

Exclosure to Subject Specific Regulations
 from 25.07.2018
 for Master-Programme
 Wasser- und Umweltingenieurwesen
 at TUHH
 Programme Director: Prof. Ralf Otterpohl
 Total: 120 CP
 Number of Specilisations to choose: 1



Course Scheme Master Water and Environmental Engineering (WUMS)

Consolidated Version
 for Study Cohort: WiSe21/22
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 and Approval of Chair from:
 04.05.2022
 Replaces Version from: 22.04.2021
 In Force on: 01.10.2018
 Out of Force on: 30.09.2024

Information regarding the lectures are available in the TUHH modul manuals as well as in the course catalogue.

Re-com. Term	Module						Examination			Course Work		
	Module Name (German / English)	Language	ModuleResponsability	Institute	C/EC (1)	CM/OM (2)	CP (4)	Grade	Examination Form(3)	Compulsory	Course Work Type	Bonus (in %)
Core Qualification Compulsory Courses: 24 LP Optional Courses: 0 LP												
1	Biologie, Geologie und Chemie / Biology, Geology and Chemistry	DE / EN	Dr. Rechtenbach	B-2	C	CM	6	Y	KL			
1	Nachhaltigkeit und Risikomanagement / Sustainability and Risk Management	DE / EN	Prof. Kuchta	V-9	C	CM	6	Y	SA			
1-3	Nichttechnische Angebote im Master / Non-technical Courses for Master	DE / EN	Richter	0-TUHH	C	OM	6	Selection out of seperatly published Catalogue				
1-3	Betrieb & Management / Business & Management	DE / EN	Prof. Meyer	W-1	C	OM	6	Selection out of seperatly published Catalogue				
Specialisation Cities Compulsory Courses: 42 LP Optional Courses: 24 LP												
1	Abwasserreinigung und Luftreinhaltung / Wastewater Treatment and Air Pollution Abatement	DE / EN	Dr. Pietsch-Braune	V-3	C	CM	6	Y	KL			
1	Integrierte Verkehrsplanung / Integrated Transportation Planning	DE	Prof. Gertz	W-8	C	CM	6	Y	SA			
1	Umweltschutz und -management / Environmental Protection and Management	EN	Prof. Otterpohl	B-2	C	CM	6	Y	KL			
2	Abwassersysteme / Wastewater Systems	EN	Prof. Otterpohl	B-2	C	CM	6	Y	KL			
2	Städtisches Umweltmanagement / Urban Environmental Management	EN	Dr. Rechtenbach	B-2	C	CM	6	Y	SA			
2	Stadtplanung / City Planning	DE	Prof. Gertz	W-8	C	CM	6	Y	SA			
2	Abfallbehandlung und Feststoffverfahrenstechnik / Waste Treatment and Solid Matter Process Technology	DE / EN	Prof. Kuchta	V-9	EC	CM	6	Y	KL			

