

Computer Science and Software Engineering, M Sc in Engineering

300 credits

Civilingenjör i mjukvaruteknik

6CMJU

Valid from: 2016 Spring semester

Determined by

Board of Studies for Computer Science and Media Technology

Date determined 2016-01-19

Entry requirements

Degree in Swedish

Civilingenjör 300 hp och Teknologie master 120 hp



Curriculum

Semester 2 (Spring 2017)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD78	Object Oriented Programming and Java	6*	G1F	1	С
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD80	Project: Mobile and Social Applications	11*	G1F	3/4	С
TSEA28	Computer Hardware and Architecture Y	6*	G1X	2	С
Period 2					
TDDD78	Object Oriented Programming and Java	6*	G1F	1	С
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD80	Project: Mobile and Social Applications	11*	G1F	4	С
TDDD85	Formal Languages and Automata Theory	6	G1F	2	С
TSEA28	Computer Hardware and Architecture Y	6*	G1X	3	С

Semester 3 (Autumn 2017)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA24	Linear Algebra	8*	G1N	4	С
TDDC93	Software Engineering Theory	4	G2F	1	С
TDDD84	Professionalism for Engineers, part 3	1*	G1F	-	С
TDDD86	Data Structures, Algorithms and Programming Paradigms	11*	G1F	2	С
TATA40	Perspectives on Mathematics	1*	G1N	-	V
Period 2					
TATA24	Linear Algebra	8*	G1N	4	С
TATA79	Introductory Course in Calculus	6	G1X	2	С
TDDD84	Professionalism for Engineers, part 3	1*	G1F	-	С
TDDD86	Data Structures, Algorithms and Programming Paradigms	11*	G1F	3	С
TATA40	Perspectives on Mathematics	1*	G1N	-	V



Semester 4 (Spring 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA41	Calculus in One Variable 1	6	G1F	4	С
TDDB68	Concurrent Programming and Operating Systems	6	G2X	3	С
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD94	Professionalism for Engineers, part 4	1*	G1F	-	С
TDDD98	Professionalism for Engineers, part 6	1*	G1F	-	С
TDDE35	Large-Scale Distributed Systems and Networks	11*	G1F	2	С
THEN18	English	6*	G1N	1	E
TATA40	Perspectives on Mathematics	1*	G1N	-	V
TGTU63	Visits to Industry	1*	G1X	-	V
Period 2					
TATA91	Calculus in One and Several Variables	6	G1F	4	С
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD94	Professionalism for Engineers, part 4	1*	G1F	-	С
TDDD98	Professionalism for Engineers, part 6	1*	G1F	-	С
TDDE35	Large-Scale Distributed Systems and Networks	11*	G1F	2	С
THEN18	English	6*	G1N	3	E
TPTE06	Industrial Placement	6	G1X	-	Е
TATA40	Perspectives on Mathematics	1*	G1N	-	V
TGTU63	Visits to Industry	1*	G1X	-	V



Semester 5 (Autumn 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDAB01	Probability and Statistics	6	G2F	1	С
TDDC17	Artificial Intelligence	6	G2F	3	С
TDDD91	Professionalism for Engineers, part 5	1*	G1F	-	С
TDDD92	Artificial Intelligence - Project	5*	G2F	4	С
TGTU63	Visits to Industry	1*	G1X	-	V
Period 2					
TDDD37	Database Technology	6	G2F	1	С
TDDD91	Professionalism for Engineers, part 5	1*	G1F	-	С
TDDD92	Artificial Intelligence - Project	5*	G2F	4	С
TGTU63	Visits to Industry	1*	G1X	-	V

Semester 6 (Spring 2019)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD94	Professionalism for Engineers, part 4	1*	G1F	-	С
TDDD96	Software Engineering - Bachelor Project	15*	G2E	2/3	С
TDDD98	Professionalism for Engineers, part 6	1*	G1F	-	С
TSKS21	Signals, Information and Images	8	G2X	1	С
TSRT04	Introduction in Matlab	2	G1X	2	Е
Period 2					
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD94	Professionalism for Engineers, part 4	1*	G1F	-	С
TDDD96	Software Engineering - Bachelor Project	15*	G2E	2/4	С
TDDD98	Professionalism for Engineers, part 6	1*	G1F	-	С
TSRT19	Automatic Control	6	G2X	1	С

