

# Industrial Engineering and Management - International, M Sc in Engineering

300 credits

Civilingenjör i industriell ekonomi - internationell

6CIEI

Valid from: 2014 Spring semester

**Determined by**Board of Studies for Industrial
Engineering and Logistics

Date determined

## **Entry requirements**

## Degree in Swedish

Civilingenjör 300 hp och Teknologie master 120 hp



## Curriculum

## Semester 6 (Spring 2017)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIM32	Industrial Marketing	6	G2X	4	С
TDDD81	Database Technology	6*	G2X	2	E
TDDD83	Computer Engineering - Bachelor Project	18*	G2X	1/3	E
TDDE11	Object Oriented Programming in Java	4	G2X	2	E
TFBI23	Ecology and the Environment	6	G1X	3	E
TFBI24	Biotechnology - Bachelor Project	18*	G2X	2	E
ТКМЈ39	Resource Efficient Products and Production	6	G2X	1	E
TMKT14	CAD and Machine Elements	6	G2X	1	E
TMMV16	Energy Engineering - Bachelor Project	18*	G2X	3	E
TMPS32	Mechanical Engineering - Bachelor Project	18*	G2X	3	E
TSEA56	Electronics Engineering - Bachelor Project	16*	G2X	2	E
Period 2					
TDDD12	Database Technology	6	G2X	4	E
TDDD81	Database Technology	6*	G2X	4	E
TDDD83	Computer Engineering - Bachelor Project	18*	G2X	1/3	E
TFBI24	Biotechnology - Bachelor Project	18*	G2X	2/3/4	E
TMMV16	Energy Engineering - Bachelor Project	18*	G2X	3	E
TMPS32	Mechanical Engineering - Bachelor Project	18*	G2X	3	E
TSEA56	Electronics Engineering - Bachelor Project	16*	G2X		E
TSKS10	Signals, Information and Communication	4	G2X	3	E

#### Specialisation: Specialization Biotechnical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TFBI23	Ecology and the Environment	6	G1X	3	С
TFBI24	Biotechnology - Bachelor Project	18*	G2X	2	E
Period 2					
TFBI24	Biotechnology - Bachelor Project	18*	G2X	2/3/4	E



#### Specialisation: Specialization Computer Science and Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD81	Database Technology	6*	G2X	2	Е
TDDD83	Computer Engineering - Bachelor Project	18*	G2X	1/3	Е
Period 2					
TDDD12	Database Technology	6	G2X	4	С
TDDD81	Database Technology	6*	G2X	4	E
TDDD83	Computer Engineering - Bachelor Project	18*	G2X	1/3	E

#### Specialisation: Specialization Electrical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDE11	Object Oriented Programming in Java	4	G2X	2	С
TSEA56	Electronics Engineering - Bachelor Project	16*	G2X	2	E
Period 2					
TSKS10	Signals, Information and Communication	4	G2X	3	С
TSEA56	Electronics Engineering - Bachelor Project	16*	G2X	-	E

#### Specialisation: Specialization Energy Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TKMJ39	Resource Efficient Products and Production	6	G2X	1	С
TMMV16	Energy Engineering - Bachelor Project	18*	G2X	3	E
Period 2					
TMMV16	Energy Engineering - Bachelor Project	18*	G2X	3	E



#### Specialisation: Specialization Mechanical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMKT14	CAD and Machine Elements	6	G2X	1	С
TMPS32	Mechanical Engineering - Bachelor Project	18*	G2X	3	E
Period 2					
TMPS32	Mechanical Engineering - Bachelor Project	18*	G2X	3	E

## Semester 7 (Autumn 2017)

				module	
Period 1					
THFR18 Fr	rench for Engineers III	6*	G2X	-	С
TAMS32 St	tochastic Processes	6	A1X	1	Е
TAMS46 Pr	robability Theory, Second Course	6	A1X	3	Е
TANA21 Sc	cientific Computing	6	G1X	3	E
TAOP34 La	arge Scale Optimization	6	A1X	3	Е
TATA34 Re	eal Analysis, Honours Course	6*	G2X	4	E
TATA44 Ve	ector Analysis	4	G1X	1	E
TDDC17 Ar	rtificial Intelligence	6	G2X	3	Е
TDDC88 Sc	oftware Engineering	12*	A1X	1	Е
TDDD23 De	esign and Programming of Computer Games	6	A1X	2	E
TDDD38 Ad	dvanced Programming in C++	6*	A1X	2	Е
TDDD43 Ad	dvanced Data Models and Databases	6*	A1X	2	Е
TDDE18 Pr	rogramming C++	6*	G2X	4	E
HINEING	trategic Application of IT: E-business and nowledge Management	6	A1X	4	E
11)+113	nterprise Resource Planning Systems: rocess and Implementation	6	A1X	2	E
TEIE72 Co	orporate Strategies	6	A1X	4	E
TEIO07 Pr	roject Based Organization and Management	6	A1X	4	E
TEIO90 In	novation Management	6	A1X	2	E
TETS23 Pu	urchasing	6	A1N	2	Е
TETS37 Ba	asics in Logistics Management	6	G2X	4	E



