

Computer Science and Software Engineering, M Sc in Engineering

300 credits

Civilingenjör i mjukvaruteknik

6CMJU

Valid from: 2014 Spring semester

Determined by Board of Studies for Computer Science and Media Technology

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					
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD96	Software Engineering - Bachelor Project	15*	G2X	2/3	С
TSKS21	Signals, Information and Images	8	G2X	1	С
TSRT04	Introduction in Matlab	2	G1X	2	E
Period 2					
TDDD79	Professionalism for Engineers, part 2	1*	G1F	-	С
TDDD96	Software Engineering - Bachelor Project	15*	G2X	2/4	С
TSRT19	Automatic Control	6	G2X	1	С

Semester 7 (Autumn 2017)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TAOP33	Combinatorial Optimization, Introductory Course	4	G2X	2	C/E
TANA21	Scientific Computing	6	G1X	3	E
TATA55	Abstract Algebra	6*	G2X	3	E
TBME04	Anatomy and Physiology	6	G2X	3	E
TBMI19	Medical Information Systems	6*	A1X	2	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
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	A1X	1	E



Course code	Course name	Credits	Level	Timetable module	ECV
TGTU91	Oral and Written Communication	6	G1X	2	E
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					
TANA09	Numerical Algorithms in Computer Science	4	G2X	1	E
TATA55	Abstract Algebra	6*	G2X	3	E
TBMI19	Medical Information Systems	6*	A1X	3	E
TDDC73	Interaction Programming	6	G2F	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
TDDD49	Programming in C# and .NET Framework	4	G2F	3	E
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
TGTU04	Leadership	6	G2X	2	E
TGTU49	History of Technology	6	G1F	3	E
TKMJ24	Environmental Engineering	6	G1X	3	E
TSBB06	Multidimensional Signal Analysis	6*	A1X	3	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*	A1X	2	E
TDDD08	Logic Programming	6	A1N	4	E
TSBB06	Multidimensional Signal Analysis	6*	A1X	2	E
TSBB08	Digital Image Processing	6	A1X	4	E
Period 2					
TDDE01	Machine Learning	6	A1N	1	С
TBMI19	Medical Information Systems	6*	A1X	3	E
TSBB06	Multidimensional Signal Analysis	6*	A1X	3	E
TSRT78	Digital Signal Processing	6	A1X	2	E

Specialisation: Computer Games Programming

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	A1X	1	Е
Period 2					
TDDC73	Interaction Programming	6	G2F	1	С
TDDE02	Software Entrepreneurship	6	A1N	2	E

Specialisation: International Software Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD62	Internship	18*	A1X	-	С
TEAE01	Industrial Economics, Basic Course	6	G1X	2	С
Period 2					
TDDD62	Internship	18*	A1X	-	С
TDEI19	Management Control	6	A1X	2	E
TSIT02	Computer Security	6	G2F	2	E



Specialisation: Large Scale Software Engineering

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
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
Period 2					
TDDD37	Database Technology	6	G2X	1	E
TDDE02	Software Entrepreneurship	6	A1N	2	Е

Specialisation: Programming and Algorithms Specialization

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDB84	Design Patterns	6	A1X	4	E
TDDC17	Artificial Intelligence	6	G2F	3	E
TDDD04	Software Testing	6	A1X	2	E
TDDD08	Logic Programming	6	A1N	4	E
TDDD38	Advanced Programming in C++	6*	A1N	2	E
Period 2					
TDDC90	Software Security	6	A1X	1	E
TDDD37	Database Technology	6	G2X	1	Е
TDDD38	Advanced Programming in C++	6*	A1N	-	E
TSIT02	Computer Security	6	G2F	2	E
TSKS11	Networks: Models, Algorithms and Applications	6	G2X	3	Е



Specialisation: Secure Systems

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDB84	Design Patterns	6	A1X	4	С
TDDD38	Advanced Programming in C++	6*	A1N	2	E
TDTS06	Computer Networks	6	G2X	1	E
TSIT03	Cryptology	6	A1X	2	E
Period 2					
TDDC90	Software Security	6	A1X	1	С
TSIT02	Computer Security	6	G2F	2	С
TDDD30	Advanced Software Engineering	6	A1X	4	E
TDDD37	Database Technology	6	G2X	1	Е
TDDD38	Advanced Programming in C++	6*	A1N	-	E