Semester 7 (Autumn 2019)



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TAOP33	Combinatorial Optimization, Introductory Course	4	G2F	2	C/E
TANA21	Scientific Computing	6	G1F	3	E
TATA55	Abstract Algebra	6*	G2F	3	E
TBME04	Anatomy and Physiology	6	G2F	3	E
TBMI19	Medical Information Systems	6*	A1N	2	E
TDDC34	Technical, Economic and Societal Evaluation of IT-products	6	A1X	3	E
TDDD04	Software Testing	6	A1N	2	E
TDDD08	Logic Programming	6	A1N	4	E
TDDD23	Design and Programming of Computer Games	6	A1N	2	E
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDDD43	Advanced Data Models and Databases	6*	A1N	2	E
TDDD53	Advanced Interaction Design	6	A1N	1	E
TDDE45	Software Design and Construction	6	A1N	4	E
TEIO32	Project Management and Organization	6*	G2X	3	E
TGTU91	Oral and Written Communication	6	G1F	2	Е
TSBB06	Multidimensional Signal Analysis	6*	A1X	2	E
TSBB08	Digital Image Processing	6	A1X	4	E
TSDT14	Signal Theory	6	A1X	1	E
TSIT03	Cryptology	6	A1X	2	E
TSRT62	Modelling and Simulation	6	A1X	3	E
Period 2					
TAMS22	Probability Theory and Bayesian Networks	6	A1X	1	E
TANA09	Numerical Algorithms in Computer Science	4	G2F	1	E
TATA55	Abstract Algebra	6*	G2F	3	E
TBMI19	Medical Information Systems	6*	A1N	3	E
TDDC73	Interaction Programming	6	G2F	1	E
TDDD07	Real Time Systems	6	A1N	4	Е
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TDDD43	Advanced Data Models and Databases	6*	A1N	2	E
TDDD49	Programming in C# and .NET Framework	4	G2F	3	Е



Course code	Course name	Credits	Level	Timetable module	ECV
TDDE01	Machine Learning	6	A1N	1	E
TDDE02	Software Entrepreneurship	6	A1N	2	E
TEAE01	Industrial Economics, Basic Course	6	G1X	2	E
TEIM03	Intercultural Communication	4	G1X	4	E
TEIO32	Project Management and Organization	6*	G2X	1	E
TGTU04	Leadership	6	G2X	2	E
TGTU49	History of Technology	6	G1F	3	E
TKMJ24	Environmental Engineering	6	G1N	3	E
TSBB06	Multidimensional Signal Analysis	6*	A1X	3	E
TSIT02	Computer Security	6	G2F	2	E
TSKS11	Networks: Models, Algorithms and Applications	6	G2X	3	E
TSRT78	Digital Signal Processing	6	A1X	2	E

Specialisation: AI and Machine Learning

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDC17	Artificial Intelligence	6	G2F	3	С
TBMI19	Medical Information Systems	6*	A1N	2	Е
TDDD08	Logic Programming	6	A1N	4	Е
TSBB06	Multidimensional Signal Analysis	6*	A1X	2	Е
TSBB08	Digital Image Processing	6	A1X	4	Е
Period 2					_
TDDE01	Machine Learning	6	A1N	1	С
TBMI19	Medical Information Systems	6*	A1N	3	Е
TSBB06	Multidimensional Signal Analysis	6*	A1X	3	Е
TSRT78	Digital Signal Processing	6	A1X	2	E



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD23	Design and Programming of Computer Games	6	A1N	2	С
TDDC17	Artificial Intelligence	6	G2F	3	E
TDDD53	Advanced Interaction Design	6	A1N	1	E
Period 2					
TDDC73	Interaction Programming	6	G2F	1	С
TDDE02	Software Entrepreneurship	6	A1N	2	E