		Module					Examination			Course Work		
Re-com. Term	Module Name (German / English)	Language	ModuleResponsability	Institute	C/EC (1)	CM/OM (2)	CP (4)	Grade	Examination Form(3)	Compulsory	Course Work Type	Bonus (in %)
2	Advanced Vadose Zone Hydrology / Advanced Vadose Zone Hydrology	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			
2	Elektrische Energie aus Solarstrahlung und Windkraft / Electrical Energy from Solar Radiation and Wind Power	DE	Dr. Höfer	V-9	EC	CM	6	Y	KL			
2	Hydrologische Systeme / Hydrological Systems	DE / EN	Prof. Fröhle	B-10	EC	CM	6	Y	KL			
2	Ingenieurgeochemie / Geochemical Engineering	EN	Dr. Ritzkowski	SD-B	EC	CM	6	Y	KL			
2	Management von Oberflächenwasser / Management of Surface Water	DE / EN	Prof. Fröhle	B-10	EC	CM	6	Y	KL			
2	Marine Geotechnik / Marine Geotechnics	DE	Prof. Grabe	B-5	EC	CM	6	Y	KL			
2	Modellierung in der Wasserwirtschaft / Modeling in Water Management	DE / EN	Dr. Johannsen	B-11	EC	CM	6	Y	MP			
2	Multiphase Flow in Porous Media / Multiphase Flow in Porous Media	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			
2	Nexus Engineering - Wasser, Boden, Nahrung und Energie / Nexus Engineering - Water, Soil, Food and Energy	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	FFA			
2	Smart Monitoring / Smart Monitoring	EN	Prof. Smarsly	B-1	EC	CM	6	Y	SA			
2	Verkehrsmodellierung / Transportation Modelling	DE	Prof. Gertz	W-8	EC	CM	6	Y	SA			
2	Water and Environment: Theory and Application / Water and Environment: Theory and Application	EN	Prof. Shokri	B-9	EC	CM	6	Y	SA			
3	Studienarbeit Stadt / Study Work Cities		Dozenten des SD B	B-2	C	CM	6	Y	STA			
3	Abfallbehandlungstechnologien / Waste Treatment Technologies	DE / EN	Prof. Kuchta	V-9	EC	CM	6	Y	RE	Y	FFST	0
3	Anpassung an den Klimawandel in der wasserbaulichen Praxis (AKWAS) / Adaptation to Climate Change in Hydraulic Engineering (AKWAS)	DE	Prof. Fröhle	B-10	EC	CM	6	Y	SA			
3	Betrieb von öffentlichen Verkehrssystemen / Operation of Public Transportation Systems	DE	Prof. Gertz	W-8	EC	CM	6	Y	SA			
3	Emerging Trends in Environmental Engineering / Emerging Trends in Environmental Engineering	EN	Prof. Shokri	B-9	EC	CM	6	N	SA			
3	Gewässerschutz / Water Protection	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	RE			
3	Ländliche Entwicklung und Ressourcen Orientierte Sanitärsysteme für verschiedene Klimate / Rural Development and Resources Oriented Sanitation for different Climate Zones	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	FFA			
3	Membran Technologie / Membrane Technology	EN	Prof. Ernst	B-11	EC	CM	6	Y	KL			
3	Modellierung von Prozessen in der Wassertechnologie / Process Modeling in Water Technology	DE / EN	Dr. Johannsen	B-11	EC	CM	6	Y	MP			

Module							Examination			Course Work		
Re-com. Term	Module Name (German / English)	Language	ModuleResponsability	Institute	C/EC (1)	CM/OM (2)	CP (4)	Grade	Examination Form(3)	Compulsory	Course Work Type	Bonus (in %)
3	Nachhaltiger naturbasierter Küstenschutz im Klimawandel (SeaPiaC) / Sustainable Nature-based Coastal Protection in a Changing Climate (SeaPiaC)	EN	Prof. Fröhle	B-10	EC	CM	6	Y	SA			
3	Spezielle Aspekte des Abfallressourcenmanagements / Special Aspects of Waste Resource Management	EN	Prof. Kuchta	V-9	EC	CM	6	Y	RE	Y	SA	20
3	Subsurface Processes / Subsurface Processes	EN	Prof. Shokri	B-9	EC	CM	6	N	FFA			
3	Wasserressourcen und -versorgung / Water Resources and - Supply	DE	Prof. Ernst	B-11	EC	CM	6	Y	KL			
3-4	Ausgewählte Themen des Umweltingenieurwesens / Selected Topics in Environmental Engineering	DE / EN	Prof. Ernst	B-11	EC	OM	6	Selection out of Catalogue below				
Specialisation Environment Compulsory Courses: 42 LP Optional Courses: 24 LP												
1	Abwasserreinigung und Luftreinhaltung / Wastewater Treatment and Air Pollution Abatement	DE / EN	Dr. Pietsch-Braune	V-3	C	CM	6	Y	KL			
1	Gewässerschutz / Water Protection	EN	Prof. Otterpohl	B-2	C	CM	6	Y	RE			
1	Umweltschutz und -management / Environmental Protection and Management	EN	Prof. Otterpohl	B-2	C	CM	6	Y	KL			
1	Kanalbau und Simulation / Construction and Simulation of Sewerage Systems	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	SA	N	RE	20
2	Abfallbehandlung und Feststoffverfahrenstechnik / Waste Treatment and Solid Matter Process Technology	DE / EN	Prof. Kuchta	V-9	C	CM	6	Y	KL			
2	Elektrische Energie aus Solarstrahlung und Windkraft / Electrical Energy from Solar Radiation and Wind Power	DE	Dr. Höfer	V-9	C	CM	6	Y	KL			
2	Management von Oberflächenwasser / Management of Surface Water	DE / EN	Prof. Fröhle	B-10	C	CM	6	Y	KL			
2	Abwassersysteme / Wastewater Systems	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	KL			
2	Advanced Vadose Zone Hydrology / Advanced Vadose Zone Hydrology	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			
2	Hydrologische Systeme / Hydrological Systems	DE / EN	Prof. Fröhle	B-10	EC	CM	6	Y	KL			
2	Ingenieurgeochemie / Geochemical Engineering	EN	Dr. Ritzkowski	SD-B	EC	CM	6	Y	KL			
2	Marine Geotechnik / Marine Geotechnics	DE	Prof. Grabe	B-5	EC	CM	6	Y	KL			
2	Modellierung in der Wasserwirtschaft / Modeling in Water Management	DE / EN	Dr. Johannsen	B-11	EC	CM	6	Y	MP			
2	Multiphase Flow in Porous Media / Multiphase Flow in Porous Media	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			