Course code	Course name	Credits	Level	Timetable module	ECV
TKMJ31	Biofuels for Transportation	6	A1X	1	E
TKMJ49	Environmentally Driven Business Development	6*	A1X	3	E
TMES09	Industrial Energy Systems	6	A1X	3	E
TMES27	Modelling of Energy Systems	6	A1X	3	E
TMKM16	Materials Selection and Optimization	6	A1X	4	E
ТМКМ90	Engineering Materials - Deformation and Fracture	6	A1X	4	E
TMKT80	Wood - Material	6	G2X	2	Е
TMPS35	Emerging Factory Technologies	6	A1X	3	E
TMQU03	Quality Management and Engineering	6	G2X	2	E
TPPE16	Manufacturing Strategies	6	A1X	2	E
TPPE17	Corporate Finance	6	G2X	4	E
TSBB06	Multidimensional Signal Analysis	6*	A1X	2	E
TSBB08	Digital Image Processing	6	A1X	4	E
TSDT14	Signal Theory	6	A1X	1	E
TSKS01	Digital Communication	6*	A1X	4	E
TSKS15	Detection and Estimation of Signals	6	A1X	2	E
TSRT62	Modelling and Simulation	6	A1X	3	E
TSTE86	Digital Integrated Circuits	6	A1X	2	E
Period 2					
THFR18	French for Engineers III	6*	G2X	-	С
NBID31	Modelling of Biological Systems	6	A1X	3/4	E
TAOP04	Mathematical Optimization	6	A1X	4	E
TATA34	Real Analysis, Honours Course	6*	G2X	4	E
TATA45	Complex Analysis	6	G2X	1	Е
TDDC88	Software Engineering	12*	A1X	1	Е
TDDD07	Real Time Systems	6	A1X	4	Е
TDDD38	Advanced Programming in C++	6*	A1X	-	E
TDDD43	Advanced Data Models and Databases	6*	A1X	2	E
TDDD55	Compilers and Interpreters	4	G2X	1	E
TDDD71	Data Structures and Algorithms	2	G2X	1	E
TDDE18	Programming C++	6*	G2X	3	E



Course code	Course name	Credits	Level	Timetable module	ECV
TDEI19	Management Control	6	A1X	2	E
TEIE42	Industrial Sales Management	6	A1X	4	E
TEIM10	Industrial Service Development	6	A1X	2	E
TETS27	Supply Chain Logistics	6	A1X	2	E
TKMJ35	Industrial Ecology	6	G2X	3	E
TKMJ49	Environmentally Driven Business Development	6*	A1X	3	Е
TMHL63	Introduction to Computational Mechanics	6	G2X	3	E
TMKT71	Affective Engineering	6	A1X	2	Е
TMKT81	Wood - Realisation	6	G2X	1	E
TMMV18	Fluid Mechanics	6	A1X	2	Е
TMMV54	Computational Heat Transfer	6	A1X	1	E
TMPS18	Engineering Design and Product Development	6	A1X	3	E
TMPS22	Assembly Technology	6	A1X	3	E
TMQU12	Lean Production	6	A1X	2	Е
TPPE21	Production Logistics	6	A1X	4	Е
TPPE29	Financial Markets and Instruments	6	A1X	2	Е
TSBB06	Multidimensional Signal Analysis	6*	A1X	3	Е
TSBB09	Image Sensors	6	A1X	4	E
TSEA81	Computer Engineering and Real-time Systems	6	A1X	4	E
TSIT02	Computer Security	6	G2F	2	Е
TSKS01	Digital Communication	6*	A1X	4	E
TSKS11	Networks: Models, Algorithms and Applications	6	G2X	3	E
TSRT78	Digital Signal Processing	6	A1X	2	Е



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSDT14	Signal Theory	6	A1X	1	С
TSRT62	Modelling and Simulation	6	A1X	3	С
Period 2					
TSEA81	Computer Engineering and Real-time Systems	6	A1X	4	Е
TSRT78	Digital Signal Processing	6	A1X	2	E

#### Specialisation: Master Profile Computer Science and Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDC88	Software Engineering	12*	A1X	1	С
Period 2					
TDDC88	Software Engineering	12*	A1X	1	С

#### Specialisation: Master Profile Economic Information Systems

Course code	Course name	Credits	Level	Timetable module	ECV		
Period 1							
TDEI09	Strategic Application of IT: E-business and Knowledge Management	6	A1X	4	С		
TDEI13	Enterprise Resource Planning Systems: Process and Implementation	6	A1X	2	E		
Period 2	Period 2						
TDEI19	Management Control	6	A1X	2	С		

#### Specialisation: Master Profile Energy Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMES09	Industrial Energy Systems	6	A1X	3	E
TMES27	Modelling of Energy Systems	6	A1X	3	Е
Period 2					
TMMV18	Fluid Mechanics	6	A1X	2	E
TMMV54	Computational Heat Transfer	6	A1X	1	Е



