

Electrical Engineering

Study Year 1 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	19/20	19/20	19/20	19/20
								sp1	sp2	sp3	sp4
FMAA05	15	G1	-	S	Calculus in One Variable		KS KE U W T	1	2		
EITA35	15	G1	-	S	Electronics		KS KE U W T	1	2	3	
EDAA55	9	G1	-	S	Programming, First Course		KS KE U W T		2	3	
FMAB20	6	G1	-	S	Linear Algebra		KS KE U W T			3	
FMAB30	6	G1	-	S	Calculus in Several Variables		KS KE U W T				4
FAFA01	9	G1	-	S	Physics - Mechanics and Waves		KS KE U W T				4

Study Year 2 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	19/20	19/20	19/20	19/20
								sp1	sp2	sp3	sp4
FAFA35	6	G1	-	S	Physics - Thermodynamics and Atomic Physics		KS KE U W T	1			
EITF65	9	G2	-	S	Design of Digital Circuits - A Systems Approach		KS KE U W T	1	2		
EDAA01	7.5	G1	-	S	Programming - Second Course		KS KE U W T	1	2		
MIOA12	6	G1	-	S	Managerial Economics, Basic Course	X	KS KE U W T		2		
ESSF01	8	G2	-	S	Analogue Circuits		KS KE U W T		2	3	4
EITF70	6	G2	-	S	Computer Organization		KS KE U W T			3	
EMAF01	7	G2	-	E1	Mathematics - Analytic Functions		KS KE U W T			3	

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links					
							19/20 sp1	19/20 sp2	19/20 sp3	19/20 sp4		
EMAF05	7	G2	-	E1	Mathematics - Systems and Transforms		KS	KE	U	W	T	4
ESSE20	4.5	G2	-	S	Physics of Devices		KS	KE	U	W	T	4

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

Study Year 3 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	19/20	19/20	19/20	19/20
								sp1	sp2	sp3	sp4
ERTF05	7.5	G2	-	S	Automatic Control, Basic Course		KS KE U W T	1			
EITF75	6	G2	X	E1	Systems and Signals		KS KE U W T	1			
EITF80	9	G2	X	E	Electromagnetic Fields		KS KE U W T	1	2		
EMSF20	7.5	G2	-	S	Mathematical Statistics, Basic Course		KS KE U W T		2		
ETSF15	5	G2	-	S	Communication Systems and Networks		KS KE U W T			3	
ESSE15	5	G2	-	S	Electrical Engineering		KS KE U W T			3	
ESSE10	5	G2	-	S	Electrical Measurements		KS KE U W T			3	

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links						
							19/20 sp1	19/20 sp2	19/20 sp3	19/20 sp4			
BMEF01	5	G2	-	S	Project in Electronics		KS	KE	U	W	T	3	4
EMNF10	6	G2	X	E1	Numerical Analysis		KS	KE	U	W	T		4
EMIF35	4	G2	-	S	Sustainable Development from an Electro-technological Perspective		KS	KE	U	W	T		4

Study Year 3 (Elective Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links						
							19/20 sp1	19/20 sp2	19/20 sp3	19/20 sp4			
EITA50	7.5	G1	X	S	Signal Processing in Multimedia	X	KS	KE	U	W	T		4

[EITA50](#) Signal Processing in Multimedia: *Students admitted to the China specialisation takes this course in the autumn of year three, in China.*

Specialisation bg - Images and Computer Graphics

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
												sp1	sp2	sp3	sp4	
EDAF80	7.5	G2	V		4	4	X	E	Computer Graphics		KS KE U W T	1				
EMAN20	7.5	A	V		4	4	X	E1	Image Analysis		KS KE U W T	1				
EDAN20	7.5	A	V		4	4	X	E	Language Technology		KS KE U W T	1				
EITN60	7.5	A	V		4	4	X	E	Optimum and Adaptive Signal Processing		KS KE U W T	1				
EDAN70	7.5	A	V		4	4	X	E1	Project in Computer Science	X	KS KE U W T	1				
EMSF10	7.5	G2	V		4	4	X	E	Stationary Stochastic Processes		KS KE U W T	1				
EMAN70	6	A	V		4	4	X	E1	Matrix Theory		KS KE U W T	1	2			

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
												sp1	sp2	sp3	sp4	
EDAN95	7.5	A	V		4	4	X	E	Applied Machine Learning		KS KE U W T			2		
EDAN70	7.5	A	V		4	4	X	E1	Project in Computer Science	X	KS KE U W T			2		
BMEN15	7.5	A	V		4	4	X	E	Signal Separation - Independent Components		KS KE U W T			2		
FMSN20	7.5	A	V		4	4	X	E	Spatial Statistics with Image Analysis		KS KE U W T			2		
EDAP01	7.5	A	V		4	4	X	E	Artificial Intelligence	X	KS KE U W T				3	
EMAN85	6	A	V		4	4	X	E1	Computer Vision		KS KE U W T				3	
EDAN70	7.5	A	V		4	4	X	E1	Project in Computer Science	X	KS KE U W T				3	