Semester 8 (Spring 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TAOP07	Introduction to Optimization	6	G1X	3	C/E
TANA15	Numerical Linear Algebra	6	A1X	1	Е
TATA53	Linear Algebra, Honours Course	6*	G2X	-	Е
TATA54	Number Theory	6*	G2X	-	E
TATA64	Graph Theory	6*	A1X	2	E
TBMI26	Neural Networks and Learning Systems	6	A1X	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	A1X	3	E
TDDD25	Distributed Systems	6	A1X	2	E
TDDD38	Advanced Programming in C++	6*	A1X	2	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1X	3	E
TDDD57	Physical Interaction and Game Programming	6	A1X	1	E
TDDD75	Effect-Driven Development and Human- Centered Design of Interactive Systems	6	G2X	3	E



TDDD95 Algorithmic Problem Solving 6* A1X 1 E TDDD97 Web Programming 6 G2X 3 E TDDE05 Al Robotics 6* A1X 4 E TDDE06 Large-Scale Software Development - Structures and Processes 6* A1X 4 E TDDE09 Natural Language Processing 6 A1X 2 E TDDE09 Natural Language Processing 6 A1X 1 E TDTS07 System Design and Methodology 6 A1X 1 E TDTS21 Advanced Networking 6* A1X 1 E TEIS28 Computer Law 4 G1X 1 E TEID20 Entrepreneurship and New Business Development 6* G2X 4 E TEIO20 Entrepreneurship and New Business Development 6* G1X 1 E TEID20 Entrepreneurship and New Business Development 6* G1X 1 E	Course code	Course name	Credits	Level	Timetable module	ECV
TDDE05 AI Robotics 6* A1X 4 E TDDE06 Large-Scale Software Development - Structures and Processes 6* A1X 4 E TDDE09 Natural Language Processing 6 A1X 1 E TDTS07 System Design and Methodology 6 A1X 1 E TDTS21 Advanced Networking 6* A1X 1 E TEIB88 Computer Law 4 G1X 1 E TEIO20 Entrepreneurship and New Business Development 6* G2X 4 E TGTU01 Technology and Ethics 6 G1X 1 E TKMJ15 Environmental Management Strategies 6 G1X 1 E TKMJ15 Environmental Management Strategies 6 G1X 3 E TSBK07 Computer Graphics 6* A1X 4 E TSBK07 Computer Graphics 6* A1X 4 E TSBK08 <t< td=""><td>TDDD95</td><td>Algorithmic Problem Solving</td><td>6*</td><td>A1X</td><td>1</td><td>E</td></t<>	TDDD95	Algorithmic Problem Solving	6*	A1X	1	E
TDDE06 Large-Scale Software Development - Structures and Processes 6* A1X 4 E TDDE09 Natural Language Processing 6 A1X 2 E TDTS07 System Design and Methodology 6 A1X 1 E TDTS21 Advanced Networking 6* A1X 1 E TEI020 Entrepreneurship and New Business Development 6* G2X 4 E TEI020 Entrepreneurship and New Business Development 6 G1X 1 E TGTU01 Technology and Ethics 6 G1X 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 A1X 2 E TENT07 Industrial Control Systems 6 A1X 2 E	TDDD97	Web Programming	6	G2X	3	E
TDDE09 Natural Language Processing 6 A1X 2 E TDTS07 System Design and Methodology 6 A1X 1 E TDTS21 Advanced Networking 6* A1X 1 E TEIE88 Computer Law 4 G1X 1 E TEIO20 Entrepreneurship and New Business Development 6* G2X 4 E TGTU01 Technology and Ethics 6 G1X 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 A1X 2 E TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 1 E TDDD27 Advanced Web Programming in C++ 6* A1X 2 E TDDD38 Advanced Programsing in C++ 6* A1X 1 E TDDD48 Automated Planning 6 A1X 1 E TDDD48 Algorithmic Problem Solving 6* A1X 1 E TDDD55 Algorithmic Problem Solving 6* A1X 1 E	TDDE05	Al Robotics	6*	A1X	4	E
TDTS07 System Design and Methodology 6 A1X 1 E TDTS21 Advanced Networking 6* A1X 1 E TEIE88 Computer Law 4 G1X 1 E TEIO20 Entrepreneurship and New Business Development 6* G2X 4 E TGTU01 Technology and Ethics 6 G1X 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 A1X 2 E TSRT07 Industrial Control Systems 6 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA64 Graph Theory 6* G2X - E TATA64 G	TDDE06		6*	A1X	4	E
TDTS21 Advanced Networking 6* A1X 1 E TEIE88 Computer Law 4 G1X 1 E TEIO20 Entrepreneurship and New Business Development 6* G2X 4 E TGTU01 Technology and Ethics 6 G1X 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 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD07 Information Security, Second Course 6* A1X 3 E TDDD07 Information Security, Second Course 6* A1X 4 E TDDD07 Information Security, Second Course 6* A1X 3 E TDDD07 Information Security, Second Course 6* A1X 3 E TDDD07 Advanced Web Programming 6 A1X 3 E TDDD08 Algorithmic Problem Solving 6* A1X 1 E	TDDE09	Natural Language Processing	6	A1X	2	E
TEIE88 Computer Law 4 G1X 1 E TEIO20 Entrepreneurship and New Business Development 6* G2X 4 E TGTU01 Technology and Ethics 6 G1X 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 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDD069 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDD078 Component Based Software 6 A1X 1 E TDDD07 Information Security, Second Course 6* A1X 4 E TDDD07 Advanced Web Programming 6 A1X 3 E TDDD08 Algorithmic Problem Solving 6* A1X 1 E TDDD08 Algorithmic Problem Solving 6* A1X 1 E	TDTS07	System Design and Methodology	6	A1X	1	E
