

Industrial Engineering and Management

Study Year 1, Academic Year 2015/16 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	15/16	15/16	15/16	15/16
								sp1	sp2	sp3	sp4
EMAA05	15	G1	-	S	Calculus in One Variable		KS KE U W T	1	2		
MIOA01	9	G1	-	S	Managerial Economics, Basic Course		KS KE U W T	1	2		
EMA420	6	G1	-	S	Linear Algebra		KS KE U W T		2		
EMA430	6	G1	-	S	Calculus in Several Variables		KS KE U W T			3	
FMEA10	9	G1	-	S	Engineering Mechanics, Basic Course		KS KE U W T			3	
FAFA15	9	G1	-	S	Energy and Environmental Physics	X	KS KE U W T				4
MIO022	6	G2	-	S	Management Organization		KS KE U W T				4

[FAFA15](#) Energy and Environmental Physics: *Anmälan till laborationsgrupp vid introduktionsföreläsningen är obligatorisk*

Study Year 2, Academic Year 2016/17 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	16/17	16/17	16/17	16/17
								sp1	sp2	sp3	sp4
EXTA40	6	G1	-	S	Introduction to Microeconomic Theory		KS KE U W T	1			
MTTF01	5	G2	-	S	Logistics		KS KE U W T	1			
EMS012	9	G2	-	S	Mathematical Statistics, Basic Course		KS KE U W T	1	2		
MIOF01	9	G2	-	S	Marketing and Globalization		KS KE U W T		2	3	
EDA017	9	G1	-	S	Programming, First Course		KS KE U W T		2	3	
EMAF01	7	G2	-	E1	Mathematics - Analytic Functions		KS KE U W T			3	
MIO040	6	G2	-	S	Managerial Economics, Advanced Course		KS KE U W T				4

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links					
							16/17 sp1	16/17 sp2	16/17 sp3	16/17 sp4		
EMAF05	7	G2	-	E1	Mathematics - Systems and Transforms		KS	KE	U	W	T	4
MIOF05	2	G2	-	S	Project in Managerial Economics, Advanced Course		KS	KE	U	W	T	4

Study Year 3, Academic Year 2017/18 (Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	17/18	17/18	17/18	17/18
								sp1	sp2	sp3	sp4
MIOE30	6	G2	-	S	Operations Research – Basic Course		KS KE U W T	1			
MMTA05	6	G1	-	S	Production Systems		KS KE U W T	1			
EMIF01	6	G2	-	S	Environmental System Studies: Management for Sustainable Development		KS KE U W T	1	2		
EXTF45	6	G2	-	S	Financial Management		KS KE U W T		2		
ERTF05	7.5	G2	-	S	Automatic Control, Basic Course	X	KS KE U W T			3	

[ERTF05](#) Automatic Control, Basic Course: *B3 who will study the elective block Product Innovation, should take [ERT010](#) in study period 2, autumn 17.*

Study Year 3, Academic Year 2017/18 (Elective Mandatory Courses)

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links	17/18	17/18	17/18	17/18
								sp1	sp2	sp3	sp4
MVKN35	6	A	-	S	Energy Markets	X	KS KE U W T		2		
EITF25	6	G2	-	S	Internet - Techniques and Applications	X	KS KE U W T		2		
EMAN60	6	A	X	E1	Optimization	X	KS KE U W T		2		
FKMA01	7.5	G1	X	E1	Materials Engineering, Basic Course	X	KS KE U W T			3	
EDAA01	7.5	G1	-	S	Programming - Second Course	X	KS KE U W T			3	
EITF11	10	G2	-	S	Digital Systems, Project Laboratory	X	KS KE U W T			3	4
EMIN20	7.5	A	-	S	Energy Systems Analysis: Renewable Sources of Energy	X	KS KE U W T			3	4

