



University of Stuttgart
Germany

Master of Science Program



**M.Sc. Air Quality Control,
Solid Waste and Waste Water
Process Engineering**

WASTE

Module List
PO2015

Winter Semester 2020/21

www.waste.uni-stuttgart.de



No.	Module	Pflicht/ Wahl	Semester				Studien- leistung	Prüfungs- leistung	ECTS Credits per module	TOTAL Credits
			1	2	3	4				
Advanced Modules										
1	Module No.	6 Compulsory Modules								36
	19200	Thermo- and Fluid Dynamics (Eiden/Laurien)	P	X					PL	6
	19080	Pollutant Formation and Air Quality Control (Kronenburg/Vogt)	P	X					PL	6
	19100	Chemistry and Biology for Environmental Engineers (Engesser/Metzger/Kuch/Schwederski/Dobslaw)	P	X					PL	6
	19120	Sanitary Engineering (Fischer/Schönberger)	P	X					PL	6
	19290	Process Engineering (Eiden/Trautmann)	P		X				PL	6
	67050	Technology Assessment and Presentation Techniques (Friedrich/Lendon, Kelsey)	P	X					LBP	6



Specialized Area										
2a	AIR QUALITY CONTROL									18
	Module No.	Core Module(s) 6 ECTS								
	15440	Firing Systems and Flue Gas Cleaning (Scheffknecht)	WP		X			PL	6	
		Elective Module(s) 6 ECTS								
	15430	Measurement of Air Pollutants (Vogt/Reiser)	W		X			PL	6	
	59610	Primary Environmental Technologies and Emissions Reduction in Industrial Processes (Vogt/Baumbach/Kohler)	W		X			LBP	6	
	30580	Introduction to Numerical Simulation of Combustion Processes (Kronenburg/Stein)	W		X		USL-V	PL	6	
	15970	Modelling and Simulation of Technical Combustion Systems (Schnell/Risio/Stein)	W		X			PL	6	
	30590	Modelling and Simulation of Turbulent Reaction Flows (Kronenburg/Stein)	W		X		USL-V	PL	6	
		Elective Module(s) in English 3 ECTS								
	39110	Air Quality Management (Friedrich)	W		X		BSL		3	
	39660	Biological Waste Air Purification (Engesser/Dobslaw)	W		X		BSL		3	
	41010	Modelling of Two Phase Flows (Laurien)	W		X		BSL		3	
	36550	Chemistry of the Atmosphere (Stubenrauch/Vogt)	W		X		BSL		3	
	39130	Engine Combustion and Emissions (D. Schmidt)	W		X		BSL		3	
	70430	Operational Technology for Waste Treatment (Sawodny/Birk)	W		X		BSL		3	
		Elective Module(s) in German 3 ECTS								
	38720	Meteorologie (Vogt)	W		X		BSL		3	
	67040	Kraftwerksanlagen I (Schnell)	W		X		BSL		3	
	30660	Luftreinhaltung am Arbeitsplatz (Stergiaropoulos)	W		X		BSL		3	
	36560	Raumklima (Mehra/Hermes)	W		X		BSL		3	
	Practical work 3 ECTS									
36540	Practical Work in Air Quality Control (Vogt/Reiser/Stergiaropoulos)	WP		X	X		USL		3	



Specialized Area										
2b	SOLID WASTE									18
	Module No	Core Module(s) 6 ECTS								
59620	Mechanical, Biological and Thermal Waste Treatment (Scheffknecht/Fischer/Gehrmann/Reiser)	WP		X				PL	6	
Elective Module(s) in English 6 ECTS										
19350	Industrial Waste and Contaminated Sites (Rapf)	W		X				PL	6	
15380	International Waste Management (Kranert/Clauß)	W			X		USL-V	PL	6	
103200	Thermal Treatment of Sewage Sludge, Phosphorus Recycling Processes and related application of the right to access environmental Information (Duelli/Schönberger)	W			X			PL	6	
Elective Module(s) in German 6 ECTS										
36500	Ressourcenmanagement (Hafner/Maurer)	W			X			PL	6	
16060	Umweltanalytik - Wasser und Boden (Kuch/Koch/Metzger)	W			X		USL-V	PL	6	
Elective Module(s) in English 3 ECTS										
100270	Design of Biological Waste Treatment Plants (Kranert)	W			X		BSL		3	
100310	Design of Thermal Waste Treatment Plants (Scheffknecht)	W			X		BSL		3	
39140	Sustainable Production Processes (Tovar/Schütz)	W			X		BSL		3	
39660	Biological Waste Air Purification (Engesser/Dobslaw)	W			X		BSL		3	
76190	Nuclear Waste (Starflinger /Nigbur)	W		X			BSL		3	
103190	Principles of Bioremediation and Bioenergy Processes (Zandoná Filho/Schönberger)	W			X		BSL		3	
Elective Module(s) in German 3 ECTS										
15400	Biogas (Clauß/Rettenberger)	W		X			BSL		3	
15390	Umweltrelevanz abfalltechnischer Anlagen (Clauß/Huber)	W		X			BSL		3	
Practical work 3 ECTS										
67060	Sanitary Engineering – Practical Work Part II (Reiser)	WP			X		USL		3	