#### Specialisation: Master Profile Finance

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TPPE17	Corporate Finance	6	G2X	4	E
Period 2					
TPPE29	Financial Markets and Instruments	6	A1X	2	С

#### Specialisation: Master Profile Industrial Marketing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIE72	Corporate Strategies	6	A1X	4	E
Period 2					
TEIE42	Industrial Sales Management	6	A1X	4	C/E
TEIM10	Industrial Service Development	6	A1X	2	C/E

#### Specialisation: Master Profile Logistics Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TETS37	Basics in Logistics Management	6	G2X	4	С
TETS23	Purchasing	6	A1N	2	E
Period 2					
TETS27	Supply Chain Logistics	6	A1X	2	C/E

#### Specialisation: Master Profile Manufacturing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMPS35	Emerging Factory Technologies	6	A1X	3	E
Period 2					
TMPS22	Assembly Technology	6	A1X	3	С



#### Specialisation: Master Profile Manufacturing Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TPPE16	Manufacturing Strategies	6	A1X	2	С
Period 2					
TPPE21	Production Logistics	6	A1X	4	E

#### Specialisation: Master Profile Product Development

Course code	Course name	Credits	Level	Timetable module	ECV
Period 2					
TMPS18	Engineering Design and Product Development	6	A1X	3	Е

#### Specialisation: Master Profile Project, Innovation and Entrepreneurship

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIO90	Innovation Management	6	A1X	2	С
TEIO07	Project Based Organization and Management	6	A1X	4	E
TKMJ49	Environmentally Driven Business Development	6*	A1X	3	E
Period 2					
TKMJ49	Environmentally Driven Business Development	6*	A1X	3	E

#### Specialisation: Master Profile Quality Technology and Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMQU03	Quality Management and Engineering	6	G2X	2	E
Period 2					
TMQU12	Lean Production	6	A1X	2	С



#### Specialisation: Master Profile Signal and Image Processing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSBB08	Digital Image Processing	6	A1X	4	С
TSDT14	Signal Theory	6	A1X	1	С
TSBB06	Multidimensional Signal Analysis	6*	A1X	2	E
Period 2					
TSBB06	Multidimensional Signal Analysis	6*	A1X	3	E
TSBB09	Image Sensors	6	A1X	4	E
TSRT78	Digital Signal Processing	6	A1X	2	E

#### Specialisation: Master Profile Strategic Management and Control

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIE72	Corporate Strategies	6	A1X	4	С
TEIO90	Innovation Management	6	A1X	2	E
TKMJ49	Environmentally Driven Business Development	6*	A1X	3	E
TPPE16	Manufacturing Strategies	6	A1X	2	E
Period 2					
TDEI19	Management Control	6	A1X	2	С
TEIE42	Industrial Sales Management	6	A1X	4	E
TKMJ49	Environmentally Driven Business Development	6*	A1X	3	E

#### Specialisation: Master Profile Telecommunication

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSDT14	Signal Theory	6	A1X	1	С
TSKS01	Digital Communication	6*	A1X	4	С
TSKS15	Detection and Estimation of Signals	6	A1X	2	E
Period 2					
TSKS01	Digital Communication	6*	A1X	4	С
TSIT02	Computer Security	6	G2F	2	E
TSKS11	Networks: Models, Algorithms and Applications	6	G2X	3	E



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMKT80	Wood - Material	6	G2X	2	С
TMKM16	Materials Selection and Optimization	6	A1X	4	E
Period 2					
TMKT81	Wood - Realisation	6	G2X	1	С

#### Specialisation: Specialization Biotechnical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TKMJ31	Biofuels for Transportation	6	A1X	1	Е
Period 2					
NBID31	Modelling of Biological Systems	6	A1X	3/4	С
TKMJ35	Industrial Ecology	6	G2X	3	E

Specialisation: Specialization Computer Science and Engineering



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDC88	Software Engineering	12*	A1X	1	С
TDDC17	Artificial Intelligence	6	G2X	3	Е
TDDD23	Design and Programming of Computer Games	6	A1X	2	E
TDDD38	Advanced Programming in C++	6*	A1X	2	E
TDDE18	Programming C++	6*	G2X	4	E
TSTE86	Digital Integrated Circuits	6	A1X	2	E
Period 2					
TDDC88	Software Engineering	12*	A1X	1	С
TDDD71	Data Structures and Algorithms	2	G2X	1	С
TDDD38	Advanced Programming in C++	6*	A1X	-	E
TDDD55	Compilers and Interpreters	4	G2X	1	E
TDDE18	Programming C++	6*	G2X	3	E
TSEA81	Computer Engineering and Real-time Systems	6	A1X	4	E
TSIT02	Computer Security	6	G2F	2	E
TSKS11	Networks: Models, Algorithms and Applications	6	G2X	3	E