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links						
							17/18 sp1	17/18 sp2	17/18 sp3	17/18 sp4			
EMIN05	7.5	A	X	E1	Environmental System Studies: Climate, Science and Politics	X	KS	KE	U	W	T	3	4
MMKF35	7.5	G2	X	E	Industrial Design	X	KS	KE	U	W	T	3	4
MMKF05	7.5	G2	X	E	Product Development and Design Methodology	X	KS	KE	U	W	T	3	4
FHLE10	7.5	G2	-	E1	Finite Element Method and Introduction to Strength of Materials	X	KS	KE	U	W	T		4
FBRF01	7.5	G2	X	E	Fundamental Combustion	X	KS	KE	U	W	T		4
EMSN40	9	A	X	E1	Linear and Logistic Regression with Data Gathering	X	KS	KE	U	W	T		4
EMNF10	6	G2	X	E1	Numerical Analysis	X	KS	KE	U	W	T		4

Course Code	Credits	Cycle	S.Ex. stud.	Language	Course Name	Footnote	Links								
							17/18 sp1	17/18 sp2	17/18 sp3	17/18 sp4					
ETSA02	6	G1	-	S	Software Engineering - Methodology	X	KS	KE	U	W	T				4

[MVKN35](#) Energy Markets: *Compulsory course in the elective block 'Energy and Environmental Engineering' for students admitted autumn 2015. The course is also an optional programme course.*

[EITE25](#) Internet - Techniques and Applications: *Compulsory course in the elective blocks 'Systems and Software Development' for students admitted autumn 2015. The course is also an optional programme course.*

[EMAN60](#) Optimization: *Compulsory course in the elective block 'Mathematical Modelling' for students admitted autumn 2015. The course is also an optional programme course. Written examination before Christmas so that exchange students may participate.*

[FKMA01](#) Materials Engineering, Basic Course: *Compulsory course in the elective block 'Product Innovation' for students admitted autumn 2015. The course is also an optional programme course.*

[EDAA01](#) Programming - Second Course: *Compulsory course in the elective blocks 'Mathematical Modelling' and 'Systems and Software Development' for students admitted autumn 2015. The course is also an optional programme course.*

[EITE11](#) Digital Systems, Project Laboratory: *Compulsory course in the elective blocks 'Systems and Software Development' for students admitted autumn 2015. The course is also an optional programme course.*

[FMIN20](#) Energy Systems Analysis: Renewable Sources of Energy: *Compulsory course in the elective block 'Energy and Environmental Engineering' for students admitted autumn 2015. The course is also an optional programme course.*

[FMIN05](#) Environmental System Studies: Climate, Science and Politics: *Compulsory course in the elective block 'Energy and Environmental Engineering' for students admitted autumn 2015. The course is also an optional programme course.*

[MMKE35](#) Industrial Design: *Compulsory course in the elective block 'Product Innovation' for students admitted autumn 2015. The course is also an optional programme course.*

[MMKE05](#) Product Development and Design Methodology: *Compulsory course in the elective block 'Product innovation' for students admitted autumn 2015. The course is also an optional programme course.*

[FHLE10](#) Finite Element Method and Introduction to Strength of Materials: *Compulsory course in the elective block 'Product Innovation' for students admitted autumn 2015. The course is also an optional programme course.*

[FBRF01](#) Fundamental Combustion: *Compulsory course in the elective block 'Energy and Environmental Engineering' for students admitted autumn 2015. The course is also an optional programme course.*

[FMSN40](#) Linear and Logistic Regression with Data Gathering: *Compulsory course in the elective block 'Mathematical Modelling' for students admitted autumn 2015. The course is also an optional programme course. Only one of the courses [FMSN30](#) and [FMSN40](#) may be included in a degree.*

[FMNF10](#) Numerical Analysis: *Compulsory course in the elective block 'Mathematical Modelling' for students admitted autumn 2015. The course is also an optional programme course.*

[ETSA02](#) Software Engineering - Methodology: *Compulsory course in the elective blocks 'Systems and Software Development' for students admitted autumn 2015. The course is also an optional programme course.*

Specialisation ai - Business and Innovation

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
											sp1	sp2	sp3	sp4	
INTN01	7.5	A	V	4 - 18/19	4	X	E	Innovation Engineering		KS KE U W T	1				
MION25	7.5	A	V	4 - 18/19	4	-	S	Technology Strategy		KS KE U W T	1				
MION05	7.5	A	V	4 - 18/19	4	-	S	Business Marketing		KS KE U W T		2			
MTTN75	7.5	A	V	4 - 18/19	4	X	E	Industrial Purchasing		KS KE U W T		2			
MION20	7.5	A	V	4 - 18/19	4	-	S	Applied Business Analysis		KS KE U W T			3		
INNN01	7.5	A	V	4 - 18/19	4	X	E	Innovation Management		KS KE U W T			3		
INNN10	7.5	A	V	4 - 18/19	4	X	E	Globalization and Innovation		KS KE U W T					4

