

Environmental Engineering

Study Year 1 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	20/21 sp1					20/21 sp2					20/21 sp3					20/21 sp4				
								F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S
EMAB65	7.5	G1	-	S	Calculus in One Variable B1		KS KE U W T	50	30	0	0	120															
VVRA01	15	G1	X	E	Hydrology and Aquatic Ecology		KS KE U W T	40	42	0	0	112	26	23	0	0	76										
EMAB70	7.5	G1	-	S	Calculus in One Variable B2		KS KE U W T						50	30	0	0	120										
FAFA70	7.5	G1	-	S	Energy and Environmental Physics	X	KS KE U W T											40	28	10	0	122					
FMAA20	7.5	G1	-	S	Linear Algebra with Introduction to Computer Tools		KS KE U W T											48	24	0	0	130					
VTGA05	5	G1	-	S	Engineering Geology		KS KE U W T																32	16	16	0	80
EXTA01	10	G1	X	E	Terrestrial Ecology		KS KE U W T																36	32	56	0	100

[FAFA70](#) Energy and Environmental Physics: *Signing up for labgroup at introductory lecture is compulsory.*

Study Year 2 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	20/21	20/21	20/21	20/21																		
								sp1	sp2	sp3	sp4																		
								F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S		
FMAB30	6	G1	-	S	Calculus in Several Variables		KS KE U W T	44	16	2	0	100																	
KASA01	9	G1	-	S	Fundamental Chemistry		KS KE U W T	50	30	10	0	150																	
FHLA05	7.5	G1	X	E	Engineering Mechanics		KS KE U W T						42	42	0	0	120												
KFKA10	8	G1	-	S	Thermodynamics and Surface Chemistry		KS KE U W T						34	34	10	0	136												
KASA05	5	G1	-	S	Organic Chemistry		KS KE U W T											32	8	8	0	100							
KMBF01	15	G2	X	E	Molecular Cell Biology		KS KE U W T											38	6	50	0	180	12	14	0	0	100		
FKFF05	5	G2	X	E	Atmospheric Chemistry and Physics		KS KE U W T																20	12	0	4	100		
KOOF01	5	G2	X	E	Applied Aquatic Chemistry		KS KE U W T																19	28	10	0	76		

Study Year 3 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	20/21	20/21	20/21	20/21																		
								sp1	sp2	sp3	sp4																		
								F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S		
EMSE75	7.5	G2	-	S	Mathematical Statistics, Basic Course		KS KE U W T	16	16	20	2	130																	
VVRF10	7.5	G2	X	E	Fluid Mechanics		KS KE U W T	40	28	0	0	132																	
MIOA12	6	G1	-	S	Managerial Economics, Basic Course	X	KS KE U W T						50	12	5	0	93												
KETF40	15	G2	X	E	Mass Transfer Processes in Environmental Engineering		KS KE U W T						24	46	3	0	167	15	42	28	0	75							
FMIF05	12	G2	-	S	Environmental Management		KS KE U W T											44	0	8	5	187	0	0	2	1	73		
RRTF10	6	G2	X	E	Systems Engineering		KS KE U W T																22	22	8	0	110		

[MIOA12](#) Managerial Economics, Basic Course: *Only one of the courses [MIO012](#) and [MIOA01](#) may be included in a degree.*

Study Year 3 (Elective Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	20/21																								
								sp1	sp2					sp3					sp4													
								F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S					
EDAA45	7.5	G1	-	S	Introduction to Programming	X	KS KE U W T	24	14	12	0	40	24	14	10	0	62															
EDAA65	6	G1	-	S	Programming, First Course		KS KE U W T											20	7	8	0	45	16	0	24	0	40					
EITF90	7.5	G2	-	S	Electromagnetics and Electronics		KS KE U W T																34	28	4	0	134					
MVKN15	7.5	A	-	S	Energy Supply Systems		KS KE U W T																4	24	0	2	170					
FMSF65	7.5	G2	X	E	Design of Experiments		KS KE U W T																14	14	14	1	150					

[EDAA45](#) Introduction to Programming: [EDAA45](#) is studied besides compulsory courses in W3. That means you will study at a 125% pace during the semester if you choose all obligatory courses + [EDAA45](#).