#### Specialisation: Specialization Electrical Engineering

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Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSBB06	Multidimensional Signal Analysis	6*	A1X	2	Е
TSBB08	Digital Image Processing	6	A1X	4	E
TSDT14	Signal Theory	6	A1X	1	E
TSKS01	Digital Communication	6*	A1X	4	E
TSKS15	Detection and Estimation of Signals	6	A1X	2	Е
TSRT62	Modelling and Simulation	6	A1X	3	E
TSTE86	Digital Integrated Circuits	6	A1X	2	E
Period 2					
TSBB06	Multidimensional Signal Analysis	6*	A1X	3	E
TSBB09	Image Sensors	6	A1X	4	Е
TSEA81	Computer Engineering and Real-time Systems	6	A1X	4	E
TSIT02	Computer Security	6	G2F	2	Е
TSKS01	Digital Communication	6*	A1X	4	E
TSKS11	Networks: Models, Algorithms and Applications	6	G2X	3	E
TSRT78	Digital Signal Processing	6	A1X	2	Е

#### Specialisation: Specialization Energy Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMES09	Industrial Energy Systems	6	A1X	3	E
TMES27	Modelling of Energy Systems	6	A1X	3	E
Period 2					
TMMV18	Fluid Mechanics	6	A1X	2	E
TMMV54	Computational Heat Transfer	6	A1X	1	Е



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TANA21	Scientific Computing	6	G1X	3	E
TMKM16	Materials Selection and Optimization	6	A1X	4	E
ТМКМ90	Engineering Materials - Deformation and Fracture	6	A1X	4	E
TMKT80	Wood - Material	6	G2X	2	Е
TMPS35	Emerging Factory Technologies	6	A1X	3	E
Period 2					
TMKT71	Affective Engineering	6	A1X	2	E
TMKT81	Wood - Realisation	6	G2X	1	E
TMPS18	Engineering Design and Product Development	6	A1X	3	E
TMPS22	Assembly Technology	6	A1X	3	E

## Semester 8 (Spring 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIE06	Corporate Planning	6*	A1X	-	С
NBIC50	Ecotoxicology and Environmental Monitoring	6	G2X	1	Е
TAMS29	Stochastic Processes Applied to Financial Models	6	A1X	3	E
TATA53	Linear Algebra, Honours Course	6*	G2X	-	E
TBMI26	Neural Networks and Learning Systems	6	A1X	2	E
TDDB68	Concurrent Programming and Operating Systems	6	G2X	3	E
TDDD17	Information Security, Second Course	6*	A1X	4	E
TDDD20	Design and Analysis of Algorithms	6	A1X	3	E
TDDD38	Advanced Programming in C++	6*	A1X	2	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1X	3	E
TDDD51	Service Design and Innovation	6	A1X	4	E
TDDD57	Physical Interaction and Game Programming	6	A1X	1	E



Course code	Course name	Credits	Level	Timetable module	ECV
TDDD75	Effect-Driven Development and Human- Centered Design of Interactive Systems	6	G2X	3	E
TDDD97	Web Programming	6	G2X	3	Е
TDEI71	Digitisation, Business Ecologies and Business Models	6	A1N	4	E
TDTS04	Computer Networks and Distributed Systems	8	G2X	2	E
TEIE88	Computer Law	4	G1X	1	E
TEIM09	International Business	6	A1X	2	E
TEIO13	Leadership and Organizational Change	6	A1X	4	Е
TETS57	Logistics Analysis	6	A1X	2	E
TFYA45	Biotechnology Project	6*	A1X	-	E
TFYA62	Introduction to Biosensor Technology	6	G2X	4	E
TFYA85	Alternative Energy Sources and their Applications	6	G2X	4	E
TGTU01	Technology and Ethics	6	G1X	1	E
TGTU91	Oral and Written Communication	6	G1X	2	Е
TKMJ10	Industrial Ecology	6	A1X	1	Е
TKMJ47	Environmental Systems Analysis	6*	A1N	2	E
TMES17	Building Energy Systems	6	A1N	3	E
TMES43	Analysis and Modelling of Industrial Energy Systems	6	A1F	1	E
TMKA04	Wood - Innovation	6	A1X	1	Е
TMKT48	Design Optimization	6	A1X	3	E
TMMS21	Mechatronics	6	G2X	1	E
TMPS42	Production System Automation	6	A1X	1	E
TMQU31	Statistical Quality Control	6	A1X	2	E
TPPE32	Financial Risk Management	6	A1X	2	E
TPPE78	Quantitative Models and Analysis in Operations Management	6	A1X	1	E
TSBB15	Computer Vision	12*	A1X	1	E
TSBK07	Computer Graphics	6*	A1X	4	E
TSBK08	Data Compression	6	A1X	2	Е
TSKS13	Wireless Communications	6	A1F	4	E
TSRT07	Industrial Control Systems	6	A1X	2	Е



