

University of Oulu

Computer Science and Engineering, Master's Degree Programme (2 years)

Specialization: Artificial Intelligence

Master of Science (Technology), 120 ECTS Credits

Course Structur Diagram 2020-2021

Code and link to the course description in Oodi	Course name and ECST Credits		Preferred timing								Totally carried out as network studies (is possible to study totally in network)	Carried out with English language		
			1. academic year				2. academic year							
			autumn		spring		autumn		spring					
1P	2P	3P	4P	1P	2P	3P	4P							
	Specialization Options, Artificial Intelligence, Compulsory Courses 55 ECTS cr													
521158S	Natural Language Processing and Text Mining	5,0	5											
521156S	Towards Data Mining	5,0	5								(x)	x		
031025A	Introduction to Optimization	5,0		5									x	
521273S	Biosignal Processing I	5,0		5								(x)	x	
521466S	Machine Vision	5,0			5								x	
521289S	Machine Learning	5,0			5								x	
521283S	Big Data Processing and Applications	5,0				5							x	
521140S	Computer Graphics	5,0				5							x	
521285S	Affective Computing	5,0					5						x	
521161S	Multi-modal Data Fusion	5,0						5				(x)	x	
521153S	Deep Learning	5,0						5					x	
	Advanced Modules: Artificial Intelligence, Recommended Optional Studies, minimum 30 ECTS cr													
	Choose f.g. from the following courses total 30 ECTS cr.	30,0	5	5	5	5	5		2,5	2,5				
521155S	Computer Security	5,0	0.0				0.0					x	x	
031051S	Numerical Matrix Analysis	5,0	0.0				0.0						x	
521489S	Research Work on Information Processing	8,0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			x	
521348S	Statistical Signal Processing I	5,0	0.0				0.0						x	
521291S	VR Systems and Humans	5,0		0.0				0.0					x	
521145A	Human-Computer Interaction	5,0		0.0				0.0					x	
521290S	Distributed Systems	5,0			0.0				0.0				x	
521337A	Digital Filters	5,0			0.0				0.0				(x)	
521293A	Introduction to XR Systems	5,0			0.0				0.0				x	
813621S	Research Methods	5,0			0.0	0.0							x	
521260S	Programmable Web Project	5,0			0.0	0.0			0.0	0.0		x	x	
521292S	Fundamentals of Sensing, Tracking and Autonomy	5,0			0.0	0.0			0.0	0.0			x	

521260S	Programmable Web Project	5,0			2,5	2,5						x	x	
521292S	Fundamentals of Sensing, Tracking and Autonomy	5,0			2,5	2,5							x	
521283S	Big Data Processing and Applications	5,0				5							x	
521158S	Natural Language Processing and Text Mining	5,0					5						x	
	Advanced Modules: Applied Computing, Recommended Optional Studies, minimum 35 ECTS cr													
	Choose f.g. from the following courses total 35 ECTS cr.	35,0		5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0			
521479S	Software Project	7,0	0,0	0,0			0,0	0,0					x	
811372A	Software Development, Maintenance and Operations	5,0	0,0				0,0						x	
521155S	Computer Security	5,0	0,0				0,0					x	x	
521286A	Computer Systems	8,0	0,0	0,0			0,0	0,0					(x)	
521423S	Embedded System Project	5,0			0,0	0,0			0,0	0,0			(x)	
521495A	Artificial Intelligence	5,0			0,0				0,0				x	
811607S	Persuasive Systems Design	5,0			0,0				0,0				x	
812671S	User Experience (UX) and Usability Evaluation (or 812650S)	5,0			0,0	0,0			0,0	0,0			x	
521275A	Embedded Software Project	8,0			0,0	0,0			0,0	0,0			(x)	
521140S	Computer Graphics	5,0				0,0				0,0			x	
812651S	ICT and Behaviour Change	5,0				0,0				0,0			x	
521157A	Introduction to Social Network Analysis	5,0				0,0				0,0			x	
521489S	Research Work on Information Processing	8,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	x	x	
521152S	Applied Computing Project II	10,0					0,0	0,0	0,0	0,0			x	
521154S	UBISS - International UBI Summer School	5,0											x	
521149S	Special Course in Information Technology	5,0-8,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0		x	
813621S	Research Methods	5,0			0,0	0,0							x	
812650S	Advanced Topics in Human-Centred Design	5,0			0,0				0,0				x	
521046A	Mobile Computing	5,0			0,0				0,0			x	x	
Optional Studies for Foreign Language Students Only:														
900017Y	Survival Finnish Course	2,0	0,0											
900013Y	Beginners' Finnish Course 1	3,0		0,0										
	Supplementary Module													
	Supplementary module can include for example courses from the basic module of another orientation.													
	Common Obligatory Courses, 35 ECTS cr													
521027S	Advanced Practical Training	5,0					5							
521993S	Master's Thesis in Computer Engineering	30,0						10	10	10				
521009S	Computer Science and Engineering, The Maturity Test for Master's Degree	0,0								0				
	ECTS Credits / Period (15 credits)		15	15	15	15	15	15	15	15	15	4	26	
	ECTS Credits / Semester (30 credits)		30		30		30		30					
	ECTS Credits / Academic year (60 credits)		60				60							
	Degree (180 credits)		120											