$Specialisation: Industrial\ Economics$

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEAE01	Industrial Economics, Basic Course	6	G1X	2	С
TEIO32	Project Management and Organization	6*	G2X	3	С
Period 2					
TDDE02	Software Entrepreneurship	6	A1N	2	С
TEIO32	Project Management and Organization	6*	G2X	1	С

Specialisation: International Software Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD04	Software Testing	6	A1N	2	E
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDDE45	Software Design and Construction	6	A1N	4	E
Period 2					
TEAE01	Industrial Economics, Basic Course	6	G1X	2	С
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TDDE02	Software Entrepreneurship	6	A1N	2	E
TDEI19	Management Control	6	A1X	2	E
TEIM03	Intercultural Communication	4	G1X	4	E
TSIT02	Computer Security	6	G2F	2	E
·	· · · · · · · · · · · · · · · · · · ·				



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDC34	Technical, Economic and Societal Evaluation of IT-products	6	A1X	3	E
TDDD04	Software Testing	6	A1N	2	Е
TDDE45	Software Design and Construction	6	A1N	4	E
Period 2					
TDDD37	Database Technology	6	G2F	1	E
TDDE02	Software Entrepreneurship	6	A1N	2	E

Specialisation: Programming and Algorithms Specialization

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDC17	Artificial Intelligence	6	G2F	3	E
TDDD04	Software Testing	6	A1N	2	E
TDDD08	Logic Programming	6	A1N	4	E
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDDE45	Software Design and Construction	6	A1N	4	E
Period 2					
TDDC90	Software Security	6	A1N	1	E
TDDD37	Database Technology	6	G2F	1	E
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TSIT02	Computer Security	6	G2F	2	E
TSKS11	Networks: Models, Algorithms and Applications	6	G2X	3	E



Specialisation: Secure Systems

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDE45	Software Design and Construction	6	A1N	4	С
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDTS06	Computer Networks	6	G2F	1	E
TSIT03	Cryptology	6	A1X	2	E
Period 2					
TDDC90	Software Security	6	A1N	1	С
TSIT02	Computer Security	6	G2F	2	С
TDDD37	Database Technology	6	G2F	1	E
TDDD38	Advanced Programming in C++	6*	A1N	-	E

Semester 8 (Spring 2020)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TAOP07	Introduction to Optimization	6	G1F	3	C/E
TANA15	Numerical Linear Algebra	6	A1N	1	Е
TATA53	Linear Algebra, Honours Course	6*	G2F	-	E
TATA54	Number Theory	6*	G2F	3	E
TATA64	Graph Theory	6*	A1N	2	E
TBMI26	Neural Networks and Learning Systems	6	A1N	2	E
TDDA69	Data and Program Structures	6*	G2X	3	E
TDDD17	Information Security, Second Course	6*	A1X	4	E
TDDD20	Design and Analysis of Algorithms	6	A1N	3	E
TDDD25	Distributed Systems	6	A1N	2	E
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1N	3	E
TDDD57	Physical Interaction and Game Programming	6	A1N	1	E
TDDD75	Effect-Driven Development and Human- Centered Design of Interactive Systems	6	G2X	3	E
TDDD95	Algorithmic Problem Solving	6*	A1F	1	E