TSRT09 C				module	ECV
	Control Theory	6	A1X	3	Е
TSTE08 A	nalog and Discrete-Time Integrated Circuits	6	A1X	3	Е
TVCB11 C	Cellbiological Methodology	6	G2X	1/4	Е
Period 2					
TEIE06 C	orporate Planning	6*	A1X	-	С
TATA53 Li	inear Algebra, Honours Course	6*	G2X	=	E
TDDC/X	rogramming of Parallel Computers - Methods nd Tools	6	A1X	3	E
TDDD05 C	Component Based Software	6	A1X	1	E
TDDD14 F	ormal Languages and Automata Theory	6	G2X	2	Е
TDDD17 Ir	nformation Security, Second Course	6*	A1X	4	Е
TDDD27 A	dvanced Web Programming	6	A1X	3	E
TDDD38 A	dvanced Programming in C++	6*	A1X	-	E
11)[1/1	trategic Organisational Application of IT - Vorkflow and Knowledge Management	6	A1X	4	E
TDEI35 S	trategy and Management Control	6	A1X	2	E
TEAE13 C	ivil and Commercial Law	6	G1X	2	Е
TEIM07 Ir	ndustrial Market Research	6	A1X	2	E
TEIO06 Ir	nnovative Entrepreneurship	6	A1X	2	E
TEIO41 C	orporate Social Responsibility	6	A1X	3	E
TETS36 S	ustainable Logistics Systems	6	A1X	4	E
TETS56 Lo	ogistics and Quality in Health Care	6	A1X	4	E
TFYA45 B	iotechnology Project	6*	A1X	-	E
TGTU76 P	hilosophy of Science	6	G1X	4	E
TKMJ47 E	nvironmental Systems Analysis	6*	A1N	2	E
TMES21 Ir	ndustrial Energy Systems	6	A1F	3	E
TMHL61 D	Damage Mechanics and Life Analysis	6	A1X	2	E
TMKT57 P	roduct Modelling	6	A1X	3	E
TMKT83 S	mall Scale Renewable Energy Conversion	6	A1X	4	Е
TMME11 R	load Vehicle Dynamics	6	A1X	1	Е
TMPS27 P	roduction Systems	6	A1X	3	E
TMQU04 S	ix Sigma Quality	6	A1X	2	Е
TPPE33 P	ortfolio Management	6	A1X	2	Е



Course code	Course name	Credits	Level	Timetable module	ECV
TPPE74	Design and Development of Manufacturing Operations	6	A1X	4	E
TSBB15	Computer Vision	12*	A1X	3	Е
TSBK02	Image and Audio Coding	6	A1X	4	Е
TSBK07	Computer Graphics	6*	A1X	1	Е
TSFS06	Diagnosis and Supervision	6	A1N	1	Е
TSKS14	Multiple Antenna Communications	6	A1X	2	Е
TSRT14	Sensor Fusion	6	A1X	2	E
TSTE06	Digital Filters	6	A1X	3	Е
	Specialisation: Master Profile A	utomatia (	Control	1	
Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSRT07	Industrial Control Systems	6	A1X	2	E
TSRT09	Control Theory	6	A1X	3	E
Period 2					
TSFS06	Diagnosis and Supervision	6	A1N	1	E
TSRT14	Sensor Fusion	6	A1X	2	Е
S	Specialisation: Master Profile Computer	Science a	nd Eng	ineering	
Course code	Course name	Credits	Level	Timetable module	ECV
Period 2					
TDDD05	Component Based Software	6	A1X	1	С
	Specialisation: Master Profile Econom	ic Informa	ition S	ystems	
Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDEI71	Digitisation, Business Ecologies and Business Models	6	A1N	4	E
Period 2					
TDEI21	Strategic Organisational Application of IT -	6	A1X	4	Е

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A1X

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TDEI35

Workflow and Knowledge Management

Strategy and Management Control

#### Specialisation: Master Profile Energy Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMES17	Building Energy Systems	6	A1N	3	Е
TMES43	Analysis and Modelling of Industrial Energy Systems	6	A1F	1	E
Period 2					
TMES21	Industrial Energy Systems	6	A1F	3	Е
TMKT83	Small Scale Renewable Energy Conversion	6	A1X	4	E

#### Specialisation: Master Profile Finance

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TPPE32	Financial Risk Management	6	A1X	2	С
Period 2					
TPPE33	Portfolio Management	6	A1X	2	E

#### Specialisation: Master Profile Industrial Marketing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIM09	International Business	6	A1X	2	C/E
Period 2					
TEIM07	Industrial Market Research	6	A1X	2	С

#### Specialisation: Master Profile Logistics Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TETS57	Logistics Analysis	6	A1X	2	C/E
Period 2					
TETS36	Sustainable Logistics Systems	6	A1X	4	E
TETS56	Logistics and Quality in Health Care	6	A1X	4	Е



#### Specialisation: Master Profile Manufacturing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMPS42	Production System Automation	6	A1X	1	Е
Period 2					
TMPS27	Production Systems	6	A1X	3	С

#### Specialisation: Master Profile Manufacturing Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TPPE78	Quantitative Models and Analysis in Operations Management	6	A1X	1	E
Period 2					
TPPE74	Design and Development of Manufacturing Operations	6	A1X	4	Е

#### Specialisation: Master Profile Product Development

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMKT48	Design Optimization	6	A1X	3	С
Period 2					_
TMKT57	Product Modelling	6	A1X	3	С