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links			
										sp1	sp2	sp3	sp4
MAMN30	7.5	A	V	4 - 18/19	3	-	S	Management, Work Organisation and Project Management	KS KE U W T				4
MION30	7.5	A	V	5 - 19/20	4	-	S	Industrial Management	KS KE U W T	1			

Specialisation fir - Financial Engineering and Risk Management

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
											sp1	sp2	sp3	sp4	
EXTQ25	7.5	A	V	4 - 18/19	4	X	E	Financial Economics, Advanced Course	X	KS KE U W T	1				
EMSE10	7.5	G2	V	4 - 18/19	3	X	E	Stationary Stochastic Processes		KS KE U W T	1				
EXTQ30	7.5	A	V	4 - 18/19	4	X	E	Economics, Empirical Finance	X	KS KE U W T		2			
FMSN45	7.5	A	V	4 - 18/19	4	X	E	Mathematical Statistics, Time Series Analysis		KS KE U W T		2			
EXTQ35	7.5	A	V	4 - 18/19	4	X	E	Financial Valuation and Risk Management	X	KS KE U W T			3		
FMSN50	7.5	A	V	4 - 18/19	4	X	E	Monte Carlo and Empirical Methods for Stochastic Inference		KS KE U W T			3		
FRTN30	7.5	A	V	4 - 18/19	4	X	E	Network Dynamics		KS KE U W T				4	

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
											sp1	sp2	sp3	sp4
EMSN55	7.5	A	V	4 - 18/19	4	X	E	Statistical Modelling of Extreme Values		KS KE U W T				4
EMSN25	7.5	A	V	5 - 19/20	4	X	E	Valuation of Derivative Assets		KS KE U W T	1			
EXTN80	7.5	A	V	5 - 19/20	4	X	E	Economic and Financial Decision-making	X	KS KE U W T		2		
EMSN60	7.5	A	V	5 - 19/20	4	X	E	Financial Statistics		KS KE U W T		2		
EMSN15	7.5	A	V	5 - 19/20	5	X	E	Statistical Modelling of Multivariate Extreme Values	X	KS KE U W T		2		

[EXTQ25](#) Financial Economics, Advanced Course: *The course is to be studied together with NEKN81, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTQ30](#) Economics, Empirical Finance: *The course is to be studied together with NEKN82, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTQ35](#) Financial Valuation and Risk Management: *The course is to be studied together with NEKN83, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTN80](#) Economic and Financial Decision-making: *The course is to be studied together with NEKN22, which is given by the Department of Economics. Does not follow the study period structure.*

[EMSN15](#) Statistical Modelling of Multivariate Extreme Values: *The course is offered every other academic year and will be given in 2019/20, 2021/22.*

Specialisation If - Supply Chain Management

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
											sp1	sp2	sp3	sp4	
MTTN40	7.5	A	V	4 - 18/19	4	X	E	Packaging Technology and Development		KS KE U W T	1				
MTTN25	7.5	A	V	4 - 18/19	4	X	E	Warehousing and Materials Handling		KS KE U W T	1				
MTTN75	7.5	A	V	4 - 18/19	4	X	E	Industrial Purchasing		KS KE U W T		2			
MIOF10	7.5	G2	V	4 - 18/19	4	X	E	Production and Inventory Control		KS KE U W T		2			
MTTN70	7.5	A	V	4 - 18/19	4	X	E	International Physical Distribution		KS KE U W T			3		
MION01	7.5	A	V	4 - 18/19	4	X	E	Management of Production and Inventory Systems		KS KE U W T			3		
MTTN60	7.5	A	V	4 - 18/19	4	X	E	Business Process Management		KS KE U W T					4