TEIO20 Entrepreneurship and New Business Development TGTU01 Technology and Ethics G G1X 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 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDD0469 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 3 E TDDD27 Advanced Web Programming in C++ 6* A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X 1 E TDDD48 Automated Planning 6 A1X 1 E TDDD48 Algorithmic Problem Solving 6* A1X 1 E	TDTS21	Advanced Networking	6*	A1X	1	E
Development TGTU01 Technology and Ethics Environmental Management Strategies Envir	TEIE88	Computer Law	4	G1X	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 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD07 Information Security, Second Course 6* A1X 3 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Planning 6 A1X 1 E TDDD48 Automated Planning 6 A1X 1 E	TEIO20	·	6*	G2X	4	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 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming in C++ 6* A1X 3 E TDDD38 Advanced Planning 6 A1X 1 E TDDD48 Automated Planning 6 A1X 1 E TDDD48 Algorithmic Problem Solving 6* A1X 1 E	TGTU01	Technology and Ethics	6	G1X	1	E
TSBK07 Computer Graphics 6* A1X 4 E TSBK08 Data Compression 6 A1N 2 E TSRT07 Industrial Control Systems 6 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E	TKMJ15	Environmental Management Strategies	6	G1F	3	E
TSBK08 Data Compression 6 A1N 2 E TSRT07 Industrial Control Systems 6 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E	TNM048	Information Visualisation	6	A1X	3	E
TSRT07 Industrial Control Systems 6 A1X 2 E Period 2 TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming 10 C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TSBK07	Computer Graphics	6*	A1X	4	Е
TATA53 Linear Algebra, Honours Course 6* G2X - E TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming 10 C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E	TSBK08	Data Compression	6	A1N	2	E
TATA53 Linear Algebra, Honours Course TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TSRT07	Industrial Control Systems	6	A1X	2	E
TATA54 Number Theory 6* G2X - E TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E	Period 2					
TATA64 Graph Theory 6* A1X 2 E TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools 6 A1X 3 E TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E	TATA53	Linear Algebra, Honours Course	6*	G2X	-	E
TBME08 Biomedical Modeling and Simulation 6 A1X 3 E TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools 6 A1X 3 E TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TATA54	Number Theory	6*	G2X	-	Е
TDDA69 Data and Program Structures 6* G2X 1 E TDDC78 Programming of Parallel Computers - Methods and Tools 6 A1X 3 E TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TATA64	Graph Theory	6*	A1X	2	E
TDDC78Programming of Parallel Computers - Methods and Tools6A1X3ETDDD05Component Based Software6A1X1ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1X3ETDDD29IT-Project Management6A1X3ETDDD38Advanced Programming in C++6*A1X-ETDDD48Automated Planning6A1X1ETDDD95Algorithmic Problem Solving6*A1X4E	TBME08	Biomedical Modeling and Simulation	6	A1X	3	E
TDDD05 Component Based Software 6 A1X 1 E TDDD17 Information Security, Second Course 6* A1X 4 E TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TDDA69	Data and Program Structures	6*	G2X	1	E
TDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1X3ETDDD29IT-Project Management6A1X3ETDDD38Advanced Programming in C++6*A1X-ETDDD48Automated Planning6A1X1ETDDD95Algorithmic Problem Solving6*A1X4E	TDDC78		6	A1X	3	E
TDDD27 Advanced Web Programming 6 A1X 3 E TDDD29 IT-Project Management 6 A1X 3 E TDDD38 Advanced Programming in C++ 6* A1X - E TDDD48 Automated Planning 6 A1X 1 E TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TDDD05	Component Based Software	6	A1X	1	E
TDDD29IT-Project Management6A1X3ETDDD38Advanced Programming in C++6*A1X-ETDDD48Automated Planning6A1X1ETDDD95Algorithmic Problem Solving6*A1X4E	TDDD17	Information Security, Second Course	6*	A1X	4	E
TDDD38Advanced Programming in C++6*A1X-ETDDD48Automated Planning6A1X1ETDDD95Algorithmic Problem Solving6*A1X4E	TDDD27	Advanced Web Programming	6	A1X	3	E
TDDD48 Automated Planning 6 A1X 1 E TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TDDD29	IT-Project Management	6	A1X	3	E
TDDD95 Algorithmic Problem Solving 6* A1X 4 E	TDDD38	Advanced Programming in C++	6*	A1X	-	E
	TDDD48	Automated Planning	6	A1X	1	E
TDDE05 Al Robotics 6* A1X 4 E	TDDD95	Algorithmic Problem Solving	6*	A1X	4	E
	TDDE05	Al Robotics	6*	A1X	4	E



