

Degree Structure for Academic Year 2019-2020  
 Master of Science (Tech), Degree Programme in Environmental Engineering  
 2 years, 120 ECTS

Course			Lukukausi									
Code	Course name	ECTS	Period	Autumn 2019	Spring 2020	Autumn 2020	Spring 2021					
<b>Energiajärjestelmät /Energy Systems, 60 ECTS</b>												
488209S	Renewable Energy	5	1	5								
488507S	Energy Systems Engineering	5	1	5								
72xxxxS	Energy Economics	6	4			6						
488506S	Sustainable Urban Energy	5	4			5						
488501S	Smart Grid I: Integrating renewable energy sources	5	2		5							
488502S	Smart Grid II: Smart buildings/smart customers in the smart grid	5	3			5						
488503S	Smart Grid III: Smart energy networks	5	4			5						
488206S	Sustainable Energy Project	5	1,2				2,5	2,5				
488504S	Fundamentals of Nuclear Energy	5	1				5					
<i>Choose 15 ECTS of following courses</i>				5	5	5	5					
488216S	Environmental Engineering Project (Industrial Ecology)	5	1,2	0	0							
488402S	Sustainable Development	5	2			0	0					
488143A	Environmental Impact Assessment	5	1				0					
477224S	Biojalostamot	5	2					0				
477309S	Process and environmental catalysis	5	1	0								
477625S	Voimalaitosautomaatio	5	3			0						
<b>SUPPLEMENTARY COURSES, 30 ECTS</b>												
477022S	Numerical analysis	5	3			5						
477005S	Advanced practical training	5	2					5				
	Free choice courses, Energy Systems	20			5	4	2,5	2,5				
<b>MASTER'S THESIS, 30 ECTS</b>												
488980S	Master's Thesis	30	3,4						15	15		
480429S	Maturity Test	0	4							0		
		120			15	15	14	16	15	15	15	15

Course			Term									
Code	Course name	ECTS	Period	Autumn 2019	Spring 2020	Autumn 2020	Spring 2021					
<b>Teollisuuden ympäristötekniikka /Industrial Environmental Engineering, 60 ECTS</b>												
477309S	Process and environmental catalysis	5	1	5,0								
488402S	Sustainable Development	5	2			2,5	2,5					
488203S	Industrial Ecology	5	1	5,0								
488216S	Environmental Engineering Project	5	3,4			2,5	2,5					
488209S	Renewable Energy	5	4	5,0								
488214S	Air Pollution Control Engineering - Practical Solutions	5	2		5,0							
488215S	Industry and Environment (Environmental Load of Industry)	5	2		5,0							
477207S	Industrial Water and Wastewater Technologies	5	3			5,0						
477306S	Non-ideal reactors	5	3			5,0						
477312S	Science and Professional Ethics	5	3			5,0						
<i>Choose 10 ECTS of following courses</i>				5,0		5,0						
477224S	Biojalostamot	5	2					0,0				
477223S	Advanced Process Design	5	3,4			0,0	0,0					
488206S	Sustainable Energy Project	5	1,2					0,0	0,0			
477310S	Advanced catalytic processes	5	2		0,0							
477311S	Advanced separation processes	5	2					0,0				
477225S	Kinetiikka	5	3,4									
488143A	Environmental Impact Assessment	5	1					0,0				
477307S	Research Methodology	5	1-4	0,0	0,0	0,0	0,0					
<b>SUPPLEMENTARY COURSES, 30 ECTS</b>												
477022S	Numerical analysis	5	3			5,0						
477005S	Advanced practical training	5	2					5,0				
	Free choice courses	20						10,0	10,0			
<b>MASTER'S THESIS, 30 ECTS</b>												
488980S	Master's Thesis	30	3,4						15	15		
480429S	Maturity Test	0	4							0		
	(*)The course is arranged in alternate years	120			15	15	25	5	15	15	15	15

Course			Term						
Code	Course Name	ECTS	Period	syksy 2018	kevät 2019	syksy 2019	kevät 2020		
<b>Vesi- ja ympäristötekniikka / hydrology and water management, 60 ECTS</b>									
488110S	Water and Wastewater Treatment	5	1	5					
488134S	Hydrogeology and groundwater engineering	5	3		5				
488127S	Field measurements, site investigations and geotechnical tests	5	1,2	2,5	2,5				
488128S	Laboratory tests in water resources engineering	5	3,4		2,5	2,5			
488144A	Water distribution and sewage networks	5	2		5				
488143S	Environmental Impact Assessment	5	1			5			
488136S	Integrated water resources management (*)	5	1	5					
<i>Choose five of following</i>				5	10	5	5		
488122S	Statistical Hydrology (*)	5	2		0				
488138S	Cold climate hydrology (*)	5	2				0		
488139S	Surface water quality modelling (*)	5	1			0			
488123S	River Engineering and Hydraulic Structures (*)	5	2				0		
488140S	Groundwater modelling and management	5	4		0				
488131S	Geoenvironmental engineering (Geoympäristötekniikka)	5	1			0			
488141S	Urban hydrology	5	3		0				
<b>SUPPLEMENTARY COURSES, 30 ECTS</b>									
477002S	Numerical analysis	5	3		5				
477005S	Advanced practical training	5	2				5		
	Free choice courses	20		2,5	7,5	2,5	2,5	10	5
<b>MASTER'S THESIS, 30 ECTS</b>									
488980S	Master's Thesis	30	3,4						15 15
480429S	Maturity Test	0	4						0
	(*)The course is arranged in alternate years	120		15	15	15	15	15	15 15