

University of Oulu  
 Course Structure Diagram 2015-2016  
 Master of Science (Technology)  
 International Master's Programme in Computer Science and Engineering  
 (120 ECTS)

Code	Course	Scope	Recommended Time			
			1st year		2nd year	
			1. autumn	1. spring	2. autumn	2. spring
<b>Basic Module</b>		<b>20 ECTS cr</b>				
<a href="#">900017Y</a>	Survival Finnish	2 ECTS cr	2			
<a href="#">900013Y</a>	Beginner's Finnish I	2 ECTS cr	2			
<a href="#">521003P</a>	Orientation Course for New CSE Students	1 ECTS cr	1			
<a href="#">81362IS</a>	Research Methods	5 ECTS cr	5			
<a href="#">521145A</a>	Human Computer Interaction	5 ECTS cr	5			
<a href="#">521260S</a>	Programmable Web Project	5 ECTS cr		5		
<b>Specialisation Options</b>						
<b>Computer Vision and Signal Processing</b>						
<b>Compulsory</b>		<b>57 ECTS cr</b>				
<a href="#">521279S</a>	Signal Processing Systems	5 ECTS cr	5			
<a href="#">521321S</a>	Elements of Information Theory and Coding	5 ECTS cr			5	
<a href="#">031025A</a>	Introduction to Optimization	5 ECTS cr	5			
<a href="#">521466S</a>	Machine Vision	5 ECTS cr		5		
<a href="#">521289S</a>	Machine Learning	5 ECTS cr		5		
<a href="#">521493S</a>	Computer Graphics	7 ECTS cr		7		
<a href="#">521281S</a>	Application Specific Signal Processors	5 ECTS cr			5	
<a href="#">521288S</a>	Multiprocessor Programming	5 ECTS cr		5		
<a href="#">521259S</a>	Digital Video Processing	5 ECTS cr			5	
<a href="#">521285S</a>	Affective Computing	5 ECTS cr			5	
<a href="#">521273S</a>	Biosignal Processing I	5 ECTS cr	5			
<b>Recommended Optional Studies</b>		<b>10 ECTS cr</b>				10
<a href="#">521495A</a>	Artificial Intelligence	5 ECTS cr				5
<a href="#">521337A</a>	Digital Filters	5 ECTS cr				5
<a href="#">521484A</a>	Statistical Signal Processing	5 ECTS cr				5
<a href="#">521147S</a>	Mobile and Social Computing	5 ECTS cr				5
<a href="#">521467A</a>	Digital Image Processing	5 ECTS cr			5	
<a href="#">521489S</a>	Research Work on Information Processing	8 ECTS cr			8	
<a href="#">521148S</a>	Ubiquitous Computing Fundamentals	5 ECTS cr			5	
<a href="#">521283S</a>	Big Data Processing and Applications	5 op		5	or	5
<b>Ubiquitous Computing</b>						
<b>Compulsory</b>		<b>40 ECTS cr</b>				
<a href="#">521148S</a>	Ubiquitous Computing Fundamentals	5 ECTS cr	5			
<a href="#">521151A</a>	Applied Computing Project I	10 ECTS cr	5	5		
<a href="#">521147S</a>	Mobile and Social Computing	5 ECTS cr		5		
<a href="#">521290S</a>	Distributed Systems	5 ECTS cr		5		
<a href="#">521152S</a>	Applied Computing Project II	10 ECTS cr			5	5
<a href="#">812331A</a>	Interaction design	5 ECTS cr	5			
<b>Recommended Optional Studies</b>		<b>27 ECTS cr</b>		7	15	5
<a href="#">521479S</a>	Software Project	7 ECTS cr		7	or	7
<a href="#">521283S</a>	Big Data Processing and Applications	5 op		5	or	5

<a href="#">521149S</a>	Special Course in Information Technology	5-8 ECTS cr			5- 8 or	5-8
<a href="#">521489S</a>	Research Work on Information Processing	8 ECTS cr			8 or	8
<a href="#">521428S</a>	UBI Summer School	5 ECTS cr		summer		
<a href="#">812331A</a>	Interaction Design	5 ECTS cr	5			
<a href="#">815657S</a>	Open Source Software Development	5 ECTS cr			5	
<a href="#">815305A</a>	Real Time Distributed Software Development	5 ECTS cr			5	
<a href="#">817603S</a>	System Design Methods for Information Systems	5 ECTS cr			5	
<a href="#">813625S</a>	Information Systems Theory	5 ECTS cr			5	
<b>Common Compulsory</b>		<b>33 ECTS cr</b>				
<a href="#">521013A</a>	Advanced Practical Training	3 ECTS cr		3		
<a href="#">521993S</a>	Master's Thesis in Computer Engineering	30 ECTS cr			10	20
Semesters Total			30	30	30	30
Academic Year Total			60		60	