Course code	Course name	Credits	Level	Timetable module	ECV
TDDE06	Large-Scale Software Development - Structures and Processes	6*	A1X	4	E
TDDE07	Bayesian Learning	6	A1X	2	E
TDDE31	Big Data Analytics	6	A1X	1	Е
TDDE34	Software Verification	6	A1X	1	E
TDTS21	Advanced Networking	6*	A1X	1	E
TEAE13	Civil and Commercial Law	6	G1X	2	E
TEIE44	Intellectual Property Rights	4	G1X	1	E
TEIO20	Entrepreneurship and New Business Development	6*	G2X	4	E
TGTU76	Philosophy of Science	6	G1X	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	A1X	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	A1X	2	E
TDDD20	Design and Analysis of Algorithms	6	A1X	3	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1X	3	E
TDDD95	Algorithmic Problem Solving	6*	A1X	1	E
TDDE05	AI Robotics	6*	A1X	4	E
TDDE09	Natural Language Processing	6	A1X	2	E
TSRT07	Industrial Control Systems	6	A1X	2	E
Period 2					
TDDD48	Automated Planning	6	A1X	1	E
TDDD95	Algorithmic Problem Solving	6*	A1X	4	E
TDDE05	Al Robotics	6*	A1X	4	E
TDDE07	Bayesian Learning	6	A1X	2	E
TDDE31	Big Data Analytics	6	A1X	1	E
TSFS06	Diagnosis and Supervision	6	A1N	1	E
TSRT14	Sensor Fusion	6	A1X	2	E

Specialisation: Computer Games Programming

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



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
Period 2					
TDDD05	Component Based Software	6	A1X	1	E
TDDE06	Large-Scale Software Development - Structures and Processes	6*	A1X	4	E
TDDE34	Software Verification	6	A1X	1	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	A1X	3	Е
TDDD38	Advanced Programming in C++	6*	A1X	2	E
TDDD41	Data Mining - Clustering and Association Analysis	6	A1X	3	E
TDDD95	Algorithmic Problem Solving	6*	A1X	1	E
TDDE09	Natural Language Processing	6	A1X	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
TDDD05	Component Based Software	6	A1X	1	E
TDDD14	Formal Languages and Automata Theory	6	G2X	2	Е
TDDD38	Advanced Programming in C++	6*	A1X	-	Е
TDDD95	Algorithmic Problem Solving	6*	A1X	4	E
TDDE34	Software Verification	6	A1X	1	Е



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*	A1X	2	Е
TDDD97	Web Programming	6	G2X	3	E
TDTS21	Advanced Networking	6*	A1X	1	E
Period 2					
TDDD17	Information Security, Second Course	6*	A1X	4	С
TDDD27	Advanced Web Programming	6	A1X	3	E
TDDD38	Advanced Programming in C++	6*	A1X	-	Е
TDTS21	Advanced Networking	6*	A1X	1	Е