#### Specialisation: Master Profile Project, Innovation and Entrepreneurship

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIO13	Leadership and Organizational Change	6	A1X	4	E
Period 2					
TEIO06	Innovative Entrepreneurship	6	A1X	2	E
TEIO41	Corporate Social Responsibility	6	A1X	3	E



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIO13	Leadership and Organizational Change	6	A1X	4	E
TMQU31	Statistical Quality Control	6	A1X	2	E
Period 2					
TDEI35	Strategy and Management Control	6	A1X	2	E
TETS56	Logistics and Quality in Health Care	6	A1X	4	E
TMQU04	Six Sigma Quality	6	A1X	2	E
TPPE74	Design and Development of Manufacturing Operations	6	A1X	4	E

#### Specialisation: Master Profile Signal and Image Processing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TBMI26	Neural Networks and Learning Systems	6	A1X	2	E
TSBB15	Computer Vision	12*	A1X	1	E
TSBK07	Computer Graphics	6*	A1X	4	E
Period 2					
TSBB15	Computer Vision	12*	A1X	3	E
TSBK02	Image and Audio Coding	6	A1X	4	E
TSBK07	Computer Graphics	6*	A1X	1	E

#### Specialisation: Master Profile Strategic Management and Control

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIM09	International Business	6	A1X	2	E
TEIO13	Leadership and Organizational Change	6	A1X	4	E
Period 2					
TDEI21	Strategic Organisational Application of IT - Workflow and Knowledge Management	6	A1X	4	E
TEIM07	Industrial Market Research	6	A1X	2	E
TETS36	Sustainable Logistics Systems	6	A1X	4	E



#### Specialisation: Master Profile Telecommunication

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSBK08	Data Compression	6	A1X	2	E
TSKS13	Wireless Communications	6	A1F	4	E
Period 2					
TSBK02	Image and Audio Coding	6	A1X	4	E
TSKS14	Multiple Antenna Communications	6	A1X	2	E

#### Specialisation: Master Profile Wood Technology

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMKA04	Wood - Innovation	6	A1X	1	С
Period 2					
TMKT57	Product Modelling	6	A1X	3	Е
TMPS27	Production Systems	6	A1X	3	E

#### Specialisation: Specialization Biotechnical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
NBIC50	Ecotoxicology and Environmental Monitoring	6	G2X	1	E
TFYA45	Biotechnology Project	6*	A1X	-	E
TFYA85	Alternative Energy Sources and their Applications	6	G2X	4	E
TKMJ47	Environmental Systems Analysis	6*	A1N	2	E
Period 2					
TFYA45	Biotechnology Project	6*	A1X	-	Е
TKMJ47	Environmental Systems Analysis	6*	A1N	2	Е



#### Specialisation: Specialization Computer Science and Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDB68	Concurrent Programming and Operating Systems	6	G2X	3	E
TDDD17	Information Security, Second Course	6*	A1X	4	E
TDDD20	Design and Analysis of Algorithms	6	A1X	3	Е
TDDD38	Advanced Programming in C++	6*	A1X	2	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1X	3	E
TDDD75	Effect-Driven Development and Human- Centered Design of Interactive Systems	6	G2X	3	E
TDTS04	Computer Networks and Distributed Systems	8	G2X	2	E
Period 2					
TDDD05	Component Based Software	6	A1X	1	E
TDDD14	Formal Languages and Automata Theory	6	G2X	2	E
TDDD17	Information Security, Second Course	6*	A1X	4	E
TDDD27	Advanced Web Programming	6	A1X	3	E
TDDD38	Advanced Programming in C++	6*	A1X	-	E



#### Specialisation: Specialization Electrical Engineering

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Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TBMI26	Neural Networks and Learning Systems	6	A1X	2	Е
TSBB15	Computer Vision	12*	A1X	1	Е
TSBK07	Computer Graphics	6*	A1X	4	Е
TSBK08	Data Compression	6	A1X	2	Е
TSKS13	Wireless Communications	6	A1F	4	Е
TSRT07	Industrial Control Systems	6	A1X	2	Е
TSRT09	Control Theory	6	A1X	3	E
Period 2					
TSBB15	Computer Vision	12*	A1X	3	Е
TSBK02	Image and Audio Coding	6	A1X	4	E
TSBK07	Computer Graphics	6*	A1X	1	Е
TSFS06	Diagnosis and Supervision	6	A1N	1	E
TSKS14	Multiple Antenna Communications	6	A1X	2	E
TSRT14	Sensor Fusion	6	A1X	2	E
TSTE06	Digital Filters	6	A1X	3	Е

#### Specialisation: Specialization Energy Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TKMJ10	Industrial Ecology	6	A1X	1	E
TMES17	Building Energy Systems	6	A1N	3	E
TMES43	Analysis and Modelling of Industrial Energy Systems	6	A1F	1	E
Period 2					
TMES21	Industrial Energy Systems	6	A1F	3	E
TMKT83	Small Scale Renewable Energy Conversion	6	A1X	4	E