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
											sp1	sp2	sp3	sp4	
EDAN70										X					4
ETIF10	7.5	G2	V		4	4	X	E1	Signal Processing - Design and Implementation		KS KE U W T				4
EDAN35	7.5	A	V		4	4	X	E	High Performance Computer Graphics	X	KS KE U W T	Course on hold			

[EDAN70](#) Project in Computer Science: *The course is given once per study period and is open for zero or more project areas each course instance. The prerequisites depend on the project area.*

[EDAP01](#) Artificial Intelligence: *Replaces [EDAF70](#)*

[EDAN35](#) High Performance Computer Graphics: *The course is cancelled in the academic year 2019/20 but is planned to be given in 2020/2021.*

Specialisation em - Energy and Environment

Course Code	Credits	Cycle	Mand./ Elect.		Year		S.Ex. stud.	Language	Course Name	Footnote	Links	sp1 sp2 sp3 sp4			
			Year	From year	1	2						3	4		
EIEN41	7.5	A	V	4	4	X	E1	Electric and Electric Hybrid Vehicle Technology		KS KE U W T	1				
EIEN15	7.5	A	V	4	4	X	E1	Electric Power Systems		KS KE U W T	1				
EMIN25	7.5	A	V	4	4	-	S	Energy Systems Analysis: Energy, Environment and Natural Resources		KS KE U W T	1	2			
EMIN30	7.5	A	V	4	4	-	S	Environmental Systems Studies: Life Cycle Analysis		KS KE U W T	1	2			
EIEN10	7.5	A	V	4	4	X	E1	Wind Power Systems		KS KE U W T		2			
AEBF30	7.5	G2	V	4	4	X	E	Photovoltaic Systems, Basic Course		KS KE U W T			3		
EMIN20	7.5	A	V	4	4	-	S	Energy Systems Analysis: Renewable Sources of Energy		KS KE U W T			3	4	

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links								
											sp1	sp2	sp3	sp4					
EIEN25	15	A	V		4	4	X	E1	Power Electronics - Devices, Converters, Control and Applications	X	KS	KE	U	W	T			3	4
MVKN15	7.5	A	V		4	4	-	S	Energy Supply Systems		KS	KE	U	W	T				4
MVKN30	7.5	A	V		5	4	-	S	Advanced Efficient Energy Systems		KS	KE	U	W	T	1	2		
EIEN30	7.5	A	V		5	4	X	E1	Project in Industrial Electrical Engineering and Automation		KS	KE	U	W	T	1	2		
EIEN20	7.5	A	V		5	4	X	E1	Design of Electrical Machines	X	KS	KE	U	W	T			3	4
EIEN30	7.5	A	V		5	4	X	E1	Project in Industrial Electrical Engineering and Automation		KS	KE	U	W	T			3	4

[EIEN25](#) Power Electronics - Devices, Converters, Control and Applications: *may not be included in a degree together with [ETEF10](#)*

[EIEN20](#) Design of Electrical Machines: *The course is offered every other academic year and will be offered in 2019/20, 2021/22.*

Specialisation fh - Photonics and High-Frequency Electronics

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
											sp1	sp2	sp3	sp4	
EITF50	7.5	G2	V	4	4	X	E	An Introduction to Wireless Systems		KS KE U W T	1				
ETIN20	7.5	A	V	4	4	X	E	Digital IC-design		KS KE U W T	1				
EAFF01	7.5	G2	V	4	4	X	E	Optics and Optical Design		KS KE U W T	1				
FFFF10	7.5	G2	V	4	4	X	E	Processing and Device Technology		KS KE U W T	1				
ETIN25	7.5	A	V	4	4	X	E	Analogue IC-design		KS KE U W T		2			
ETEN10	7.5	A	V	4	4	X	E	Antenna Technology		KS KE U W T		2			
EITP01	7.5	A	V	4	4	X	E1	High Speed Devices		KS KE U W T		2			