Specialisation es - Energy Systems

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1				sp2				sp3				sp4							
											F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S
MVKP01	7.5	A	V	4	3	-	S	District Heating and Cooling		KS KE U W T	15	20	9	4	147															
AEBF25	7.5	G2	V	4	4	X	E	Solar Heating Technology, Basic Course		KS KE U W T	18	12	14	1	155															
EMIN25	7.5	A	V	4	4	-	S	Energy Systems Analysis: Energy, Environment and Natural Resources		KS KE U W T	18	6	0	0	76	18	6	0	0	76										
EMIN30	7.5	A	V	4	4	-	S	Environmental Systems Studies: Life Cycle Analysis		KS KE U W T	12	6	0	1	81	10	6	0	1	83										
MVKN35	6	A	V	4	4	-	S	Energy Markets		KS KE U W T						4	24	0	2	130										
MVKP10	7.5	A	V	4	4	X	E1	Energy Engineering		KS KE U T						28	28	0	0	144										
MVKN20	7.5	A	V	4	4	-	S	Energy Utilization		KS KE U W T										4	24	0	2	170						
AEBF30	7.5	G2	V	4	4	X	E	Photovoltaic Systems, Basic Course		KS KE U W T										25	9	10	1	155						
EMIN20	7.5	A	V	4	4	-	S	Energy Systems Analysis: Renewable Sources of Energy		KS KE U W T										28	12	0	1	92	14	4	0	1	48	
EMIN05	7.5	A	V	4	4	X	E	Environmental System Studies: Climate, Science and Politics		KS KE U W T										14	6	0	0	80	16	4	0	0	80	
MVKN15	7.5	A	V	4	3	-	S	Energy Supply Systems		KS KE U W T														4	24	0	2	170		
EMIN50	7.5	A	V	4	4	X	E	Environmental Issues, Project Course	X	KS KE U W T														4	12	0	5	179		
MVKF25	7.5	G2	V	4	4	X	E1	Hydrogen, Batteries and Fuel Cells		KS KE U W T														21	14	0	20	145		
MVKN30	7.5	A	V	5	5	-	S	Advanced Efficient Energy Systems	X	KS KE U W T	2	9	0	3	88	0	9	0	1	88										
MVKP15	7.5	A	V	5	2	X	E	Wind Power Technology		KS KE U T						28	28	4	0	140										
EIEN10	7.5	A	V	5	2	X	E1	Wind Power Systems	X	KS KE U W T	Course on hold																			

[EMIN50](#) Environmental Issues, Project Course: Only one of the following two Project Courses - [EMIN50](#) Environmental Issues, Project Course and [MVKN30](#) Advanced Efficient Energy Systems - may be included in the Energy System Specialisation

[MVKN30](#) Advanced Efficient Energy Systems: Only one of the following two Project Courses - [EMIN50](#) Environmental Issues, Project Course and [MVKN30](#) Advanced Efficient Energy Systems - may be included in the Energy System Specialisation

[EIEN10](#) Wind Power Systems: The course is not offered 2020/21.