		Module					Examination			Course Work		
Re-com. Term	Module Name (German / English)	Language	ModuleResponsability	Institute	C/EC (1)	CM/OM (2)	CP (4)	Grade	Examination Form(3)	Compulsory	Course Work Type	Bonus (in %)
2	Nexus Engineering - Wasser, Boden, Nahrung und Energie / Nexus Engineering - Water, Soil, Food and Energy	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	FFA			
2	Prozessbildgebung / Process Imaging	EN	Prof. Penn	V-10	EC	CM	6	Y	KL			
2	Smart Monitoring / Smart Monitoring	EN	Prof. Smarsly	B-1	EC	CM	6	Y	SA			
2	Städtisches Umweltmanagement / Urban Environmental Management	EN	Dr. Rechtenbach	B-2	EC	CM	6	Y	SA			
2	Stadtplanung / City Planning	DE	Prof. Gertz	W-8	EC	CM	6	Y	SA			
2	Systemaspekte regenerativer Energien / System Aspects of Renewable Energies	DE	Prof. Kaltschmitt	V-9	EC	CM	6	Y	KL			
2	Water and Environment: Theory and Application / Water and Environment: Theory and Application	EN	Prof. Shokri	B-9	EC	CM	6	Y	SA			
3	Studienarbeit Umwelt / Study Work Environment		Dozenten des SD B	B-2	C	CM	6	Y	STA			
3	Abfallbehandlungstechnologien / Waste Treatment Technologies	DE / EN	Prof. Kuchta	V-9	EC	CM	6	Y	RE	Y	FFST	0
3	Anpassung an den Klimawandel in der wasserbaulichen Praxis (AKWAS) / Adaptation to Climate Change in Hydraulic Engineering (AKWAS)	DE	Prof. Fröhle	B-10	EC	CM	6	Y	SA			
3	Emerging Trends in Environmental Engineering / Emerging Trends in Environmental Engineering	EN	Prof. Shokri	B-9	EC	CM	6	N	SA			
3	Integrierte Verkehrsplanung / Integrated Transportation Planning	DE	Prof. Gertz	W-8	EC	CM	6	Y	SA			
3	Ländliche Entwicklung und Ressourcen Orientierte Sanitärsysteme für verschiedene Klimate / Rural Development and Resources Oriented Sanitation for different Climate Zones	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	FFA			
3	Membran Technologie / Membrane Technology	EN	Prof. Ernst	B-11	EC	CM	6	Y	KL			
3	Modellierung von Prozessen in der Wassertechnologie / Process Modeling in Water Technology	DE / EN	Dr. Johannsen	B-11	EC	CM	6	Y	MP			
3	Nachhaltiger naturbasierter Küstenschutz im Klimawandel (SeaPiaC) / Sustainable Nature-based Coastal Protection in a Changing Climate (SeaPiaC)	EN	Prof. Fröhle	B-10	EC	CM	6	Y	SA			
3	Spezielle Aspekte des Abfallressourcenmanagements / Special Aspects of Waste Resource Management	EN	Prof. Kuchta	V-9	EC	CM	6	Y	RE	Y	SA	20
3	Subsurface Processes / Subsurface Processes	EN	Prof. Shokri	B-9	EC	CM	6	N	FFA			
3	Wasserressourcen und -versorgung / Water Resources and -Supply	DE	Prof. Ernst	B-11	EC	CM	6	Y	KL			