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
											sp1	sp2	sp3	sp4
EAFN01	7.5	A	V	4	4	X	E	Lasers		KS KE U W T		2		
ETIN50	7.5	A	V	4	4	X	E	RF Amplifier Design		KS KE U W T		2		
EITP05	7.5	A	V	4	4	X	E1	Nanoelectronics		KS KE U W T			3	
FFFN25	7.5	A	V	4	4	X	E	Optoelectronics and Optical Communication		KS KE U W T			3	
EAFN10	7.5	A	V	4	4	X	E	Advanced Optics and Lasers		KS KE U W T				4
EITN80	7.5	A	V	4	4	X	E1	Electrodynamics		KS KE U W T				4
ETIN30	7.5	A	V	4	4	X	E	Integrated Radio Electronics	X	KS KE U W T	Course on hold			

[ETIN30](#) Integrated Radio Electronics: *The course is offered every other academic year and will next be offered in 2020/21.*

Specialisation is - Integrated Systems

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
											sp1	sp2	sp3	sp4
ETIN20	7.5	A	V	4	4	X	E	Digital IC-design		KS KE U W T	1			
EITE35	7.5	G2	V	4	4	X	E	Introduction to Structured VLSI Design		KS KE U W T	1			
FFFF10	7.5	G2	V	4	4	X	E	Processing and Device Technology		KS KE U W T	1			
FFFN30	7.5	A	V	4	4	X	E1	Semiconductor Physics		KS KE U W T	1			
ETIN40	7.5	A	V	4	4	X	E	IC-project 2		KS KE U W T	1	2		
ETIN25	7.5	A	V	4	4	X	E	Analogue IC-design		KS KE U W T		2		
EEMN05	7.5	A	V	4	4	X	E1	EMC, Noise and Noise Reduction		KS KE U W T		2		

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
											sp1	sp2	sp3	sp4
ETIN55	7.5	A	V	4	4	X	E	Integrated A/D and D/A Converters		KS KE U W T		2		
ETIN45	7.5	A	V	4	4	X	E	DSP-design		KS KE U W T			3	
EITP15	7.5	A	V	4	4	X	E1	Printed Circuit Board and Prototyping		KS KE U W T			3	
ETIN35	7.5	A	V	4	4	X	E	IC-project 1		KS KE U W T			3	4
EDAN15	7.5	A	V	4	4	X	E	Design of Embedded Systems		KS KE U W T				4
ETIN30	7.5	A	V	4	4	X	E	Integrated Radio Electronics	X	KS KE U W T	Course on hold			

[ETIN30](#) Integrated Radio Electronics: *The course is offered every other academic year and will next be offered in 2020/21.*

Specialisation ks - Communication Systems

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
												sp1	sp2	sp3	sp4	
EITG05	7.5	G2	V		4	4	X	E	Digital Communications		KS KE U W T	1				
EITN15	7.5	A	V		4	4	X	E	Modern Wireless Systems - LTE and Beyond		KS KE U W T	1				
ETSF05	9	G2	V		4	4	-	E1	Internet Protocols		KS KE U W T	1	2			
EITN70	7.5	A	V		4	4	X	E	Channel Coding for Reliable Communication		KS KE U W T		2			
EDIN01	7.5	A	V		4	4	X	E1	Cryptography		KS KE U W T		2			
EITN01	7.5	A	V		4	4	X	E	Digital Communications, Advanced Course		KS KE U W T		2			
EITN30	7.5	A	V		4	4	-	S	Internet Inside		KS KE U W T				3	

Course Code	Credits	Cycle	Mand./ Elect.		Language			Links					
			Year	From year	S.Ex. stud.	Course Name	Footnote	sp1	sp2	sp3	sp4		
ETSN10	7.5	A	V	4	4	X	E	Network Architecture and Performance	KS KE U W T			3	
EITN85	7.5	A	V	4	4	X	E	Wireless Communication Channels	KS KE U W T			3	
EITN45	7.5	A	V	4	4	X	E	Information Theory	KS KE U W T				4
EITF95	4.5	G2	V	4	4	X	S	Queuing System	KS KE U W T				4
EITN95	7.5	A	V	4	4	X	E1	Simulation	KS KE U W T				4
EITN75	7.5	A	V	4	4	X	E	Wireless System Design Principles	KS KE U W T				4
EITN21	7.5	A	V	5	5	X	E	Project in Wireless Communication	KS KE U W T	1	2		

Specialisation mt - Biomedical Engineering

Course Code	Credits	Cycle	Mand./ Elect.		Language			Course Name	Footnote	Links				
			Year	From year	S.Ex.	stud.	sp1			sp2	sp3	sp4		
BMEN05	7.5	A	V	4	4	X	E	Biomechanics	X	KS KE U W T	1			
EMAN20	7.5	A	V	4	4	X	E1	Image Analysis		KS KE U W T	1			
EEMN21	7.5	A	V	4	4	X	E1	Introduction to Microfluidics and Lab-on-a-chip Systems	X	KS KE U W T	1			
BMEF10	7.5	G2	V	4	4	-	S	Transducer Technology	X	KS KE U W T	1			
TNSF05	7.5	G2	V	4	4	-	S	Rehabilitation Engineering		KS KE U W T	1	2		
EEMF05	7.5	G2	V	4	4	X	E1	Biomedical Measurements	X	KS KE U W T		2		
EEMN05	7.5	A	V	4	4	X	E1	EMC, Noise and Noise Reduction		KS KE U W T		2		