Course code	Course name	Credits	Level	Timetable module	ECV
TDDD97	Web Programming	6	G2F	3	E
TDDE05	Al Robotics	6*	A1N	4	E
TDDE06	Large-Scale Software Development - Structures and Processes	6*	A1X	4	Е
TDDE09	Natural Language Processing	6	A1F	2	E
TDDE46	Software Quality	6*	A1N	2	E
TDTS07	System Design and Methodology	6	A1N	1	E
TDTS21	Advanced Networking	6*	A1N	1	Е
TEIE88	Computer Law	4	G1X	1	Е
TEIO13	Leadership and Organizational Change	6	A1X	4	E
TEIO94	Entrepreneurship and Idea Development	6*	G2X	4	E
TGTU94	Technology and Ethics	6	G1F	1	E
TKMJ15	Environmental Management Strategies	6	G1F	3	E
TNM048	Information Visualisation	6	A1X	3	E
TSBK07	Computer Graphics	6*	A1X	4	E
TSBK08	Data Compression	6	A1N	2	E
TSRT07	Industrial Control Systems	6	A1N	2	E
Period 2					
TATA53	Linear Algebra, Honours Course	6*	G2F	-	Е
TATA54	Number Theory	6*	G2F	1	E
TATA64	Graph Theory	6*	A1N	2	E
TDDA69	Data and Program Structures	6*	G2X	1	E
TDDC78	Programming of Parallel Computers - Methods and Tools	6	A1X	3	E
TDDD17	Information Security, Second Course	6*	A1X	4	E
TDDD27	Advanced Web Programming	6	A1N	3	E
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TDDD48	Automated Planning	6	A1N	1	Е
TDDD95	Algorithmic Problem Solving	6*	A1F	4	E
TDDE05	Al Robotics	6*	A1N	4	E
TDDE06	Large-Scale Software Development - Structures and Processes	6*	A1X	4	E
TDDE07	Bayesian Learning	6	A1F	2	Е
-					



Course code	Course name	Credits	Level	Timetable module	ECV
TDDE31	Big Data Analytics	6	A1F	3	E
TDDE34	Software Verification	6	A1N	1	E
TDDE41	Software Architectures	6	A1N	1	E
TDDE46	Software Quality	6*	A1N	2	E
TDTS21	Advanced Networking	6*	A1N	1	E
TEAE13	Civil and Commercial Law	6	G1X	2	E
TEIE44	Intellectual Property Rights	4	G1X	1	E
TEIO06	Innovative Entrepreneurship	6	A1X	2	E
TEIO94	Entrepreneurship and Idea Development	6*	G2X	4	E
TGTU95	Philosophy of Science and Technology	6	G1F	4	E
TNM079	Modelling and Animation	6	A1X	2	E
TSBK07	Computer Graphics	6*	A1X	1	E
TSFS06	Diagnosis and Supervision	6	A1N	1	E
TSRT14	Sensor Fusion	6	A1N	2	E

Specialisation: AI and Machine Learning



Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TBMI26	Neural Networks and Learning Systems	6	A1N	2	Е
TDDD20	Design and Analysis of Algorithms	6	A1N	3	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1N	3	E
TDDD95	Algorithmic Problem Solving	6*	A1F	1	E
TDDE05	Al Robotics	6*	A1N	4	E
TDDE09	Natural Language Processing	6	A1F	2	E
TSRT07	Industrial Control Systems	6	A1N	2	E
Period 2					
TDDD48	Automated Planning	6	A1N	1	E
TDDD95	Algorithmic Problem Solving	6*	A1F	4	E
TDDE05	Al Robotics	6*	A1N	4	E
TDDE07	Bayesian Learning	6	A1F	2	E
TDDE31	Big Data Analytics	6	A1F	3	E
TSFS06	Diagnosis and Supervision	6	A1N	1	E
TSRT14	Sensor Fusion	6	A1N	2	E

Specialisation: Computer Games Programming

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD57	Physical Interaction and Game Programming	6	A1N	1	С
TSBK07	Computer Graphics	6*	A1X	4	С
TBMI26	Neural Networks and Learning Systems	6	A1N	2	E
Period 2					
TSBK07	Computer Graphics	6*	A1X	1	С
TNM079	Modelling and Animation	6	A1X	2	E



Specialisation: Industrial Economics

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIO13	Leadership and Organizational Change	6	A1X	4	С
Period 2					
TEIO06	Innovative Entrepreneurship	6	A1X	2	С