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
											sp1	sp2	sp3	sp4
MION45	7.5	A	V	4 - 18/19	4	X	E	Operations Strategy		KS KE U W T				4
MTTN80	7.5	A	V	4 - 18/19	4	X	E	Supply Chain Management		KS KE U W T				4
MION40	7.5	A	V	5 - 19/20	4	X	E1	Simulation of Industrial Processes and Logistic Systems		KS KE U W T	1			
MTTN20	7.5	A	V	5 - 19/20	4	X	E	Supply Chain Information Systems		KS KE U W T	1			
MTTN35	7.5	A	V	5 - 19/20	4	X	E	Packaging Logistics		KS KE U W T		2		
MION50	7.5	A	V	5 - 19/20	5	X	E	Quality Management		KS KE U W T		2		

Specialisation pr - Production Engineering

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links			
											sp1	sp2	sp3	sp4
MMTN25	7.5	A	V		4 - 18/19	4	-	S	Production Technology	KS KE U W T	1			
MTTN25	7.5	A	V		4 - 18/19	4	X	E	Warehousing and Materials Handling	KS KE U W T	1			
MIOE10	7.5	G2	V		4 - 18/19	4	X	E	Production and Inventory Control	KS KE U W T		2		
EIEF45	7.5	G2	V		4 - 18/19	3	X	E1	Automation	KS KE U W T			3	
MMTN30	7.5	A	V		4 - 18/19	4	-	S	Flexible Manufacturing Systems	KS KE U W T			3	
MION01	7.5	A	V		4 - 18/19	4	X	E	Management of Production and Inventory Systems	KS KE U W T			3	
MMTF25	7.5	G2	V		4 - 18/19	4	-	S	Computer Aided Design/Computer Aided Manufacturing	KS KE U W T				4

Course Code	Credits	Cycle	Mand./ Elect.	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1 sp2 sp3 sp4			
											sp1	sp2	sp3	sp4
MMTN05	7.5	A	V	4 - 18/19	4	-	S	Flexible Manufacturing Systems, Advanced Course		KS KE U W T				4
MION40	7.5	A	V	5 - 19/20	4	X	E1	Simulation of Industrial Processes and Logistic Systems		KS KE U W T	1			
MTTN75	7.5	A	V	5 - 19/20	5	X	E	Industrial Purchasing		KS KE U W T		2		
MMTN10	7.5	A	V	5 - 19/20	4	-	S	International Product Realisation		KS KE U T		2		
MION50	7.5	A	V	5 - 19/20	4	X	E	Quality Management		KS KE U W T		2		

Specialisation pvs - Software Intensive Systems

Course Code	Credits	Cycle	Mand./ Elect.		Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links			
											sp1	sp2	sp3	sp4
ERTN10	7.5	A	V		4 - 18/19	4	X	E1	Multivariable Control	KS KE U W T	1			
EDAF60	4.5	G2	V		4 - 18/19	4	-	S	Object-oriented Modelling and Design	KS KE U W T	1			
ETSN05	7.5	A	V		4 - 18/19	4	-	S	Software Development for Large Systems	KS KE U W T	1			
EDAN10	7.5	A	V		4 - 18/19	4	X	E	Configuration Management	KS KE U W T		2		
ETSN20	7.5	A	V		4 - 18/19	4	X	E	Software Testing	KS KE U W T		2		
ETSN10	7.5	A	V		4 - 18/19	4	X	E	Network Architecture and Performance	KS KE U W T			3	
ETSN15	7.5	A	V		4 - 18/19	4	X	S	Requirements Engineering	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
EITN01	10	A	V	4 - 18/19	4	X	E	Real-Time Systems		KS KE U W T			3	4
EITN95	7.5	A	V	4 - 18/19	4	X	E1	Simulation		KS KE U W T				4
EITN35	7.5	A	V	5 - 19/20	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS KE U W T	1			
MION25	7.5	A	V	5 - 19/20	4	-	S	Technology Strategy		KS KE U W T	1			
EITN35	7.5	A	V	5 - 19/20	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS KE U W T		2		
EITN35									X				3	
EITN35									X					4