Specialisation ms - Environmental Systems

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1				sp2				sp3				sp4											
											F	O	L	H	S	F	O	L	S	F	O	L	S	F	O	L	S	F	O	L	S	F	O	L
FMIF40	15	G2	V	4	4	-	S	Solid Waste Management and Resource Management		KS KE U W T	28	7	2	2	161	28	6	1	3	162														
EMIN25	7.5	A	V	4	4	-	S	Energy Systems Analysis: Energy, Environment and Natural Resources		KS KE U W T	18	6	0	0	76	18	6	0	0	76														
FMIN15	7.5	A	V	4	4	-	S	Environmental Management Systems	X	KS KE U W T	21	4	0	1	74	5	8	2	1	84														
FMIN30	7.5	A	V	4	4	-	S	Environmental Systems Studies: Life Cycle Analysis		KS KE U W T	12	6	0	1	81	10	6	0	1	83														
EXTG40	15	G2	V	4	4	-	S	Environmental Law	X	KS KE U W T											51	16	0	2	331									
EXTQ15	15	A	V	4	4	-	S	Applied Ecotoxicology		KS KE U W T											84	116	0	0	200									
FKFN35	7.5	A	V	4	3	X	E	Methods for Environmental Monitoring		KS KE U W T											10	0	10	2	80	8	0	4	4	80				
FMIN05	7.5	A	V	4	4	X	E	Environmental System Studies: Climate, Science and Politics		KS KE U W T											14	6	0	0	80	16	4	0	0	80				
FMIN50	7.5	A	V	4	4	X	E	Environmental Issues, Project Course	X	KS KE U W T																	4	12	0	5	179			
FMIN45	7.5	A	V	4	4	-	S	Environmental Impact Assessment		KS KE U W T																	36	22	0	2	140			
VTGN01	7.5	A	V	5	4	X	E	Field Investigation Methodology		KS KE U W T	22	24	20	4	130																			

[FMIN15](#) Environmental Management Systems: Replaces [FM110](#) Environmental management systems

[EXTG40](#) Environmental Law: The course is to be studied with Science students (MNXC01 - Environmental law)

[FMIN50](#) Environmental Issues, Project Course: Only one of the following two Project Courses - [FMIN50](#) Environmental Issues, Project Course and [MVKN30](#) Advanced Efficient Energy Systems - may be included in the Energy System Specialisation

Specialisation p - Process Design

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1				sp2				sp3				sp4							
											F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S
KETN20	15	A	O	4	4	X	E1	Sustainable Process Design		KS KE U W T	20	22	22	0	136	18	20	24	0	138										
KETN30	7.5	A	V	4	4	X	E	Biochemical Reaction Engineering		KS KE U W T	30	43	0	0	127															
KBTF15	7.5	G2	V	4	3	X	E1	Bioprocess Technology	X	KS KE U W T	36	8	45	0	90															
KETF20	7.5	G2	V	4	4	X	E1	Chemical Engineering Processes		KS KE U W T	40	4	6	0	148															
VVAN25	7.5	A	V	4	4	X	E	Water and Wastewater Treatment	X	KS KE U W T						30	44	8	0	118										
KBTF10	7.5	G2	V	4	3	X	E	Environmental Biotechnology		KS KE U W T						35	0	45	0	120										
KETN10	7.5	A	V	4	4	X	E	Applied Transport Phenomena		KS KE U W T						20	36	12	0	132										
KETN01	7.5	A	V	4	3	X	E1	Process Simulation		KS KE U W T											16	68	4	0	112					
KETF35	7.5	G2	V	4	3	-	S	Loss Prevention		KS KE U W T											16	56	1	0	127					
EMIN20	7.5	A	V	4	4	-	S	Energy Systems Analysis: Renewable Sources of Energy		KS KE U W T											28	12	0	1	92	14	4	0	1	48
KETN25	15	A	V	4	4	X	E1	Feasibility Studies on Industrial Plants		KS KE U W T											0	0	18	0	182	0	0	0	0	200
KBTN05	7.5	A	V	5	4	X	E	Downstream Processing in Biotechnology		KS KE U T						20	28	16	0	90										

[KBTF15](#) Bioprocess Technology: *The course is given in English in study period 1 for the W programme*

[VVAN25](#) Water and Wastewater Treatment: *The date and time of the exam is announced by the course lecturer*