Specialisation: Large Scale Software Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDE06	Large-Scale Software Development - Structures and Processes	6*	A1X	4	E
TDDE46	Software Quality	6*	A1N	2	E
Period 2					
TDDE06	Large-Scale Software Development - Structures and Processes	6*	A1X	4	E
TDDE34	Software Verification	6	A1N	1	E
TDDE41	Software Architectures	6	A1N	1	E
TDDE46	Software Quality	6*	A1N	2	E



Specialisation: Programming and Algorithms Specialization

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDA69	Data and Program Structures	6*	G2X	3	Е
TDDD20	Design and Analysis of Algorithms	6	A1N	3	E
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1N	3	E
TDDD95	Algorithmic Problem Solving	6*	A1F	1	E
TDDE09	Natural Language Processing	6	A1F	2	E
Period 2					
TDDA69	Data and Program Structures	6*	G2X	1	E
TDDC78	Programming of Parallel Computers - Methods and Tools	6	A1X	3	E
TDDD14	Formal Languages and Automata Theory	6	G2F	2	Е
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TDDD95	Algorithmic Problem Solving	6*	A1F	4	E
TDDE34	Software Verification	6	A1N	1	E
TDDE41	Software Architectures	6	A1N	1	E

Specialisation: Secure Systems

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD17	Information Security, Second Course	6*	A1X	4	С
TDDD38	Advanced Programming in C++	6*	A1N	2	Е
TDDD97	Web Programming	6	G2F	3	E
TDDE46	Software Quality	6*	A1N	2	E
TDTS21	Advanced Networking	6*	A1N	1	E
Period 2					
TDDD17	Information Security, Second Course	6*	A1X	4	С
TDDD27	Advanced Web Programming	6	A1N	3	E
TDDD38	Advanced Programming in C++	6*	A1N	-	Е
TDDE46	Software Quality	6*	A1N	2	E
TDTS21	Advanced Networking	6*	A1N	1	E



Semester 9 (Autumn 2020)