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
												sp1	sp2	sp3	sp4
EMAN30	7.5	A	V		4	4	X	E1	Medical Image Analysis		KS KE U W T		2		
EAFN35	7.5	A	V		4	4	X	E	Medical Optics		KS KE U W T		2		
BMEN15	7.5	A	V		4	4	X	E	Signal Separation - Independent Components		KS KE U W T		2		
EEMN15	7.5	A	V		4	4	X	E1	Ultrasound Physics and Technology	X	KS KE U W T			3	
EMAN01	7.5	A	V		4	4	X	E1	Biomathematics	X	KS KE U W T			3	4
BMEN01	7.5	A	V		4	4	X	E1	Biomedical Signal Processing		KS KE U W T				4

[BMEN05](#) Biomechanics: *Replaces the course [FHLF05](#).*

[EEMN21](#) Introduction to Microfluidics and Lab-on-a-chip Systems: *Replaces [EEM055](#) Microfluidics*

[BMEF10](#) Transducer Technology: *Re-examination set by agreement.*

[EEMF05](#) Biomedical Measurements: *Reexam date to be set by agreement.*

[EEMN15](#) Ultrasound Physics and Technology: *Re-examination set by agreement.*

[EMAN01](#) Biomathematics: *The course is offered every other academic year and will be given in 2019/20, 2021/22.*

Specialisation pla - Production, Logistics and Business

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1	sp2	sp3	sp4
MTTF01	5	G2	V		4	4	-	S	Logistics		KS KE U W T	1			
MION25	7.5	A	V		4	4	-	S	Technology Strategy		KS KE U W T	1			
MIOE15	7.5	G2	V		4	4	-	S	Marketing		KS KE U W T		2		
MIOE10	7.5	G2	V		4	4	X	E	Production and Inventory Control		KS KE U W T		2		
MION20	7.5	A	V		4	4	-	S	Applied Business Analysis		KS KE U W T			3	
MTTN70	7.5	A	V		4	4	X	E	International Physical Distribution		KS KE U W T			3	
MION01	7.5	A	V		4	4	X	E	Management of Production and Inventory Systems		KS KE U W T			3	

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
												sp1	sp2	sp3	sp4
MIOF25	6	G2	V		4	4	-	S	Managerial Economics, Advanced Course		KS KE U W T			3	
MIOF25															4
MION45	7.5	A	V		4	4	X	E	Operations Strategy		KS KE U W T				4
MTTN80	7.5	A	V		4	4	X	E	Supply Chain Management		KS KE U W T				4
MION30	7.5	A	V		5	4	-	S	Industrial Management		KS KE U W T	1			
MTTN20	7.5	A	V		5	5	X	E	Supply Chain Information Systems		KS KE U W T	1			
MION05	7.5	A	V		5	4	-	S	Business Marketing		KS KE U W T		2		

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links								
										sp1	sp2	sp3	sp4					
MTTN75	7.5	A	V	5	4	X	E	Industrial Purchasing		KS	KE	U	W	T	2			

Specialisation pv - Software

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1	sp2	sp3	sp4
EMNN25	7.5	A	V		4	4	X	E1	Advanced Course in Numerical Algorithms with Python/SciPy		KS KE U W T	1			
EDAN65	7.5	A	V		4	4	X	E1	Compilers		KS KE U W T	1			
EDAP10	7.5	A	V		4	4	-	S	Concurrent Programming	X	KS KE U W T	1			
EDAN26	7.5	A	V		4	4	-	S	Multicore Programming	X	KS KE U W T	1			
EDAF60	4.5	G2	V		4	4	-	S	Object-oriented Modelling and Design	X	KS KE U W T	1			
EDAN70	7.5	A	V		4	4	X	E1	Project in Computer Science	X	KS KE U W T	1			
ETSN05	7.5	A	V		4	4	-	S	Software Development for Large Systems		KS KE U W T	1			