[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.*

Elective Courses - I

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
										sp1	sp2	sp3	sp4
EITN35	7.5	A	4 - 18/19	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS KE U W T	1			
EXTP50	7.5	A	4 - 18/19	4	-	E	Advanced Microeconomic Analysis		KS KE U W T	1			
MMKF15	7.5	G2	4 - 18/19	4	X	E	Applied Robotics		KS KE U W T	1			
MVKN40	5	A	4 - 18/19	4	-	S	District Heating and Cooling		KS KE U W T	1			
IYT000	15	G2	4 - 18/19	3	-	S	Engineering Training Course		KS KE U W	1			
EXTQ25	7.5	A	4 - 18/19	4	X	E	Financial Economics, Advanced Course	X	KS KE U W T	1			
MION30	7.5	A	4 - 18/19	4	-	S	Industrial Management		KS KE U W T	1			

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
										sp1	sp2	sp3	sp4
INTN01	7.5	A	4 - 18/19	4	X	E	Innovation Engineering		KS KE U W T	1			
EMSE15	7.5	G2	4 - 18/19	4	X	E	Markov Processes		KS KE U W T	1			
ERTN10	7.5	A	4 - 18/19	4	X	E1	Multivariable Control		KS KE U W T	1			
EXTF40	7.5	G2	4 - 18/19	4	-	S	Option Theory	X	KS KE U W T	1			
MTTN40	7.5	A	4 - 18/19	4	X	E	Packaging Technology and Development		KS KE U W T	1			
EXTF35	7.5	G2	4 - 18/19	4	-	E	Portfolio Selection	X	KS KE U W T	1			
MMKN35	7.5	A	4 - 18/19	4	X	E1	Product Innovation		KS KE U W T	1			

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
										sp1	sp2	sp3	sp4
MMTN25	7.5	A	4 - 18/19	4	-	S	Production Technology		KS KE U W T	1			
ETSN05	7.5	A	4 - 18/19	4	-	S	Software Development for Large Systems		KS KE U W T	1			
EMSE10	7.5	G2	4 - 18/19	3	X	E	Stationary Stochastic Processes		KS KE U W T	1			
MION25	7.5	A	4 - 18/19	4	-	S	Technology Strategy		KS KE U W T	1			
MMVA01	5	G1	4 - 18/19	4	-	S	Thermodynamics and Fluid Mechanics, Basic Course		KS KE U W T	1			
MTTN25	7.5	A	4 - 18/19	4	X	E	Warehousing and Materials Handling		KS KE U W T	1			
EMIN25	7.5	A	4 - 18/19	4	-	S	Energy Systems Analysis: Energy, Environment and Natural Resources		KS KE U W T	1	2		

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
										sp1	sp2	sp3	sp4
MVKN05	7.5	A	4 - 18/19	4	-	S	Project - Formula Student		KS KE U W T	1	2	3	4
EITN35	7.5	A	4 - 18/19	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS KE U W T		2		
MION05	7.5	A	4 - 18/19	4	-	S	Business Marketing		KS KE U W T		2		
EDAN10	7.5	A	4 - 18/19	4	X	E	Configuration Management		KS KE U W T		2		
EXTG65	7.5	G2	4 - 18/19	3	-	S	Econometrics	X	KS KE U W T		2		
EXTN05	7.5	A	4 - 18/19	3	X	E	Econometrics, Advanced Course	X	KS KE U W T		2		
EXTN80	7.5	A	4 - 18/19	4	X	E	Economic and Financial Decision-making	X	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
EXTQ30	7.5	A	4 - 18/19	4	X	E	Economics, Empirical Finance	X	KS KE U W T		2		
IYT000	15	G2	4 - 18/19	3	-	S	Engineering Training Course		KS KE U W		2		
EXTE30	7.5	G2	4 - 18/19	3	-	S	Fixed Income Securities	X	KS KE U W T		2		
MTTN45	7.5	A	4 - 18/19	4	X	E	Humanitarian Logistics - disaster relief and logistics in developing countries		KS KE U W T		2		
MTTN75	7.5	A	4 - 18/19	4	X	E	Industrial Purchasing		KS KE U W T		2		
EMSN45	7.5	A	4 - 18/19	4	X	E	Mathematical Statistics, Time Series Analysis		KS KE U W T		2		
FMNN10	8	A	4 - 18/19	4	X	E1	Numerical Methods for Differential Equations		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
MTTN35	7.5	A	4 - 18/19	4	X	E	Packaging Logistics		KS KE U W T		2		
MIOF10	7.5	G2	4 - 18/19	4	X	E	Production and Inventory Control		KS KE U W T		2		
MION50	7.5	A	4 - 18/19	4	X	E	Quality Management		KS KE U W T		2		
ETSN20	7.5	A	4 - 18/19	4	X	E	Software Testing		KS KE U W T		2		
EITN35	7.5	A	4 - 18/19	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS KE U W T			3	
MION20	7.5	A	4 - 18/19	4	-	S	Applied Business Analysis		KS KE U W T			3	
EIEF45	7.5	G2	4 - 18/19	3	X	E1	Automation		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		
EITF70	6	G2	4 - 18/19	3	-	S	Computer Organization		KS	KE	U	W	T	3
EITA25	7.5	G1	4 - 18/19	4	X	S	Computer Security		KS	KE	U	W	T	3
EXTG60	7.5	G2	4 - 18/19	3	X	E	Economics, Industrial Organization	X	KS	KE	U	W	T	3
MVKN20	7.5	A	4 - 18/19	4	-	S	Energy Utilization		KS	KE	U	W	T	3
IYT000	15	G2	4 - 18/19	3	-	S	Engineering Training Course		KS	KE	U	W		3
EXTQ35	7.5	A	4 - 18/19	4	X	E	Financial Valuation and Risk Management	X	KS	KE	U	W	T	3
INNN01	7.5	A	4 - 18/19	4	X	E	Innovation Management		KS	KE	U	W	T	3