		Module					Examination			Course Work		
Re-com. Term	Module Name (German / English)	Language	ModuleResponsability	Institute	C/EC (1)	CM/OM (2)	CP (4)	Grade	Examination Form(3)	Compulsory	Course Work Type	Bonus (in %)
3-4	Ausgewählte Themen des Umweltingenieurwesens / Selected Topics in Environmental Engineering	DE / EN	Prof. Ernst	B-11	EC	OM	6	Selection out of Catalogue below				
Specialisation Water Compulsory Courses: 42 LP Optional Courses: 24 LP												
1	Kanalbau und Simulation / Construction and Simulation of Sewerage Systems	EN	Prof. Otterpohl	B-2	C	CM	6	Y	SA	N	RE	20
1	Subsurface Processes / Subsurface Processes	EN	Prof. Shokri	B-9	C	CM	6	Y	KL			
1	Wasserressourcen und -versorgung / Water Resources and - Supply	DE	Prof. Ernst	B-11	C	CM	6	Y	KL			
2	Abwassersysteme / Wastewater Systems	EN	Prof. Otterpohl	B-2	C	CM	6	Y	KL			
2	Management von Oberflächenwasser / Management of Surface Water	DE / EN	Prof. Fröhle	B-10	C	CM	6	Y	KL			
2	Modellierung in der Wasserwirtschaft / Modeling in Water Management	DE / EN	Dr. Johannsen	B-11	C	CM	6	Y	MP			
2	Advanced Vadose Zone Hydrology / Advanced Vadose Zone Hydrology	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			
2	Hydrologische Systeme / Hydrological Systems	DE / EN	Prof. Fröhle	B-10	EC	CM	6	Y	KL			
2	Ingenieurgeochemie / Geochemical Engineering	EN	Dr. Ritzkowski	SD-B	EC	CM	6	Y	KL			
2	Marine Geotechnik / Marine Geotechnics	DE	Prof. Grabe	B-5	EC	CM	6	Y	KL			
2	Multiphase Flow in Porous Media / Multiphase Flow in Porous Media	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			
2	Nexus Engineering - Wasser, Boden, Nahrung und Energie / Nexus Engineering - Water, Soil, Food and Energy	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	FFA			
2	Prozessbildgebung / Process Imaging	EN	Prof. Penn	V-10	EC	CM	6	Y	KL			
2	Smart Monitoring / Smart Monitoring	EN	Prof. Smarsly	B-1	EC	CM	6	Y	SA			
2	Stadtplanung / City Planning	DE	Prof. Gertz	W-8	EC	CM	6	Y	SA			
2	Systemaspekte regenerativer Energien / System Aspects of Renewable Energies	DE	Prof. Kaltschmitt	V-9	EC	CM	6	Y	KL			
2	Water and Environment: Theory and Application / Water and Environment: Theory and Application	EN	Prof. Shokri	B-9	EC	CM	6	Y	SA			
3	Studienarbeit Wasser/ Abwasser / Study Work Water/ Waste Water		Dozenten des SD B	B-2	C	CM	6	Y	STA			
3	Abwasserreinigung und Luftreinhaltung / Wastewater Treatment and Air Pollution Abatement	DE / EN	Dr. Pietsch-Braune	V-3	EC	CM	6	Y	KL			