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
												sp1	sp2	sp3	sp4	
EDAP05	7.5	A	V		4	4	X	E	Concepts of Programming Languages	X	KS KE U W T			2		
EDAN10	7.5	A	V		4	4	X	E	Configuration Management		KS KE U W T			2		
EDAN01	7.5	A	V		4	4	X	E	Constraint Programming		KS KE U W T			2		
EDAN70	7.5	A	V		4	4	X	E1	Project in Computer Science	X	KS KE U W T			2		
ETSN20	7.5	A	V		4	4	X	E	Software Testing		KS KE U W T			2		
EDAN70	7.5	A	V		4	4	X	E1	Project in Computer Science	X	KS KE U W T				3	
ETSN15	7.5	A	V		4	4	-	S	Requirements Engineering		KS KE U W T				3	

Course Code	Credits	Mand./ Elect.		Language				Links							
		Cycle	Year	From year	S.Ex. stud.	Course Name	Footnote	sp1	sp2	sp3	sp4				
EDAF75	7.5	G2	V	4	4	X	S	Database Technology		KS KE U W T				3	4
EDAN40	7.5	A	V	4	4	X	E	Functional Programming		KS KE U W T					4
EDAF35	7.5	G2	V	4	4	X	E1	Operating Systems		KS KE U W T					4
EDAN70	7.5	A	V	4	4	X	E1	Project in Computer Science	X	KS KE U W T					4
EDAN75	7.5	A	V	4	4	X	S	Optimising Compilers	X	KS KE U W T					Course on hold
EDAP15	7.5	A	V	4	4	X	E	Program Analysis	X	KS KE U W T					Course on hold

[EDAP10](#) Concurrent Programming: Replaces [EDAF55](#)

[EDAN26](#) Multicore Programming: The course is offered every other academic year and will be given in 2019/20, 2021/22.

[EDAF60](#) Object-oriented Modelling and Design: Only one of the courses [EDA061](#) / [EDAF60](#) and [EDAF10](#) may be included in a degree.

[EDAN70](#) Project in Computer Science: The course is given once per study period and is open for zero or more project areas each course instance. The prerequisites depend on the project area.

[EDAP05](#) Concepts of Programming Languages: The course is offered every other academic year and will be given in 2019/20, 2021/22.

[EDAN75](#) Optimising Compilers: The course is offered every other academic year and will next be offered in 2020/21.

[EDAP15](#) Program Analysis: The course is offered every other academic year and will next be offered in 2020/21.

Specialisation ra - Control and Automation

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
											sp1	sp2	sp3	sp4	
EIEN15	7.5	A	V	4	4	X	E1	Electric Power Systems		KS KE U W T	1				
FRTN10	7.5	A	V	4	4	X	E1	Multivariable Control		KS KE U W T	1				
EIEN45	10	A	V	4	4	X	E1	Applied Mechatronics		KS KE U W T	1	2			
EMAN70	6	A	V	4	4	X	E1	Matrix Theory		KS KE U W T	1	2			
FRTN35	7.5	A	V	4	4	X	E1	System Identification		KS KE U W T	1	2			
FRTN05	7.5	A	V	4	4	X	E1	Non-Linear Control and Servo Systems		KS KE U W T		2			
FRTN40	7.5	A	V	4	4	X	E1	Project in Automatic Control		KS KE U W T		2			

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links						
										sp1	sp2	sp3	sp4			
EIEF45	7.5	G2	V	4	4	X	E1	Automation		KS	KE	U	W	T	3	
EIEN01	10	A	V	4	4	X	E1	Mechatronics, Industrial Product Design		KS	KE	U	W	T	3	4
FRTN15	7.5	A	V	4	4	X	E1	Predictive Control		KS	KE	U	W	T	3	4
FRTN01	10	A	V	4	4	X	E	Real-Time Systems		KS	KE	U	W	T	3	4
EIEN35	7.5	A	V	4	4	X	E1	Automation for Complex Systems		KS	KE	U	W	T		4
FRTN30	7.5	A	V	4	4	X	E	Network Dynamics		KS	KE	U	W	T		4

Specialisation ss - Signals and Sensors

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
												sp1	sp2	sp3	sp4	
EITN60	7.5	A	V		4	4	X	E	Optimum and Adaptive Signal Processing		KS KE U W T	1				
EMSE10	7.5	G2	V		4	4	X	E	Stationary Stochastic Processes		KS KE U W T	1				
BMEF10	7.5	G2	V		4	4	-	S	Transducer Technology	X	KS KE U W T	1				
FRTN35	7.5	A	V		4	4	X	E1	System Identification		KS KE U W T	1	2			
EEMN10	7.5	A	V		4	4	X	E1	Computerised Measurement Systems	X	KS KE U W T		2			
EEMN05	7.5	A	V		4	4	X	E1	EMC, Noise and Noise Reduction		KS KE U W T		2			
EXTQ40	7.5	A	V		4	4	-	E1	Introduction to Artificial Neural Networks and Deep Learning		KS KE U W T		2			