Period 1 TDDD53 Advanced Interaction Design 6 A1N 1 E TDDE14 Large-Scale Software Development: Contributions and Evolution 6* A1X 4 E TDDE15 Advanced Machine Learning 6 A1F 1 E TDDE19 Advanced Project Course - Al and Machine Learning 6* A1F 4 E TDDE20 Advanced Project Course - Game, App and Web Development 6* A1F 4 E TDDE21 Advanced Project Course: Secure Distributed and Embedded Systems 6* A1F 4 E TDDE113 Enterprise Resource Planning Systems: Process and Implementation Fundamentation Fund	Course code	Course name	Credits	Level	Timetable module	ECV
TDDE14 Large-Scale Software Development: Contributions and Evolution TDDE15 Advanced Machine Learning 6 A1F 1 E TDDE19 Advanced Project Course - Al and Machine Learning Advanced Project Course - Game, App and Web Development TDDE20 Advanced Project Course - Game, App and Web Development TDDE21 Advanced Project Course: Secure Distributed and Embedded Systems TDE113 Enterprise Resource Planning Systems: Process and Implementation TDE172 Strategy and Digitisation - Technology, Standards and Network Effects TEIM11 Industrial Marketing 6 G2X 3 E TEIO90 Innovation Management 6 A1X 2 E TNCG15 Advanced Global Illumination and Rendering TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSB817 Visual Object Recognition and Detection 6 A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems TSIN01 Information Networks 6 A1X 3 E TSRS12 Modern Channel Coding, Inference and Learning Systems 6 A1X 3 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1N 3 E TBM102 Medical Image Analysis 6 A1N 1 E	Period 1					
TDDE15 Advanced Machine Learning 6 A1F 1 E TDDE19 Advanced Project Course - Al and Machine Learning 6* A1F 4 E TDDE20 Advanced Project Course - Game, App and Web Development 6* A1F 4 E TDDE21 Advanced Project Course - Game, App and Web Development 6* A1F 4 E TDDE21 Advanced Project Course: Secure Distributed 6* A1F 4 E TDDE21 Advanced Project Course: Secure Distributed 6* A1F 4 E TDDE13 Enterprise Resource Planning Systems: Process and Implementation 6* A1X 2 E TDEI72 Strategy and Digitisation - Technology, Standards and Network Effects 6 A1X 4 E TEIM11 Industrial Marketing 6 G2X 3 E TEIO90 Innovation Management 6 A1X 2 E TNCG15 Advanced Global Illumination and Rendering 6 A1X 4 E TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 1 E TSINO1 Information Networks 6 A1X 1 E TSKS12 Modern Channel Coding, Inference and Learning Systems 6 A1X 3 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1N 1 E TBM102 Medical Image Analysis 6 A1N 1 E	TDDD53	Advanced Interaction Design	6	A1N	1	E
TDDE19 Advanced Project Course - Al and Machine Learning 6* A1F 4 E TDDE20 Advanced Project Course - Game, App and Web Development 6* A1F 4 E TDDE21 Advanced Project Course: Secure Distributed and Embedded Systems 6* A1F 4 E TDEI13 Enterprise Resource Planning Systems: Process and Implementation 6* A1X 2 E TDEI13 Strategy and Digitisation - Technology, Standards and Network Effects 6* A1X 4 E TEIM11 Industrial Marketing 6* G2X 3 E TEIO90 Innovation Management 6* A1X 2 E TNCG15 Advanced Global Illumination and Rendering 6* A1X 4 E TNM067 Scientific Visualization 6* A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6* A1X 2 E TSBB17 Visual Object Recognition and Detection 6* A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems TSIN01 Information Networks 6* A1X 1 E TSKS12 Modern Channel Coding, Inference and Learning Media 6* A1X 3 E TSRT92 Modelling and Learning for Dynamical Systems 6* A1X 3 E TDDD89 Scientific Method 6* A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6* A1N 1 E TBMI02 Medical Image Analysis 6* A1N 1 E	TDDE14		6*	A1X	4	E
TDDE20 Advanced Project Course - Game, App and Web Development 6* A1F 4 E TDDE21 Advanced Project Course - Game, App and Web Development 6* A1F 4 E TDDE21 Advanced Project Course - Secure Distributed and Embedded Systems 6* A1F 4 E TDEI13 Enterprise Resource Planning Systems: Process and Implementation 6* A1X 2 E TDEI72 Strategy and Digitisation - Technology, Standards and Network Effects 6* A1X 4 E TEIM11 Industrial Marketing 6* G2X 3 E TEIO90 Innovation Management 6* A1X 2 E TNCG15 Advanced Global Illumination and Rendering 6* A1X 4 E TNM067 Scientific Visualization 6* A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6* A1X 2 E TSBB17 Visual Object Recognition and Detection 6* A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems TSIN01 Information Networks 6* A1X 3 E TSK512 Modern Channel Coding, Inference and Learning Modern Channel Coding, Inference A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 1 E	TDDE15	Advanced Machine Learning	6	A1F	1	E
