6	SuSe			2	
		UI-WPC5	Transportation Planning	4	6	WiSe			1	
		UI-WPC6	Durability and Repair of Concrete Structures	4	6	SuSe			2	
		Water Management and Geotechnics								
		UI-WPD1	Sustainable Water Resources Management	4	6	WiSe		2	2	1
		UI-WPD2	Hydrology	4	6	SuSe			2	1
		UI-WPD3	Transport and fate of substances in river basins	4	6	SuSe				2
		UI-WPD4	Intern. Wastewater Treatment, Industrial Wastewater Treatment and River Water Quality	4	6	SuSe	2		2	1
		UI-WPD5	Water Chemistry and Laboratory Course	4	6	WiSe				1
		UI-WPD6	Innovations in Urban Water Management and Mathematical Simulation	5	6	WiSe/SuSe				2
		UI-WPD7	Environmental Geotechnics	4	6	SuSe	2			1
		UI-WPD8	Earthworks – Soil mechanical background and practice	4	6	WiSe			2	1
		UI-WPD9	Geology and Practical Soil Mechanics	4	6	WiSe				2

Continued on second page

Continuation of the Master's degree program “Environmental Engineering” Curriculum

		Module code	Module title	CP	Semester	Specialization			
						Sustainable Systems and Technologies	Sustainability in the Built Environment	Road and Traffic Engineering and Infrastructure	Water Management and Geotechnics
1. - 3. Semester	**Continuation of compulsory optional modules**	**Projects**							
		UI-PA1	Interdisciplinary Project	6	WiSe or SuSe	X	X	X	X
		UI-PA2	Project Sustainable Systems and Technologies	12		X			
		UI-PA3	Project Sustainability in the built environment	10			X		
		UI-PA4	Project Road and Traffic Engineering and Infrastructure planning	10				X	
		UI-PA5	Project Water management and geotechnics	10					X
Master‘s Thesis									
4. Semester	**Master‘s Thesis 30 CP**	UI-MA	Master‘s Thesis	30					
Wahlmodule									
	Optional modules 16 CP		Further modules from the above list and according to the module handbook	16					
			Foreign languages[1)]						
			Modules from other Bachelor's or Master's degree programs[1)]						
Total credit points				**120**					

[1)] If similar or equivalent module content was not already part of the Bachelor's examination relevant for admission