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMKA04	Wood - Innovation	6	A1X	1	E
TMKT48	Design Optimization	6	A1X	3	E
TMMS21	Mechatronics	6	G2X	1	Е
TMPS42	Production System Automation	6	A1X	1	E
Period 2					
TMHL61	Damage Mechanics and Life Analysis	6	A1X	2	Е
TMKT57	Product Modelling	6	A1X	3	Е
TMME11	Road Vehicle Dynamics	6	A1X	1	Е
TMPS27	Production Systems	6	A1X	3	E

## Semester 9 (Autumn 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TAMS39	Multivariate Statistical Methods	6	A1X	4	E
TAMS46	Probability Theory, Second Course	6	A1X	3	E
TATM38	Mathematical Models in Biology	6	A1X	3	E
TDDB84	Design Patterns	6	A1X	4	E
TDDC34	Technical, Economic and Societal Evaluation of IT-products	6	A1X	3	E
TDDD04	Software Testing	6	A1X	2	E
TDEI72	Strategy and Digitisation - Technology, Standards and Network Effects	6	A1X	4	E
TEAE12	Strategic Analysis and Methods for Strategic Change	12*	A1F	2	E
TEIM04	Industrial Market and Technology Strategies	12*	A1X	2	E
TEIO89	Innovation and Entrepreneurship - Project Course	12*	A1F	4	E
TETS38	Logistics Project	12*	A1X	4	E
TKMJ31	Biofuels for Transportation	6	A1N	1	E
TMME40	Vibration Analysis of Structures	6	A1X	3	E
TMMS11	Models of Mechanics	6*	A1X	3	E



Course code	Course name	Credits	Level	Timetable module	ECV
TMMV01	Aerodynamics	6	A1X	2	E
TMMV12	Gas Turbine Engines	6	A1X	4	E
TMPE01	Project Course Advanced - Energy Engineering	12*	A1X	-	E
ТМРМ05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	E
ТМРМ08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	E
TMQU13	Customer Focused Product and Service Development	6	A1X	4	E
TMQU27	Quality Management - Project Course	12*	A1X	2	Е
TPPE53	Financial Valuation Methodology	6	A1X	2	Е
TPPE66	Investment Valuation	6*	A1X	4	Е
TPPE73	Operations Management - Project Course	12*	A1X	4	E
TPPE99	Simulation in Production and Logistics	6	A1X	3	E
TSIN01	Information Networks	6	A1X	3	E
TSIT03	Cryptology	6	A1X	2	E
TSKS12	Modern Channel Coding, Inference and Learning	6	A1X	1	E
Period 2					
TAOP18	Supply Chain Optimization	6	A1X	1	E
TDDB44	Compiler Construction	6	A1X	1	E
TDDC90	Software Security	6	A1X	1	E
TDDD30	Advanced Software Engineering	6	A1X	4	Е
TDDD56	Multicore and GPU Programming	6	A1X	2	E
TDDD89	Scientific Method	6	A1X	3	E
TEAE12	Strategic Analysis and Methods for Strategic Change	12*	A1F	2	E
TEIM04	Industrial Market and Technology Strategies	12*	A1X	2	E
TEIM10	Industrial Service Development	6	A1X	2	E
TEIO89	Innovation and Entrepreneurship - Project Course	12*	A1F	4	E
TETS31	Logistics Strategies	6	A1X	4	Е
TETS38	Logistics Project	12*	A1X	2	Е



Course code	Course name	Credits	Level	Timetable module	ECV
TFBI17	Advanced Project Course in Ecosystem Service Valuation	6	A1X	-	E
TKMJ32	Integrated Product Service Engineering	6	A1N	3	E
TMES51	International Energy Markets	6	A1N	1	E
TMKA03	Industrial Design	6	G2X	1	E
TMMS11	Models of Mechanics	6*	A1X	4	E
TMMS20	Structural Optimization	6	A1X	1	E
TMPE01	Project Course Advanced - Energy Engineering	12*	A1X	-	E
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	E
TMPM08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	E
TMQU12	Lean Production	6	A1X	2	E
TMQU27	Quality Management - Project Course	12*	A1X	4	E
TPPE61	Financial Optimization	6	A1X	2	E
TPPE66	Investment Valuation	6*	A1X	4	E
TPPE73	Operations Management - Project Course	12*	A1X	4	E
TSRT08	Optimal Control	6	A1X	3	E

## $Specialisation: Master {\it Profile Automatic Control}$

Course code	Course name	Credits	Level	Timetable module	ECV
Period 2					
TSRT08	Optimal Control	6	A1X	3	E

## Specialisation: Master Profile Computer Science and Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDB84	Design Patterns	6	A1X	4	С
TDDD04	Software Testing	6	A1X	2	С
Period 2					
TDDD89	Scientific Method	6	A1X	3	С



#### Specialisation: Master Profile Economic Information Systems

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDC34	Technical, Economic and Societal Evaluation of IT-products	6	A1X	3	E

#### Specialisation: Master Profile Energy Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TKMJ31	Biofuels for Transportation	6	A1N	1	E
TMMV12	Gas Turbine Engines	6	A1X	4	Е
TMPE01	Project Course Advanced - Energy Engineering	12*	A1X	-	E
Period 2					
TMPE01	Project Course Advanced - Energy Engineering	12*	A1X	-	E