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Specialization: Computer

Engineering, Software

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Code and link to the course description in Oodi	Course name and ECST Credits		Preferred timing								Totally carried out as network studies (is possible to study totally in network) (x)	Carried out with English language
			1. academic year				2. academic year					
			autumn		spring		autumn		spring			
		1P	2P	3P	4P	1P	2P	3P	4P			
	Specialization Options, Computer Engineering, Compulsory Courses 37 ECTS cr											
521479S	Software Project	7,0	3,5	3,5								x
521155S	Computer Security	5,0	5								x	x
521279S	Signal Processing Systems	5,0		5								x
521288S	Multiprocessor Programming	5,0			2,5	2,5						x
521423S	Embedded System Project	5,0			2,5	2,5						x
521043S	Internet of Things	5,0					5					x
521281S	Application Specific Signal Processors	5,0					5					x
	Advanced Modules: 2. Software / Compulsory Courses, 20 op											
521348S	Statistical Signal Processing I	5,0	5									x
521340S	Communication Networks I	5,0		5								x
521290S	Distributed Systems	5,0			5							x
521395S	Wireless Communications I	5,0					5					x
	Advanced Modules: 1. Software / Optional Courses, 28op											
	Choose f.g. from the following courses total 28 ECTS cr.	28,0	1,5	1,5	5	10		5	5			
521156S	Towards Data Mining	5,0	0.0				0.0				(x)	x
521307A	Laboratory Exercises on Analogue Electronics	5,0	0.0	0.0			0.0	0.0				
521489S	Research Work on Information Processing	8,0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	x	x
031025A	Introduction to Optimization	5,0		0.0				0.0				x
521145A	Human-Computer Interaction	5,0		0.0				0.0				x
521273S	Biosignal Processing I	5,0		0.0				0.0			(x)	x
521070A	Introduction to Microfabrication Techniques	5,0		0.0				0.0				
521337A	Digital Filters	5,0			0.0				0.0			(x)
813621S	Research Methods	5,0			0.0	0.0			0.0	0.0		x
521260S	Programmable Web Project	5,0			0.0	0.0			0.0	0.0	x	x
521466S	Machine Vision	5,0			0.0				0.0			x

521289S	Machine Learning	5,0			0.0				0.0			x	
521467A	Digital Image Processing	5,0				0.0				0.0		(x)	
521283S	Big Data Processing and Applications	5,0				0.0				0.0		x	
521140S	Computer Graphics	5,0				0.0				0.0		x	
Optional Studies for Foreign Language Students Only:													
900017Y	Survival Finnish Course	2,0	0.0										
900013Y	Beginners' Finnish Course 1	3,0		0.0									
Supplementary Module Supplementary module can include for example courses from the basic module of another orientation.													
Common Obligatory Courses, 35 ECTS cr													
521027S	Advanced Practical Training	5,0					5						
521993S	Master's Thesis in Computer Engineering	30,0						5	10	15			
521009S	Computer Science and Engineering, The Maturity Test for Master`s Degree	0,0								0			
ECTS Credits / Period (15 credits)			15	15	15	15	15	15	15	15	3	22	
ECTS Credits / Semester (30 credits)			30		30		30		30				
ECTS Credits / Academic year (60 credits)			60				60						
Degree (180 credits)			120										