Course Code	Credits	Cycle		From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
		Year								sp1	sp2	sp3	sp4	
MTTN70	7.5	A	4 - 18/19	4	X	E	International Physical Distribution		KS	KE	U	W	T	3
MION01	7.5	A	4 - 18/19	4	X	E	Management of Production and Inventory Systems		KS	KE	U	W	T	3
ERTN45	4.5	A	4 - 18/19	3	-	S	Mathematical Modelling, Advanced Course		KS	KE	U	W	T	3
EMSN50	7.5	A	4 - 18/19	4	X	E	Monte Carlo and Empirical Methods for Stochastic Inference		KS	KE	U	W	T	3
ETSN10	7.5	A	4 - 18/19	4	X	E	Network Architecture and Performance		KS	KE	U	W	T	3
ETIA10	7.5	G1	4 - 18/19	3	X	E	Patent and Intellectual Property Rights		KS	KE	U	W	T	3
EMSF05	7.5	G2	4 - 18/19	4	X	E	Probability Theory		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			
ETSN15	7.5	A	4 - 18/19	4	X	S	Requirements Engineering		KS	KE	U	W	T	3	
EDAE90	7.5	G2	4 - 18/19	4	X	S	Web Programming		KS	KE	U	T		3	
EDAE75	7.5	G2	4 - 18/19	4	X	S	Database Technology		KS	KE	U	W	T	3	4
MMKN11	7.5	A	4 - 18/19	4	X	E	Design for X		KS	KE	U	W	T	3	4
FRTN20	7.5	A	4 - 18/19	4	X	E1	Market-driven Systems		KS	KE	U	W	T	3	4
MAME21	7.5	G2	4 - 18/19	4	-	S	Working Environment, Occupational Health and Safety		KS	KE	U	W	T	3	4
EITN35	7.5	A	4 - 18/19	4	X	E1	Advanced Course in Electrical and Information Technology	X	KS	KE	U	W	T		4

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
									sp1	sp2	sp3	sp4		
EIEN35	7.5	A	4 - 18/19	4	X	E1	Automation for Complex Systems		KS	KE	U	W	T	4
MTTN60	7.5	A	4 - 18/19	4	X	E	Business Process Management		KS	KE	U	W	T	4
MMTF25	7.5	G2	4 - 18/19	4	-	S	Computer Aided Design/Computer Aided Manufacturing		KS	KE	U	W	T	4
EXTG65	7.5	G2	4 - 18/19	3	-	S	Econometrics	X	KS	KE	U	W	T	4
MVKN15	7.5	A	4 - 18/19	4	-	S	Energy Supply Systems		KS	KE	U	W	T	4
IYT000	15	G2	4 - 18/19	3	-	S	Engineering Training Course		KS	KE	U	W		4
EXTE30	7.5	G2	4 - 18/19	3	-	S	Fixed Income Securities	X	KS	KE	U	W	T	4