Specialisation vr - Water Resources Engineering

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1				sp2				sp3				sp4						
											F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H
VVRF01	7.5	G2	V	4	3	X	E	Integrated Water Resources Management: International Aspects		KS KE U W T	22	4	0	1	173														
VVAN30	7.5	A	V	4	4	X	E	Urban Storm Water Management		KS KE U T	24	36	16	0	124														
VVAN25	7.5	A	V	4	4	X	E	Water and Wastewater Treatment	X	KS KE U W T						30	44	8	0	118									
VTGN10	7.5	A	V	4	4	X	E	Groundwater Engineering		KS KE U W T						46	26	1	0	127									
VTGN05	7.5	A	V	4	4	X	E	Groundwater Modelling and Contaminant Transport		KS KE U W T										20	34	0	5	141					
VVAN20	7.5	A	V	4	4	X	E	Advanced Wastewater Treatment		KS KE U W T										18	22	0	0	60	4	10	8	0	78
VVRN35	7.5	A	V	4	3	X	E	Hydromechanics		KS KE U W T										16	8	0	0	76	16	8	0	0	76
EXTG75	7.5	G2	V	4	4	X	E1	GIS for Built and Natural Environments		KS KE U W T														16	2	34	0	148	
VVRN20	7.5	A	V	4	4	X	E	Water, Society and Climate Change		KS KE U W T														32	0	0	1	167	
VVRN10	7.5	A	V	5	4	X	E	Rainfall Runoff Modelling		KS KE U W T	28	4	12	1	155														
VSMN25	7.5	A	V	5	4	X	E1	The Finite Element Method - Flow Analysis		KS KE U W T	32	32	0	0	136														
VVRN40	7.5	A	V	5	4	X	E	Environmental Hydraulics		KS KE U W T	32	16	0	0	152														
VVRN30	7.5	A	V	5	4	X	E	Coastal Hydraulics		KS KE U W T						28	26	0	0	146									
VVRN25	7.5	A	V	5	4	X	E	Pipe System Engineering and Hydraulics		KS KE U W T						26	12	0	2	160									

[VVAN25](#) Water and Wastewater Treatment: *The date and time of the exam is announced by the course lecturer*

Elective Courses - W

Course Code	Credits	Cycle	Year	Language			Course Name	Footnote	Links	sp1	sp2	sp3	sp4																								
				From year	S.Ex. stud.																																
													F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S					
EMAA60	7.5	G1	1	1	-	S	Introduction to Real Analysis		KS KE U W T	26	0	0	0	174																							
EITA05	4.5	G1	3	1	-	S	History of Technology		KS KE U W T							14	0	0	0	40	14	7	0	0	40												
VVR05	7.5	G2	3	3	-	E	International Summer Water Resources Research School	X	KS KE U W T												10	10	50	10	120												
IYT000	15	G2	4	3	-	S	Engineering Training Course		KS KE U W T	0	0	0	0	400																							
MVKN50	7.5	A	4	4	X	E1	Introduction to Combustion Engines		KS KE U W T	30	28	20	10	100																							
EXTQ10	15	A	4	4	X	E1	Limnology		KS KE U W T	84	112	0	0	194																							
EDAA01	7.5	G1	4	3	-	S	Programming - Second Course		KS KE U W T	14	0	6	0	72	14	0	8	0	86																		
MAMF55	7.5	G2	4	4	X	E1	Aerosol Technology		KS KE U W T						38	12	14	0	125																		
IYT000	15	G2	4	3	-	S	Engineering Training Course		KS KE U W T						0	0	0	0	400																		
ESSF15	5	G2	4	4	-	S	Electrical Engineering		KS KE U W T											40	24	8	1	60													
IYT000	15	G2	4	3	-	S	Engineering Training Course		KS KE U W T											0	0	0	0	400													
VBEF01	7.5	G2	4	4	-	S	Project Management		KS KE U W T											28	41	4	2	125													
MAMN35	7.5	A	4	4	-	S	Risk Analysis Methods for Health and Environment		KS KE U T											24	12	16	2	146													
EMAF10	5	G2	4	4	-	S	Applied Mathematics - Linear systems		KS KE U W T											26	10	4	0	93													
MVKN60	7.5	A	4	4	X	E1	Theory of Turbo Machinery		KS KE U W T											28	28	2	0	142													
FBRF01	7.5	G2	4	3	X	E	Fundamental Combustion		KS KE U W T												28	8	4	60	100												
ASBF10	7.5	G2	4	4	-	S	Sustainable Urban Design		KS KE U T												37	8	0	2	153												
KIIF01	7.5	G2	4	4	X	E1	Industrial Environmental Management		KS KE U W T												28	0	0	32	80												
IYT000	15	G2	4	3	-	S	Engineering Training Course		KS KE U W T												0	0	0	0	400												
EXTN25	15	A	4	4	X	E	Water Management		KS KE U T												43	69	0	80	208												