TDDE21 Advanced Project Course: Secure Distributed and Embedded Systems TDE113 Enterprise Resource Planning Systems: Process and Implementation TDE172 Strategy and Digitisation - Technology, Standards and Network Effects TEIM11 Industrial Marketing 6 G2X 3 E TEIO90 Innovation Management 6 A1X 2 E TNCG15 Advanced Global Illumination and Rendering TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSF512 Autonomous Vehicles - Planning, Control, and Learning Systems TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 1 E TBMI02 Medical Image Analysis 6 A1N 1 E	TDDE19		6*	A1F	4	E
and Embedded Systems Enterprise Resource Planning Systems: Process and Implementation Enterprise Resource Planning Systems Enterprise Resource Planning For Dynamical Systems Enterprise Res	TDDE20		6*	A1F	4	E
and Implementation TDEI72 Strategy and Digitisation - Technology, Standards and Network Effects TEIM11 Industrial Marketing 6 G2X 3 E TEIO90 Innovation Management 6 A1X 2 E TNCG15 Advanced Global Illumination and Rendering 6 A1X 4 E TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 1 E	TDDE21		6*	A1F	4	E
TEIM11 Industrial Marketing 6 G2X 3 E TEIO90 Innovation Management 6 A1X 2 E TNCG15 Advanced Global Illumination and Rendering 6 A1X 4 E TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning Modern Channel Coding, Inference and Learning Systems 6 A1X 3 E TSKT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TDEI13		6	A1X	2	E
TEIO90 Innovation Management 6 A1X 2 E TNCG15 Advanced Global Illumination and Rendering 6 A1X 4 E TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 3 E TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TDEI72		6	A1X	4	E
TNCG15 Advanced Global Illumination and Rendering 6 A1X 4 E TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 3 E TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TEIM11	Industrial Marketing	6	G2X	3	E
TNM067 Scientific Visualization 6 A1X 3 E TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 1 E TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning Modern Channel Coding, Inference and Learning 6 A1X 3 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TEIO90	Innovation Management	6	A1X	2	E
TNM095 Artificial Intelligence for Interactive Media 6 A1X 2 E TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 1 E TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TNCG15	Advanced Global Illumination and Rendering	6	A1X	4	E
TSBB17 Visual Object Recognition and Detection 6 A1X 2 E TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 1 E TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TNM067	Scientific Visualization	6	A1X	3	E
TSBK03 Advanced Game Programming 6* A1X 1 E TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems 6 A1X 1 E TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TNM095	Artificial Intelligence for Interactive Media	6	A1X	2	E
TSFS12 Autonomous Vehicles - Planning, Control, and Learning Systems TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TSBB17	Visual Object Recognition and Detection	6	A1X	2	E
TSIN01 Information Networks 6 A1X 3 E TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TSBK03	Advanced Game Programming	6*	A1X	1	E
TSKS12 Modern Channel Coding, Inference and Learning 6 A1N 1 E TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TSFS12		6	A1X	1	E
TSRT92 Modelling and Learning for Dynamical Systems 6 A1X 3 E Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TSIN01	Information Networks	6	A1X	3	E
Period 2 TDDD89 Scientific Method 6 A1F 3 C TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	TSKS12		6	A1N	1	E
TDDD89Scientific Method6A1F3CTAOP61Optimization of Realistic Complex Systems6A1N3ETBMI02Medical Image Analysis6A1N1E	TSRT92	Modelling and Learning for Dynamical Systems	6	A1X	3	E
TAOP61 Optimization of Realistic Complex Systems 6 A1N 3 E TBMI02 Medical Image Analysis 6 A1N 1 E	Period 2					
TBMI02 Medical Image Analysis 6 A1N 1 E	TDDD89	Scientific Method	6	A1F	3	С
	TAOP61	Optimization of Realistic Complex Systems	6	A1N	3	E
TDDB44 Compiler Construction 6 A1X 1 E	TBMI02	Medical Image Analysis	6	A1N	1	E
	TDDB44	Compiler Construction	6	A1X	1	E



