

Exclosure to Subject Specific Regulations  
 from 25.07.2018  
 for Master-Programme  
 Environmental Engineering  
 at TUHH  
 Programme Director: Prof. Mathias Ernst  
 Total: 120 CP  
 Number of Specialisations to choose: 1



# Course Scheme Master Environmental Engineering (IMPEE)

Consolidated Version  
 for Study Cohort: WiSe20/21  
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 and Approval of Chair from:  
 19.05.2021  
 Replaces Version from: 15.04.2020  
 Out of Force on: 30.09.2023

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 %)
<b>Core Qualification</b> Compulsory Courses: 42 LP Optional Courses: 18 LP												
1	Abfallbehandlungstechnologien / Waste Treatment Technologies	DE / EN	Prof. Kuchta	V-9	C	CM	6	Y	RE	Y	FFST	0
1	Nachhaltiges Wassermanagement und Mikrobiologie der Wasseraufbereitung / Sustainable Water Management and Microbiology of Water Systems	EN	Prof. Ernst	B-11	C	CM	6	Y	KL	Y	RE	20
1	Strömungsmechanik, Hydraulik und Geoinformationssysteme im Wasserbau / Fluid Mechanics, Hydraulics and Geo-information-systems in Water Management	DE / EN	Prof. Fröhle	B-10	C	CM	6	Y	KL			
1	Umweltanalytik und wassertechnisches Praktikum / Environmental Analysis and water technology practice	EN	Dr. Rechtenbach	B-2	C	CM	6	Y	KL			
1	Umweltschutz und -management / Environmental Protection and Management	EN	Prof. Otterpohl	B-2	C	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	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	Städtisches Umweltmanagement / Urban Environmental Management	EN	Dr. Rechtenbach	B-2	EC	CM	6	Y	SA			
2	Technische Mikrobiologie / Technical Microbiology	EN	Dr. Krüger	V-7	EC	CM	6	Y	KL	N	ÜA	10
										N	GD	10

Module							Examination			Course Work		
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2-3	Ausgewählte Themen des Umweltingenieurwesens / Selected Topics in Environmental Engineering	DE / EN	Prof. Ernst	B-11	EC	OM	6	Selection out of Catalogue below				
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 Waste and Energy** Compulsory Courses: 12 LP Optional Courses: 18 LP

2	Abfall und Energie / Waste and Energy	EN	Prof. Kuchta	V-9	EC	CM	6	Y	RE	Y	SA	20
3	Studienarbeit Abfall und Energie / Study Work Waste and Energy		Dozenten des SD B	V-9	C	CM	12	Y	STA			
3	Abwasserreinigung und Luftreinhaltung / Wastewater Treatment and Air Pollution Abatement	DE / EN	Dr. Pietsch-Braune	V-3	EC	CM	6	Y	KL			
3	Bioressourcen und Bioraffinerien / Bioresources and Biorefineries	EN	Dr. Körner	B-2	EC	CM	6	Y	KL			
3	Emerging Trends in Environmental Engineering / Emerging Trends in Environmental Engineering	EN	Prof. Shokri	B-9	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
4	Smart Monitoring / Smart Monitoring	EN	Prof. Smarsly	B-1	EC	CM	6	Y	SA			

**Specialisation Biotechnology** Compulsory Courses: 12 LP Optional Courses: 18 LP

2	Bioprozess- und Biosystemtechnik / Bioprocess and Biosystems Engineering	EN	Prof. Zeng	V-1	EC	CM	6	Y	KL	Y	RE	20
3	Studienarbeit Biotechnologie / Study Work Biotechnology		Dozenten des SD B	V-1	C	CM	12	Y	STA			
3	Biokatalyse / Biocatalysis	EN	Prof. Liese	V-6	EC	CM	6	Y	KL			
3	Bioressourcen und Bioraffinerien / Bioresources and Biorefineries	EN	Dr. Körner	B-2	EC	CM	6	Y	KL			
3	Emerging Trends in Environmental Engineering / Emerging Trends in Environmental Engineering	EN	Prof. Shokri	B-9	EC	CM	6	Y	SA			
4	Smart Monitoring / Smart Monitoring	EN	Prof. Smarsly	B-1	EC	CM	6	Y	SA			

**Specialisation Water** Compulsory Courses: 12 LP Optional Courses: 18 LP

2	Abwassersysteme / Wastewater Systems	EN	Prof. Otterpohl	B-2	EC	CM	6	Y	KL			
2	Grundwassermodellierung / Groundwater Modeling	EN	Götz	B-11	EC	CM	6	Y	KL			
3	Studienarbeit Wasser / Study Work Water		Dozenten des SD B	B-11	C	CM	12	Y	STA			

Module							Examination			Course Work		
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3	Emerging Trends in Environmental Engineering / Emerging Trends in Environmental Engineering	EN	Prof. Shokri	B-9	EC	CM	6	Y	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	KL			
4	Advanced Vadose Zone Hydrology / Advanced Vadose Zone Hydrology	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			
4	Multiphase Flow in Porous Media / Multiphase Flow in Porous Media	EN	Prof. Shokri	B-9	EC	CM	6	Y	KL			
4	Smart Monitoring / Smart Monitoring	EN	Prof. Smarsly	B-1	EC	CM	6	Y	SA			
4	Water and Environment: Theory and Application / Water and Environment: Theory and Application	EN	Prof. Shokri	B-9	EC	CM	6	Y	SA			
<b>Thesis</b> 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				Additional information
Course Name (German / English)	Course Form LV(5)	Language (6)	SWS (7)	Sem. LV	CP (4)	Grade	Examination Form(3)		
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	N	It. FSPO		
Exzellenz im Internationalen Projektgeschäft / Excellence in International Project Delivery	IV	EN	2	SoSe	2	Y	KL	Replaces "Excellence in International Project Delivery (IV)" from SoSe23	
Hydrobiologie / Hydrobiology	VL	EN	2	SoSe	3	Y	SA		
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	GÜ	DE	1	WiSe	1	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:

<sup>1</sup>C=Compulsory, EC=Elective Compulsory

<sup>2</sup>CM=Compulsory Defined Module, OM=Optional Defined Module

<sup>3</sup>KL=Written exam, SA=Written elaboration, FFA=Subject theoretical and practical work, FFST=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, STA=Study work, GD=Group discussion, AB=Thesis, UA=Exercices, SA lt. FPRO=Written elaboration (accord. to Internship Regulations), lt. FSPO=according to Subject Specific Regulations

<sup>4</sup>CP=Credit Points

<sup>5</sup>VL=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

<sup>6</sup>DE=German, EN=English, DE/EN=German and English

<sup>7</sup>SWS=Contact hours