#### Specialisation: Master Profile Finance

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TPPE53	Financial Valuation Methodology	6	A1X	2	E
TPPE66	Investment Valuation	6*	A1X	4	E
Period 2					
TPPE61	Financial Optimization	6	A1X	2	E
TPPE66	Investment Valuation	6*	A1X	4	E

#### Specialisation: Master Profile Industrial Marketing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIM04	Industrial Market and Technology Strategies	12*	A1X	2	С
Period 2					
TEIM04	Industrial Market and Technology Strategies	12*	A1X	2	С



#### Specialisation: Master Profile Logistics Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TETS38	Logistics Project	12*	A1X	4	С
TPPE99	Simulation in Production and Logistics	6	A1X	3	E
Period 2					
TETS38	Logistics Project	12*	A1X	2	С
TETS31	Logistics Strategies	6	A1X	4	E

#### Specialisation: Master Profile Manufacturing

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMPM08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	С
Period 2					
TMPM08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	С

#### Specialisation: Master Profile Manufacturing Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TPPE73	Operations Management - Project Course	12*	A1X	4	С
TPPE99	Simulation in Production and Logistics	6	A1X	3	E
Period 2					
TPPE73	Operations Management - Project Course	12*	A1X	4	С

#### Specialisation: Master Profile Product Development

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	С
Period 2					
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	С



Specialisation: Master Profile Project, Innovation and Entrepreneurship

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIO89	Innovation and Entrepreneurship - Project Course	12*	A1F	4	С
Period 2					
TEIO89	Innovation and Entrepreneurship - Project Course	12*	A1F	4	С

Specialisation: Master Profile Quality Technology and Management

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMQU27	Quality Management - Project Course	12*	A1X	2	С
TMQU13	Customer Focused Product and Service Development	6	A1X	4	E
Period 2					
TMQU27	Quality Management - Project Course	12*	A1X	4	С

Specialisation: Master Profile Strategic Management and Control

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEAE12	Strategic Analysis and Methods for Strategic Change	12*	A1F	2	С
TDEI72	Strategy and Digitisation - Technology, Standards and Network Effects	6	A1X	4	E
Period 2					
TEAE12	Strategic Analysis and Methods for Strategic Change	12*	A1F	2	С
TEIM10	Industrial Service Development	6	A1X	2	E
TMQU12	Lean Production	6	A1X	2	E



#### Specialisation: Master Profile Telecommunication

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSIN01	Information Networks	6	A1X	3	E
TSIT03	Cryptology	6	A1X	2	E
TSKS12	Modern Channel Coding, Inference and Learning	6	A1X	1	E

#### Specialisation: Master Profile Wood Technology

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	С
Period 2					
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	С

#### Specialisation: Specialization Biotechnical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATM38	Mathematical Models in Biology	6	A1X	3	Е
Period 2					
TFBI17	Advanced Project Course in Ecosystem Service Valuation	6	A1X	-	E

#### Specialisation: Specialization Computer Science and Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDB84	Design Patterns	6	A1X	4	E
TDDD04	Software Testing	6	A1X	2	E
TSIT03	Cryptology	6	A1X	2	E



#### Specialisation: Specialization Electrical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSIN01	Information Networks	6	A1X	3	E
TSIT03	Cryptology	6	A1X	2	E
TSKS12	Modern Channel Coding, Inference and Learning	6	A1X	1	E
Period 2					
TSRT08	Optimal Control	6	A1X	3	E

## Specialisation: Specialization Energy Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TKMJ31	Biofuels for Transportation	6	A1N	1	E
TMMV12	Gas Turbine Engines	6	A1X	4	E
TMPE01	Project Course Advanced - Energy Engineering	12*	A1X	-	E
Period 2					
TKMJ32	Integrated Product Service Engineering	6	A1N	3	E
TMES51	International Energy Markets	6	A1N	1	E
TMPE01	Project Course Advanced - Energy Engineering	12*	A1X	-	E



Specialisation: Specialization Mechanical Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TMME40	Vibration Analysis of Structures	6	A1X	3	Е
TMMS11	Models of Mechanics	6*	A1X	3	E
TMMV01	Aerodynamics	6	A1X	2	E
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	E
TMPM08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	E
Period 2					
TKMJ32	Integrated Product Service Engineering	6	A1N	3	E
TMKA03	Industrial Design	6	G2X	1	E
TMMS11	Models of Mechanics	6*	A1X	4	Е
TMMS20	Structural Optimization	6	A1X	1	E
TMPM05	Project Course Advanced - Design Engineering and Product Development	12*	A1X	-	E
TMPM08	Project Course Advanced - Manufacturing Engineering	12*	A1X	-	E

## Semester 10 (Spring 2019)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TQXX33	Degree project - Master's Thesis	30*	A1X	-	С
Period 2					
TQXX33	Degree project - Master's Thesis	30*	A1X	-	С

ECV = Elective / Compulsory /Voluntary

\*The course is divided into several semesters and/or periods