Course code	Course name	Credits	Level	Timetable module	ECV
TDDC90	Software Security	6	A1N	1	E
TDDD56	Multicore and GPU Programming	6	A1N	2	Е
TDDE13	Multi Agent Systems	6	A1N	1	E
TDDE14	Large-Scale Software Development: Contributions and Evolution	6*	A1X	4	E
TDDE16	Text Mining	6	A1F	2	E
TDDE19	Advanced Project Course - Al and Machine Learning	6*	A1F	4	E
TDDE20	Advanced Project Course - Game, App and Web Development	6*	A1F	4	E
TDDE21	Advanced Project Course: Secure Distributed and Embedded Systems	6*	A1F	4	E
TNM086	Virtual Reality Techniques	6	A1X	2	E
TSBK03	Advanced Game Programming	6*	A1X	-	E
TSIN02	Internetworking	6	A1N	1	E

Specialisation: AI and Machine Learning

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDE19	Advanced Project Course - Al and Machine Learning	6*	A1F	4	С
TDDE15	Advanced Machine Learning	6	A1F	1	E
TSBB17	Visual Object Recognition and Detection	6	A1X	2	E
TSFS12	Autonomous Vehicles - Planning, Control, and Learning Systems	6	A1X	1	E
TSRT92	Modelling and Learning for Dynamical Systems	6	A1X	3	E
Period 2					
TDDE19	Advanced Project Course - Al and Machine Learning	6*	A1F	4	С
TDDE13	Multi Agent Systems	6	A1N	1	E
TDDE16	Text Mining	6	A1F	2	E



Specialisation: Computer Games Programming

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSBK03	Advanced Game Programming	6*	A1X	1	С
TDDE20	Advanced Project Course - Game, App and Web Development	6*	A1F	4	E
TNCG15	Advanced Global Illumination and Rendering	6	A1X	4	E
TSBB11	Images and Graphics, Project Course CDIO	12*	A1X	4	E
Period 2					
TSBK03	Advanced Game Programming	6*	A1X	-	С
TDDE20	Advanced Project Course - Game, App and Web Development	6*	A1F	4	E
TSBB11	Images and Graphics, Project Course CDIO	12*	A1X	4	E
TSIN02	Internetworking	6	A1N	1	E

Specialisation: Industrial Economics

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TEIM11	Industrial Marketing	6	G2X	3	С
TEIO90	Innovation Management	6	A1X	2	С
TDEI72	Strategy and Digitisation - Technology, Standards and Network Effects	6	A1X	4	E



Specialisation: International Software Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDC34	Technical, Economic and Societal Evaluation of IT-products	6	A1X	3	С
TDDD69	Software Engineering - Company Project	6*	A1N	1	С
TDDD04	Software Testing	6	A1N	2	E
TDDD38	Advanced Programming in C++	6*	A1N	2	Е
TDDD43	Advanced Data Models and Databases	6*	A1N	2	E
TDDE45	Software Design and Construction	6	A1N	4	Е
TDEI13	Enterprise Resource Planning Systems: Process and Implementation	6	A1X	2	E
Period 2					
TDDD69	Software Engineering - Company Project	6*	A1N	1	С
TDDC90	Software Security	6	A1N	1	E
TDDD07	Real Time Systems	6	A1N	4	E
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TDDD43	Advanced Data Models and Databases	6*	A1N	2	E
TDEI19	Management Control	6	A1X	2	E
TEIM03	Intercultural Communication	4	G1X	4	E

Specialisation: Large Scale Software Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDE14	Large-Scale Software Development: Contributions and Evolution	6*	A1X	4	E
Period 2					
TDDE14	Large-Scale Software Development: Contributions and Evolution	6*	A1X	4	E



Specialisation: Programming and Algorithms Specialization

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD08	Logic Programming	6	A1N	4	E
TDDE45	Software Design and Construction	6	A1N	4	E
TSIT03	Cryptology	6	A1X	2	E
Period 2					
TDDB44	Compiler Construction	6	A1X	1	E
TDDD56	Multicore and GPU Programming	6	A1N	2	E

Specialisation: Secure Systems

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD04	Software Testing	6	A1N	2	С
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDDE21	Advanced Project Course: Secure Distributed and Embedded Systems	6*	A1F	4	E
TDTS06	Computer Networks	6	G2F	1	E
TSIT03	Cryptology	6	A1X	2	E
Period 2					
TDDC90	Software Security	6	A1N	1	С
TDDD37	Database Technology	6	G2F	1	E
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TDDE21	Advanced Project Course: Secure Distributed and Embedded Systems	6*	A1F	4	E

Semester 10 (Spring 2021)

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



LINKÖPING UNIVERSITYFACULTY OF SCIENCE AND ENGINEERING

COMPUTER SCIENCE AND SOFTWARE ENGINEERING, M SC IN ENGINEERING APPROVED

21 (21)

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