Course Code	Credits	Cycle	Mand./ Elect.		Language			Course Name	Footnote	Links							
			Year	From year	S.Ex.	stud.	sp1			sp2	sp3	sp4					
EMSN45	7.5	A	V	4	4	X	E	Mathematical Statistics, Time Series Analysis		KS	KE	U	W	T	2		
BMEN15	7.5	A	V	4	4	X	E	Signal Separation - Independent Components		KS	KE	U	W	T	2		
BMEN20	7.5	A	V	4	4	X	E1	Project Course in Signal Processing – from Idea to App		KS	KE	U	W	T	3		
EMSN35	7.5	A	V	4	4	X	E	Stationary and Non-stationary Spectral Analysis	X	KS	KE	U	W	T	3		
EEMN15	7.5	A	V	4	4	X	E1	Ultrasound Physics and Technology	X	KS	KE	U	W	T	3		
EEMN01	7.5	A	V	4	4	X	E1	Micro Sensors	X	KS	KE	U	W	T	4		
ETIF10	7.5	G2	V	4	4	X	E1	Signal Processing - Design and Implementation		KS	KE	U	W	T	4		

[BMEF10](#) Transducer Technology: *Re-examination set by agreement.*

[EEMN10](#) Computerised Measurement Systems: *Re-examination set by agreement.*

[FMSN35](#) Stationary and Non-stationary Spectral Analysis: *The course is offered every other academic year and will be given in 2019/20, 2021/22.*

[EEMN15](#) Ultrasound Physics and Technology: *Re-examination set by agreement.*

[EEMN01](#) Micro Sensors: *Re-examination set by agreement.*

Elective Courses - E

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp			
										sp1	sp2	sp3	sp4
MIOF20	6	G2	3	3	-	S	Management Organization		KS KE U W T				4
EITN50	7.5	A	4	4	X	E	Advanced Computer Security	X	KS KE U W T	1			
ERTE20	7.5	G2	4	4	X	E	Applied Robotics		KS KE U W T	1			
EDAN65	7.5	A	4	4	X	E1	Compilers		KS KE U W T	1			
IYT000	15	G2	4	3	-	S	Engineering Training Course		KS KE U W	1			
EMSF15	7.5	G2	4	4	X	E	Markov Processes		KS KE U W T	1			
EITN10	7.5	A	4	4	X	E	Multiple Antenna Systems		KS KE U W T	1			

Course Code	Credits	Cycle		Language			Course Name	Footnote	Links	Links			
		Year	From year	S.Ex. stud.	sp1	sp2				sp3	sp4		
ERTN50	7.5	A	4	3	X	E	Optimization for Learning	KS KE U W T	1				
EMFE15	7.5	G2	4	4	-	E1	Quantum Mechanics and Mathematical Methods	KS KE U W T	1				
AEBF25	7.5	G2	4	4	X	E	Solar Heating Technology, Basic Course	KS KE U W T	1				
EMIF20	7.5	G2	4	4	X	E	Environmental Issues	KS KE U W T	1	2			
MVKP05	7.5	A	4	2	X	E1	Project - Formula Student	KS KE U W T	1	2	3	4	
EXTA65	4.5	G1	4	4	-	S	Cognition	KS KE U W T		2			
EITE20	7.5	G2	4	4	X	E	Computer Architecture	KS KE U W T		2			

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
										sp1	sp2	sp3	sp4
EMAA25	7.5	G1	4	4	X	E1	Discrete Mathematics		KS KE U W T		2		
IYT000	15	G2	4	3	-	S	Engineering Training Course		KS KE U W		2		
EITP10	7.5	A	4	4	X	E	High Performance Fiber Networks		KS KE U T		2		
EMAN60	6	A	4	4	X	E1	Optimization		KS KE U W T		2		
FAFA10	9	G1	4	4	-	S	Physics - Quantum Phenomena and Nanotechnology		KS KE U W T		2		
EMAN40	3	A	4	4	X	E1	Project in Applied Mathematics		KS KE U W T		2		
EMAN35	3	A	4	4	X	E1	Project in Mathematics		KS KE U W T		2		

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1 sp2 sp3 sp4			
TNSN01	7.5	A	4	4	X	E1	Service Robotics		KS KE U W T		2		
FFFN35	7.5	A	4	4	X	E	The Physics of Low-dimensional Structures and Quantum Devices	X	KS KE U W T		2		
EDAF45	7.5	G2	4	4	-	S	Software Development in Teams - Project		KS KE U W T		2	3	
EITA25	7.5	G1	4	4	X	S	Computer Security		KS KE U W T			3	
MVKN20	7.5	A	4	4	-	S	Energy Utilization		KS KE U W T			3	
FHLA05	7.5	G1	4	4	X	E	Engineering Mechanics		KS KE U W T			3	
IYT000	15	G2	4	3	-	S	Engineering Training Course		KS KE U W			3	