Specialized Area										
WASTE WATER										
18										
2c	Module No	Core Module(s) 6 ECTS								
	19310	Urban Drainage and Design of Wastewater Treatment Plants (Schönberger/Dittmer)	WP		X				PL	6
		Elective Module(s) in English 6 ECTS								
	19330	Industrial Waste Water (Koch/Menzel)	W		X				PL	6
	19360	Water Quality and Treatment (Mayer/Schönberger)	W		X				PL	6
	36450	Special Aspects of Urban Water Management (Minke/Dittmer/König)	W		X				LBP	6
	103200	Thermal Treatment of Sewage Sludge, Phosphorus Recycling Processes and related application of the right to access environmental Information (Duelli/Schönberger)	W		X				PL	6
		Elective Module(s) in German 6 ECTS								
	16060	Umweltanalytik - Wasser und Boden (Kuch/Koch/Metzger)	W		X		USL-V		PL	6
		Elective Module(s) in English 3 ECTS								
	58100	Constructed Wetlands for Waste Water Treatment (Weiß/Akratos)	W		X		BSL			3
	39650	Basics of Membrane Technology (Kerres)	W		X		BSL			3
	41010	Modeling of Two Phase Flows (Laurien)	W		X		BSL			3
	59600	Chemical Reaction Engineering (Kerres)	W		X		BSL			3
	70430	Operational Technology for Waste Treatment (Sawodny/Birk)	W		X		BSL			3
	103190	Principles of Bioremediation and Bioenergy Processes (Zandoná Filho/Schönberger)	W		X		BSL			3
		Practical work 3 ECTS								
	67080	Sanitary Engineering – Practical Work Part I (Kuch)	WP		X		USL			3



3	Module No	Elective Module(s)	W		X	X		BSL	PL	3, 6 or 12	12	
		Core Module of the third (not chosen) specialized area	W		X	X			PL	6		
		Elective Module	W		X	X			PL	6		
		Elective Module	W		X	X		USL-V	PL	6		
		Elective Module	W		X	X			LBP	6		
		Elective Module	W		X	X		BSL		3		
		Practical Work	W		X	X		BSL		3		
		Practical Work	W		X	X		USL		3		
	67070	Industrial Internship	W			X		USL		6		
	81320	Student Research Project	W		X	X			PL	12		
	Elective Module(s) in English											
	103180	Project Management (Bosse-Mettler/Cattaneo)	W			X		BSL			3	
	Elective Module(s) in German											
34540	Ökobilanz und Nachhaltigkeit (Mehra/Graf/Ko/Lindner/Schneider/Albrecht)	W			X		USL	PL		6		
36930	Maschinen und Apparate der Trenntechnik (Piesche)	W			X			PL		6		
4	German Courses and Key Qualifications											
	60940	German as a foreign language Part I	WP	X				USL			3	6
	60950	German as a foreign language Part II	WP		X			USL			3	
		Key Qualifications (if: German proficiency level A2)	WP		X	X		USL			3	6
5	81310	Master Thesis	P				X		PL		30	

Explanation of the abbreviations:

- P = Pflichtmodul = Compulsory Module
- WP = Wahlpflichtmodul = Compulsory „Optional“ Module
- W = Wahlmodul = Elective Module

Generally, there are two types of examinations:

- Studienleistungen (SL):
 - USL = unbenotete Studienleistung → Examination without grade (pass or fail)
 - USL-V = Zulassungsvoraussetzung für Prüfungsleistung → Prerequisite for an examination
 - BSL = benotete Studienleistung → Innovative examination forms (e.g. case studies)
- Prüfungsleistungen (PL):
 - PL = Prüfungsleistung → Classical examination (written or oral)
 - LBP = Lehrveranstaltungsbegleitende Prüfung → Examination in the form of e.g. a seminar, paper, etc.