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links					
									sp1	sp2	sp3	sp4		
MMTN05	7.5	A	4 - 18/19	4	-	S	Flexible Manufacturing Systems, Advanced Course		KS	KE	U	W	T	4
INNN10	7.5	A	4 - 18/19	4	X	E	Globalization and Innovation		KS	KE	U	W	T	4
KIIF01	7.5	G2	4 - 18/19	4	X	E1	Industrial Environmental Management		KS	KE	U	W	T	4
EMSN30	7.5	A	4 - 18/19	4	X	E	Linear and Logistic Regression	X	KS	KE	U	W	T	4
EMAN45	7.5	A	4 - 18/19	4	-	E	Machine Learning		KS	KE	U	W	T	4
MAMN30	7.5	A	4 - 18/19	3	-	S	Management, Work Organisation and Project Management		KS	KE	U	W	T	4
ERTN30	7.5	A	4 - 18/19	4	X	E	Network Dynamics		KS	KE	U	W	T	4

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links	sp1 sp2 sp3 sp4			
										sp1	sp2	sp3	sp4
MION45	7.5	A	4 - 18/19	4	X	E	Operations Strategy		KS KE U W T				4
EITN95	7.5	A	4 - 18/19	4	X	E1	Simulation		KS KE U W T				4
EMSN55	7.5	A	4 - 18/19	4	X	E	Statistical Modelling of Extreme Values		KS KE U W T				4
MTTN80	7.5	A	4 - 18/19	4	X	E	Supply Chain Management		KS KE U W T				4
EMFE35	7.5	G2	4 - 18/19	3	X	E	Complex Economy	X	KS KE U W T	Course on hold			
FMSN35	7.5	A	4 - 18/19	4	X	E	Stationary and Non-stationary Spectral Analysis	X	KS KE U W T	Course on hold			
BMEA01	6	G1	4 - 18/19	4	-	S	Medicine for Engineers	X	KS KE U W T	Course on hold			
MMTN15	7.5	A	5 - 19/20	4	X	E1	Project - Production and Materials Engineering	X	KS KE U W T	1			
EDAN70	7.5	A	5 - 19/20	4	X	E1	Project in Computer Science	X	KS KE U W T	1			

Course Code	Credits	Cycle	Year	From year	S.Ex. stud.	Language	Course Name	Footnote	Links				
										sp1	sp2	sp3	sp4
MVKN30	7.5	A	5 - 19/20	5	-	S	Advanced Efficient Energy Systems		KS KE U W T	1	2		
EMIN15	7.5	A	5 - 19/20	4	-	S	Environmental Management Systems		KS KE U W T	1	2		
MTTN65	7.5	A	5 - 19/20	5	X	E	Project and Research Methodologies in Supply Chain Management		KS KE U T	1	2		
INNA01	7.5	G1	5 - 19/20	4	X	E	Entrepreneurship - how to Build a Scalable Start-up		KS KE U W T		2		
MTTN56	7.5	A	5 - 19/20	4	X	E	Packaging Material Science		KS KE U W T		2		
MMTN15	7.5	A	5 - 19/20	4	X	E1	Project - Production and Materials Engineering	X	KS KE U W T		2		
EDAN70	7.5	A	5 - 19/20	4	X	E1	Project in Computer Science	X	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		
MMTN15	7.5	A	5 - 19/20	4	X	E1	Project - Production and Materials Engineering	X	KS	KE	U	W	T	3
EDAN70	7.5	A	5 - 19/20	4	X	E1	Project in Computer Science	X	KS	KE	U	W	T	3
MMTN15	7.5	A	5 - 19/20	4	X	E1	Project - Production and Materials Engineering	X	KS	KE	U	W	T	4
EDAN70	7.5	A	5 - 19/20	4	X	E1	Project in Computer Science	X	KS	KE	U	W	T	4