[VVR05](#) International Summer Water Resources Research School: *Most of the course is taught outside normal semester time.*

Externally Elective Courses - W

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1				sp2				sp3				sp4										
										F	O	L	H	S	F	O	L	S	F	O	L	S	F	O	L	S	F	O	L	S		
GEMA20	7.5	G1	3	1	-	E	English for Engineers		KS KE U W T	30	0	0	0	70	20	0	0	0	0	80												
GEMA25	7.5	G1	3	1	-	S	German for Engineers		KS KE U W T	0	40	0	0	60	0	40	0	0	0	60												
GEMA20	7.5	G1	3	1	-	E	English for Engineers		KS KE U W T									30	0	0	0	70	20	0	0	0	0	80				
GEMA01	7.5	G1	3	1	-	S	French for Engineers: Language, Culture and Society, First Course		KS KE U W T									0	26	0	0	74	0	26	0	0	0	74				
GEMA65	7.5	G1	3	1	-	S	Chinese for Engineers		KS KE U W T									0	20	0	0	80	0	20	0	0	0	80				
GEMA70	15	G1	4	1	-	S	Japanese for Engineers		KS KE U W T									0	34	0	0	165	0	32	0	0	0	165				

Bachelor's Projects - W

The list contains the bachelor's projects that are included in the W programme.

Links

Course Code	Credits	Course Name	Links
MAML10	15	Bachelor Project in Aerosol Technology	KS KE U W
EXTL02	15	Bachelor Project in Ecology	KS KE U
PHYL01	15	Bachelor Project in Physics	KS KE U
KETL01	15	Bachelor Project in Chemical Engineering	KS KE U
FMIL01	15	Bachelor Project in Environmental Studies	KS KE U
VTGL01	15	Bachelor Project in Engineering Geology	KS KE U
KMBL01	15	Bachelor Project in Applied Microbiology	KS KE U W
VVRL01	15	Bachelor Project in Water Resources Engineering	KS KE U
KBKL01	15	Bachelor Project in Applied Biochemistry	KS KE U W

Degree Projects - W

The list contains the degree project courses that are included in the W programme.

Links

Course Code	Credits	Course Name	Links
MAMM05	30	Degree Project in Aerosol Technology	KS KE U W
KBTM05	30	Degree Project in Biotechnology	KS KE U W
EXTM20	30	Degree Project in Ecology	KS KE U
AEBM05	30	Degree Project in Energy and Building Design	KS KE U
MVKM01	30	Degree Project in Energy Sciences	KS KE U W
PHYM01	30	Degree Project in Physics	KS KE U W
KETM05	30	Degree Project in Chemical Engineering	KS KE U W
FMIM01	30	Degree Project in Environmental Studies	KS KE U W
VTGM05	30	Degree Project in Engineering Geology	KS KE U
VVRM05	30	Degree Project in Water Resources Engineering	KS KE U W
VVAM05	30	Degree Project in Water and Environmental Engineering	KS KE U W