Environmental Engineering

Study Year 1 (Mandatory Courses)

Course Code	Credits	Cycle	Language S.Ex. stud.	Language	Course Name	Footnote	Links	19/20 sp1					19/20 sp2					19/20 sp3					19/20 sp4				
								F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S
FMAA05	15	G1	-	S	Calculus in One Variable		KS KE U W T	50	30	0	0	133	50	30	0	0	107										
VVRA01	15	G1	X	E	Hydrology and Aquatic Ecology		KS KE U W T	40	42	0	0	112	26	23	0	0	76										
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	Language S.Ex. stud.	Language	Course Name	Footnote	Links	19/20 sp1					19/20 sp2					19/20 sp3					19/20 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	Language S.Ex. stud.		Course Name	Footnote	Links	19/20 sp1					19/20 sp2					19/20 sp3					19/20 sp4				
								F	O	L	H	S	F	O	L	H	S	F	O	L	H	S	F	O	L	H	S
FMSF75	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
FRTF10	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	Language S.Ex. stud.		Course Name	Footnote	Links	19/20 sp1					19/20 sp2					19/20 sp3					19/20 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	24	10	15	6	145															
FMIN25	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										
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										
MVKN35	6	A	V	4	4	-	S	Energy Markets		KS KE U W T						4	24	0	2	130										
MVKN65	7.5	A	V	4	3	X	E1	Power Plant Technology		KS KE U W 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					
FMIN20	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
FMIN05	7.5	A	V	4	4	X	E1	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
FBRF01	7.5	G2	V	4	3	X	E	Fundamental Combustion		KS KE U W T																28	8	4	60	100
FMIN50	7.5	A	V	4	4	X	E	Environmental Issues, Project Course		KS KE U W T																4	12	0	5	179
MVKN30	7.5	A	V	5	5	-	S	Advanced Efficient Energy Systems		KS KE U W T	2	9	0	3	88	0	9	0	1	88										
EIEN10	7.5	A	V	5	2	X	E1	Wind Power Systems		KS KE U W T						28	10	8	16	110										

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	H	S	F	O	L	H	S	F	O	L	H	S
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										
FMIN25	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	E1	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		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 FMI110 Environmental management systems*
EXTG40 Environmental Law: *The course is to be studied with Science students (MNXC01 - Environmental law)*

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															
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										
KBTF10	7.5	G2	V	4	3	X	E	Environmental Biotechnology		KS KE U W T						24	0	35	0	50										
KETN10	7.5	A	V	4	4	X	E	Applied Transport Phenomena		KS KE U 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					
FMIN20	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*

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	S
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															
VVAN05	15	A	V	4	4	X	E	Urban Waters		KS KE U W T	34	50	11	0	105	16	49	8	0	127										
VTGN10	7.5	A	V	4	4	X	E	Groundwater Engineering		KS KE U W T						46	28	1	0	125										
VTGN05	7.5	A	V	4	4	X	E	Groundwater Modelling and Contaminant Transport		KS KE U W T											20	34	0	12	134					
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
EXTF01	7.5	G2	V	4	4	X	E1	Geographical Information Systems for Landscape Studies		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										

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	H	S	F	O	L	H	S	F	O	L	H	S
FMAA60	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
VVRF05	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	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										
IYT000	15	G2	**4**	3	-	S	Engineering Training Course		KS KE U W						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											0	0	0	0	400					
MAMN35	7.5	A	**4**	4	-	S	Risk Analysis Methods for Health and Environment		KS KE U T											24	12	16	2	146					
AEBF30	7.5	G2	**4**	4	X	E	Photovoltaic Systems, Basic Course		KS KE U W T											24	10	10	6	150					
FMAF10	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					
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																0	0	0	0	400
EXTN25	15	A	**4**	4	X	E	Water Management		KS KE U T																43	69	0	80	208

VVRF05 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	H	S	F	O	L	H	S	F	O	L	H	S
GEMA20	7.5	G1	3	1	-	E	English for Engineers	X	KS KE U W T	30	0	0	0	70	20	0	0	0	80									
GEMA25	7.5	G1	3	1	-	S	German for Engineers	X	KS KE U W T	0	40	0	0	60	0	40	0	0	60									
GEMA20	7.5	G1	3	1	-	E	English for Engineers	X	KS KE U W T											30	0	0	0	70	20	0	0	0	80
GEMA01	7.5	G1	3	1	-	S	French for Engineers: Language, Culture and Society, First Course	X	KS KE U W T											0	26	0	0	74	0	26	0	0	74
GEMA65	7.5	G1	3	1	-	S	Chinese for Engineers	X	KS KE U W T											0	20	0	0	80	0	20	0	0	80
GEMA70	15	G1	4	1	-	S	Japanese for Engineers	X	KS KE U W T	0	34	0	0	165	0	32	0	0	165									
BMEA01	6	G1	4	4	-	S	Medicine for Engineers	X	KS KE U W T											36	0	0	0	40	36	0	0	0	40

GEMA20 English for Engineers: *LTH common courses (courses where the course code begins with GEM) counts as external elective courses in the degree requirements for students admitted autumn 2011 and later.*
GEMA25 German for Engineers: *LTH common courses (courses where the course code begins with GEM) counts as external elective courses in the degree requirements for students admitted autumn 2011 and later.*
GEMA01 French for Engineers: Language, Culture and Society, First Course: *LTH common courses (courses where the course code begins with GEM) counts as external elective courses in the degree requirements for students admitted autumn 2011 and later.*
GEMA65 Chinese for Engineers: *LTH common courses (courses where the course code begins with GEM) counts as external elective courses in the degree requirements for students admitted autumn 2011 and later.*
GEMA70 Japanese for Engineers: *LTH common courses (courses where the course code begins with GEM) counts as external elective courses in the degree requirements for students admitted autumn 2011 and later.*
BMEA01 Medicine for Engineers: *The course is offered every other academic year and will be given in 2019/20, 2021/22.*

Bachelor's Projects - W

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

			Links
Course Code	**Credits**	**Course Name**	
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
KOKL01	15	Bachelor Project in Organic Chemistry	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.

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
MAMM10	30	Degree Project in Ergonomics	KS KE U W
PHYM01	30	Degree Project in Physics	KS KE U W
KETM05	30	Degree Project in Chemical Engineering	KS KE U
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