[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.*

[EXTQ25](#) Financial Economics, Advanced Course: *The course is to be studied together with NEKN81, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTF40](#) Option Theory: *The course is to be studied together with NEKH82, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTE35](#) Portfolio Selection: *The course is to be studied together with NEKH81, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTG65](#) Econometrics: *The course is to be studied together with NEKG31, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTN05](#) Econometrics, Advanced Course: *The course is to be studied together with NEKN31, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTN80](#) Economic and Financial Decision-making: *The course is to be studied together with NEKN22, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTQ30](#) Economics, Empirical Finance: *The course is to be studied together with NEKN82, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTE30](#) Fixed Income Securities: *The course is to be studied together with NEKG81, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTG60](#) Economics, Industrial Organization: *The course is to be studied together with NEKH21, which is given by the Department of Economics. Does not follow the study period structure.*

[EXTQ35](#) Financial Valuation and Risk Management: *The course is to be studied together with NEKN83, which is given by the Department of Economics. Does not follow the study period structure.*

[FMSN30](#) Linear and Logistic Regression: *Only one of the courses [FMSN30](#) and [FMSN40](#) may be included in a degree.*

[FMFE35](#) Complex Economy: *The course is offered every other academic year and will next be offered in 2019/20.*

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

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

[MMTN15](#) Project - Production and Materials Engineering: *The course start is decided by the department.*

[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.*

Externally Elective Courses - I

Course Code	Credits	Cycle	Language			S.Ex. stud.	Course Name	Footnote	Links	sp1 sp2 sp3 sp4			
			Year	From year						sp1	sp2	sp3	sp4
GEMA20	7.5	G1	4 - 18/19	1	-	E	English for Engineers	X	KS KE U W T	1	2		
GEMA25	7.5	G1	4 - 18/19	1	-	S	German for Engineers	X	KS KE U W T	1	2		
GEMA60	7.5	G1	4 - 18/19	1	-	S	Law for Engineers, Introductory Course in Business Law	X	KS KE U W T	1	2		
GEMA70	15	G1	4 - 18/19	1	-	S	Japanese for Engineers	X	KS KE U W T	1	2	3	
GEMA65	7.5	G1	4 - 18/19	1	-	S	Chinese for Engineers	X	KS KE U W T			3	4
GEMA20	7.5	G1	4 - 18/19	1	-	E	English for Engineers	X	KS KE U W T			3	4
GEMA01	7.5	G1	4 - 18/19	1	-	S	French for Engineers: Language, Culture and Society, First Course	X	KS KE U W T			3	4

[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.*

[GEMA60](#) Law for Engineers, Introductory Course in Business Law: *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.*

[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.*

[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 - I

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

Links

Course Code	Credits	Course Name	Links
FMSL01	15	Bachelor Project in Mathematical Statistics	KS KE U W
MIOL01	15	Bachelor Project in Production Management	KS KE U

Degree Projects - I

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

Links

Course Code	Credits	Course Name	Links
FRTM01	30	Degree Project in Automatic Control	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
MVKM01	30	Degree Project in Energy Sciences	KS KE U W
MTTM05	30	Degree Project in Engineering Logistics	KS KE U W
FKMM01	30	Degree Project in Engineering Materials	KS KE U W
FMIM01	30	Degree Project in Environmental Studies	KS KE U W
MAMM10	30	Degree Project in Ergonomics	KS KE U W
EXTM10	30	Degree Project in Financial Economics	KS KE U W
EIEM01	30	Degree Project in Industrial Electrical Engineering and Automation	KS KE U W
INNEM01	30	Degree Project in Innovation	KS KE U
INTM01	30	Degree Project in Innovation Engineering	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
FMEM01	30	Degree Project in Mechanics for Engineers	KS KE U W
FMNM01	30	Degree Project in Numerical Analysis	KS KE U W
MTTM10	30	Degree Project in Packaging Logistics	KS KE U W
PHYM01	30	Degree Project in Physics	KS KE U W
MMKM05	30	Degree Project in Product Development	KS KE U W
MMTM01	30	Degree Project in Production and Materials Engineering	KS KE U W
MIOM05	30	Degree Project in Production Management	KS KE U W
FHLM01	30	Degree Project in Solid Mechanics for Engineers	KS KE U W