Semester 9 (Autumn 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDE14	Large-Scale Software Development: Contributions and Evolution	6*	A1X	4	E
TDDE15	Advanced Machine Learning	6	A1X	1	E
TDDE19	Advanced Project Course - Al and Machine Learning	6*	A1F	4	E
TDDE20	Advanced Project Course - Game, App and Web Development	6*	A1X	4	E
TDDE21	Advanced Project Course: Secure Distributed and Embedded Systems	6*	A1X	4	E
TDEI13	Enterprise Resource Planning Systems: Process and Implementation	6	A1X	2	E
TNCG15	Advanced Global Illumination and Rendering	6	A1X	4	Е
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	Е
TSBK03	Advanced Game Programming	6*	A1X	1	E
TSIN01	Information Networks	6	A1X	3	E



Course code	Course name	Credits	Level	Timetable module	ECV
TSKS12	Modern Channel Coding, Inference and Learning	6	A1N	1	E
Period 2					
TDDD89	Scientific Method	6	A1X	3	С
TAOP61	Optimization of Realistic Complex Systems	6	A1N	3	Е
TBMI02	Medical Image Analysis	6	A1X	1	E
TDDB44	Compiler Construction	6	A1X	1	E
TDDC90	Software Security	6	A1X	1	Е
TDDD30	Advanced Software Engineering	6	A1X	4	Е
TDDD56	Multicore and GPU Programming	6	A1X	2	Е
TDDE13	Multi Agent Systems	6	A1X	1	Е
TDDE14	Large-Scale Software Development: Contributions and Evolution	6*	A1X	4	E
TDDE16	Text Mining	6	A1X	2	Е
TDDE19	Advanced Project Course - Al and Machine Learning	6*	A1F	4	E
TDDE20	Advanced Project Course - Game, App and Web Development	6*	A1X	4	E
TDDE21	Advanced Project Course: Secure Distributed and Embedded Systems	6*	A1X	4	E
TNM086	Virtual Reality Techniques	6	A1X	2	Е
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	A1X	1	E
TSBB17	Visual Object Recognition and Detection	6	A1X	2	E
TSRT62	Modelling and Simulation	6	A1X	3	E
Period 2					
TDDE19	Advanced Project Course - Al and Machine Learning	6*	A1F	4	С
TDDE13	Multi Agent Systems	6	A1X	1	Е
TDDE16	Text Mining	6	A1X	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*	A1X	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*	A1X	4	E
TSBB11	Images and Graphics, Project Course CDIO	12*	A1X	4	E
TSIN02	Internetworking	6	A1N	1	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
TDDB84	Design Patterns	6	A1X	4	Е
TDDD04	Software Testing	6	A1X	2	Е
TDDD38	Advanced Programming in C++	6*	A1X	2	Е
TDDD43	Advanced Data Models and Databases	6*	A1X	2	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	A1X	1	Е
TDDD07	Real Time Systems	6	A1X	4	Е
TDDD30	Advanced Software Engineering	6	A1X	4	Е
TDDD38	Advanced Programming in C++	6*	A1X	-	E
TDDD43	Advanced Data Models and Databases	6*	A1X	2	Е
TDEI19	Management Control	6	A1X	2	Е
TEIM03	Intercultural Communication	4	G1X	4	Е

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					
TDDD30	Advanced Software Engineering	6	A1X	4	E
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					
TDDB84	Design Patterns	6	A1X	4	E
TDDD08	Logic Programming	6	A1X	4	E
TSIT03	Cryptology	6	A1X	2	E
Period 2					
TDDB44	Compiler Construction	6	A1X	1	E
TDDD56	Multicore and GPU Programming	6	A1X	2	E

Specialisation: Secure Systems

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TDDD04	Software Testing	6	A1X	2	С
TDDD38	Advanced Programming in C++	6*	A1X	2	Е
TDDE21	Advanced Project Course: Secure Distributed and Embedded Systems	6*	A1X	4	E
TDTS06	Computer Networks	6	G2X	1	E
TSIT03	Cryptology	6	A1X	2	E
Period 2					
TDDC90	Software Security	6	A1X	1	С
TDDD30	Advanced Software Engineering	6	A1X	4	E
TDDD37	Database Technology	6	G2X	1	E
TDDD38	Advanced Programming in C++	6*	A1X		Е
TDDE21	Advanced Project Course: Secure Distributed and Embedded Systems	6*	A1X	4	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



LINKÖPING UNIVERSITYFACULTY OF SCIENCE AND ENGINEERING

COMPUTER SCIENCE AND SOFTWARE ENGINEERING, M SC IN ENGINEERING APPROVED

17 (17)

ECV = Elective / Compulsory /Voluntary
*The course is divided into several semesters and/or periods