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links			
									sp1	sp2	sp3	sp4
EMAE35	6	G2	4	4	X	E1	Linear and Combinatorial Optimization	KS KE U W T				3
ETIA10	7.5	G1	4	4	X	E	Patent and Intellectual Property Rights	KS KE U W T				3
EITN90	7.5	A	4	4	X	E	Radar and Remote Sensing	KS KE U W T				3
EITP20	7.5	A	4	4	X	E	Secure Systems Engineering	KS KE U T				3
EMFE30	4.5	G2	4	4	-	S	Theory of Relativity	KS KE U W T				3
EDAF90	7.5	G2	4	4	X	S	Web Programming	KS KE U T				3
MAME15	6	G2	4	4	-	S	Work Organization and Management	KS KE U W T				3

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links						
									sp1	sp2	sp3	sp4			
EMAN55	7.5	A	4	4	-	S	Applied Mathematics		KS	KE	U	W	T	3	4
EXTG15	7.5	G2	4	4	X	E1	Biology, Introductory Course		KS	KE	U	W	T	3	4
EDAE50	7.5	G2	4	4	X	S	C++ Programming		KS	KE	U	W	T	3	4
EMAN25	7.5	A	4	4	X	E1	Calculus of Variations		KS	KE	U	W	T	3	4
EITA05	4.5	G1	4	1	-	S	History of Technology		KS	KE	U	W	T	3	4
BMEA01	6	G1	4	4	-	S	Medicine for Engineers	X	KS	KE	U	W	T	3	4
FKEN35	7.5	A	4	4	X	E	Methods for Environmental Monitoring		KS	KE	U	W	T	3	4

Course Code	Credits	Cycle	Language				Course Name	Footnote	Links					
			Year	From year	S.Ex. stud.				sp1	sp2	sp3	sp4		
MAMF21	7.5	G2	4	4	-	S	Working Environment, Occupational Health and Safety	KS	KE	U	W	T	3	4
EDAF05	5	G2	4	4	X	E1	Algorithms, Data Structures and Complexity	KS	KE	U	W	T		4
EDAA25	3	G1	4	4	X	S	C Programming	KS	KE	U	W	T		4
EMSF65	7.5	G2	4	4	X	E	Design of Experiments	KS	KE	U	W	T		4
EMAA25	7.5	G1	4	4	X	E1	Discrete Mathematics	KS	KE	U	W	T		4
IYT000	15	G2	4	3	-	S	Engineering Training Course	KS	KE	U	W			4
FHLE20	7.5	G2	4	4	X	E	Finite Element Method	KS	KE	U	W	T		4

Course Code	Credits	Cycle	Language				Course Name	Footnote	Links			
			Year	From year	S.Ex. stud.	sp1			sp2	sp3	sp4	
KIIF01	7.5	G2	4	4	X	E1	Industrial Environmental Management	KS KE U W T				4
EEMN26	7.5	A	4	4	X	E1	Lab-on-a-chip in Biomedical Applications	KS KE U W T				4
EITP25	7.5	A	4	4	X	E	Memory Technology for Machine Learning	KS KE U W T				4
EMAN40	3	A	4	4	X	E1	Project in Applied Mathematics	KS KE U W T				4
MIOF05	2	G2	4	4	-	S	Project in Managerial Economics, Advanced Course	KS KE U W T				4
EMAN35	3	A	4	4	X	E1	Project in Mathematics	KS KE U W T				4
EITN35	7.5	A	5	4	X	E1	Advanced Course in Electrical and Information Technology	X KS KE U W T		1		

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	Links			
										sp1	sp2	sp3	sp4
EITF05	4	G2	5	4	-	S	Web Security		KS KE U W T	1			
EITN35	7.5	A	5	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS KE U W T		2		
EITN41	7.5	A	5	4	-	S	Advanced Web Security		KS KE U W T		2		
EXTP85	7.5	A	5	4	-	S	Quantitative Human Physiology		KS KE U W T		2		
EITN35	7.5	A	5	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS KE U W T			3	
EITN35								X					4
EMAN45	7.5	A	5	4	-	E	Machine Learning		KS KE U W T				4
EIEF40	9	G2	4	4	X	E1	Measurement Systems for Control	X	KS KE U W T	Course on hold			

[EITN50](#) Advanced Computer Security: *Only one of the courses [EITN50](#) and [EIT015](#) may be included in a degree.*