		Module					Examination			Course Work		
Re-com. Term	Module Name (German / English)	Language	ModuleResponsability	Institute	C/EC (1)	CM/OM (2)	CP (4)	Grade	Examination Form(3)	Compulsory	Course Work Type	Bonus (in %)
3	Anpassung an den Klimawandel in der wasserbaulichen Praxis (AKWAS) / Adaptation to Climate Change in Hydraulic Engineering (AKWAS)	DE	Prof. Fröhle	B-10	EC	CM	6	Y	SA			
3	Emerging Trends in Environmental Engineering / Emerging Trends in Environmental Engineering	EN	Prof. Shokri	B-9	EC	CM	6	N	SA			
3	Gewässerschutz / Water Protection	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	RE			
3	Integrierte Verkehrsplanung / Integrated Transportation Planning	DE	Prof. Gertz	W-8	EC	CM	6	Y	SA			
3	Ländliche Entwicklung und Ressourcen Orientierte Sanitärsysteme für verschiedene Klimate / Rural Development and Resources Oriented Sanitation for different Climate Zones	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	FFA			
3	Membran Technologie / Membrane Technology	EN	Prof. Ernst	B-11	EC	CM	6	Y	KL			
3	Modellierung von Prozessen in der Wassertechnologie / Process Modeling in Water Technology	DE / EN	Dr. Johannsen	B-11	EC	CM	6	Y	MP			
3	Nachhaltiger naturbasierter Küstenschutz im Klimawandel (SeaPiaC) / Sustainable Nature-based Coastal Protection in a Changing Climate (SeaPiaC)	EN	Prof. Fröhle	B-10	EC	CM	6	Y	SA			
3	Spezielle Aspekte des Abfallressourcenmanagements / Special Aspects of Waste Resource Management	EN	Prof. Kuchta	V-9	EC	CM	6	Y	RE	Y	SA	20
3-4	Ausgewählte Themen des Umweltingenieurwesens / Selected Topics in Environmental Engineering	DE / EN	Prof. Ernst	B-11	EC	OM	6	Selection out of Catalogue below				
Thesis Compulsory Courses: 30 LP Optional Courses: 0 LP												
4	Masterarbeit / Master Thesis		Professoren der TUHH	0-TUHH	C	CM	30	Y	AB			

Selected Topics in Environmental Engineering

Course					Examination			
Course Name (German / English)	Course Form LV(5)	Language (6)	SWS (7)	Sem. LV	CP (4)	Grade	Examination Form(3)	Additional information
Aquatische Umweltchemie / Environmental Aquatic Chemistry	VL	EN	2	SoSe	3	Y	KL	
Exzellenz im Internationalen Projektgeschäft / Excellence in International Project Delivery	IV	EN	2	SoSe	2	Y	KL	
Schlammbehandlung / Sludge Treatment	VL	EN	2	SoSe	3	Y	KL	
Thermische Biomassenutzung / Thermal Biomass Utilization	VL	DE	2	WiSe	2	Y	KL	
Thermische Biomassenutzung / Thermal Biomass Utilization	PR	DE	1	WiSe	1	Y	SA	

Course					Examination			
Course Name (German / English)	Course Form LV(5)	Language (6)	SWS (7)	Sem. LV	CP (4)	Grade	Examination Form(3)	Additional information
Thermische Biomassenutzung / Thermal Biomass Utilization	PR	DE	1	WiSe	1	N	SA	Replaces "Thermal Biomass Utilization (PR)" from WiSe22/23

Explanation:

¹C=Compulsory, EC=Elective Compulsory

²CM=Compulsory Defined Module, OM=Optional Defined Module

³KL=Written exam, SA=Written elaboration, FFST=Subject theoretical and practical work, FFA=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, STA=Study work, AB=Thesis, SA It. FPrO=Written elaboration (accord. to Internship Regulations)

⁴CP=Credit Points

⁵VL=Lecture, SE=Seminar, GÜ=Recitation Section (small), PBL=Project-/problem-based Learning, PR=Practical Course, PS=Project Seminar, HÜ=Recitation Section (large), IV=Integrated Lecture

⁶DE=German, EN=English, DE/EN=German and English

⁷SWS=Contact hours