[FFFN35](#) The Physics of Low-dimensional Structures and Quantum Devices: *Re-examination set by agreement.*

[BMEA01](#) Medicine for Engineers: *The course is offered every other academic year and will be given in 2019/20, 2021/22.*

[EITN35](#) Advanced Course in Electrical and Information Technology: *The course starts only after agreement with the department. The course is not linked to any specific study period. The information on hours depends on the course running over a study period. Individual study plans are to be set up and approved.*

[EIEE40](#) Measurement Systems for Control: *Exam date to be set by agreement. The course is offered every other academic year and will next be offered 2020/21.*

Externally Elective Courses - E

Course Code	Credits	Cycle	Language				Course Name	Footnote	Links	Links			
			Year	From year	S.Ex. stud.					sp1	sp2	sp3	sp4
EXTA10	3	G1	2	2	-	S	Introduction to Chinese Society, Culture and Language	X	KS KE U W T	1	2		
EXTA35	15	G1	2	2	-	S	Introductory Course in Chinese for Engineers	X	KS KE U W T			3	4
EXTF60	15	G2	3	3	-	E	Introductory Course in Chinese for Engineers, Part 2	X	KS KE U W T	1	2		
GEMA65	7.5	G1	3	1	-	S	Chinese for Engineers	X	KS KE U W T			3	4
GEMA20	7.5	G1	4	1	-	E	English for Engineers	X	KS KE U W T	1	2		
GEMA25	7.5	G1	4	1	-	S	German for Engineers	X	KS KE U W T	1	2		
GEMA70	15	G1	4	1	-	S	Japanese for Engineers	X	KS KE U W T	1	2		

Course Code	Credits	Cycle		Language			Course Name	Footnote	Links								
		Year	From year	S.Ex. stud.	sp1	sp2			sp3	sp4							
GEMA20	7.5	G1	4	1	-	E	English for Engineers	X	KS	KE	U	W	T			3	4
GEMA01	7.5	G1	4	1	-	S	French for Engineers: Language, Culture and Society, First Course	X	KS	KE	U	W	T			3	4

[EXTA10](#) Introduction to Chinese Society, Culture and Language: [EXTA10](#) counts as an external elective course in the degree requirements for students admitted autumn 2011 and later.

[EXTA35](#) Introductory Course in Chinese for Engineers: [EXTA35](#) counts as an external elective course in the degree requirements for students admitted autumn 2011 and later.

[EXTF60](#) Introductory Course in Chinese for Engineers, Part 2: [EXTF60](#) counts as an external elective course 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.*

[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.*

[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.*

[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.*

Bachelor's Projects - E

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

Links

Course Code	Credits	Course Name	Links
FRTL01	15	Bachelor Project in Automatic Control	KS KE U
BMEL01	15	Bachelor Project in Biomedical Engineering	KS KE U
EDAL01	15	Bachelor Project in Computer Science	KS KE U W
EITL01	15	Bachelor Project in Electrical and Information Technology	KS KE U W
EEML01	15	Bachelor Project in Electrical Measurements	KS KE U
EIEL01	15	Bachelor Project in Industrial Electrical Engineering and Automation	KS KE U
FMSL01	15	Bachelor Project in Mathematical Statistics	KS KE U W
FMAL01	15	Bachelor Project in Mathematics	KS KE U
FMNL01	15	Bachelor Project in Numerical Analysis	KS KE U W
PHYL01	15	Bachelor Project in Physics	KS KE U

Degree Projects - E

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

Links

Course Code	Credits	Course Name	Links
FRTM01	30	Degree Project in Automatic Control	KS KE U W
BMEM01	30	Degree Project in Biomedical Engineering	KS KE U W
EDAM05	30	Degree Project in Computer Sciences for Engineers	KS KE U W
EITM01	30	Degree Project in Electrical and Information Technology	KS KE U W
BMEM05	30	Degree Project in Electrical Measurements	KS KE U W
AEBM05	30	Degree Project in Energy and Building Design	KS KE U
VTAM01	30	Degree Project in Engineering Acoustics	KS KE U
MAMM10	30	Degree Project in Ergonomics	KS KE U W
EIEM01	30	Degree Project in Industrial Electrical Engineering and Automation	KS KE U W
FMSM01	30	Degree Project in Mathematical Statistics for Engineers	KS KE U W
FMAM05	30	Degree Project in Mathematics for Engineers	KS KE U
FMNM01	30	Degree Project in Numerical Analysis	KS KE U W
PHYM01	30	Degree Project in Physics	KS KE U W
MIOM05	30	Degree Project in Production Management	KS KE U W
TNSM01	30	Degree Project in Rehabilitation Engineering	KS KE U W