

Table I: The General Course Plan for ASC

Module Nr.	Type of Module	ECTS	Module	ECTS in Semester			
				First	Second	Third	Fourth
1	<b>Mandatory modules (60ECTS)</b>	5	Mathematical Optimization for Communications and Signal Processing	5			
2		5	Information Theory and Coding	5			
3		5	Statistical Signal Processing	5			
4		5	Game Theory with Applications to Information Engineering	5			
5		5	Machine Learning in Signal Processing	5			
6		5	Selected Topics in ASC		5		
7		5	Kick-off Seminar (Winter School, Summer School)	2.5	2.5		
8		15	Research Project (Major)			15	
9		10	Research Project (Minor)			10	
10		<b>Mandatory-Elective Modules (20ECTS)</b>	15	From “ <b>Technical Mandatory-Elective Courses</b> ” (Table 2)		15	
11	5		From “ <b>Technical Lab Courses</b> ” (Table II)	2.5	2.5		
12	<b>Elective Modules (10ECTS)</b>	5	From “ <b>Nontechnical Elective Courses</b> ” (Table II)		5		
13		5	From “ <b>Technical Elective Courses</b> ” (Table II)			5	
14	<b>Master Thesis</b>	30	Master Thesis				30
Sum ECTS in Semester				30	30	30	30
Sum ECTS							120

Table II

Module Class	Course Name	ECTS in Winter Semester	ECTS in Summer Semester
<b>Technical Mandatory-Elective Courses</b>	Communications Systems Design	5	
	Convex Optimization in Communications and Signal Processing	5	
	Mobile Communications		5
	Image and Video Compression		5
	MIMO Communication Systems		5
	Speech and Audio Signal Processing		5
	Advanced Communication Networks		5
<b>Technical Lab Courses</b>	Statistical Signal Processing	2.5	
	Image and Video Signal Processing on Embedded Systems	2.5	
	Multimedia Communications		2.5
	Mobile Communications		2.5
	Audio Processing	2.5	
<b>Technical Elective Courses</b>	Image, Video, and Multidimensional Signal Processing	5	
	Molecular Communications	5	
	Multiuser Information and Communications Theory	5	
	Channel Coding		5
	Pattern Recognition	5	
	Pattern Analysis		5
	Advanced Audio Processing	5	
	Music Processing	5	
	Advanced Game Theory	5	
	Linear and non-linear Fibre Optics		5
	Advanced Optical Communication Systems	5	
	Concurrent Systems	5	
	Reconfigurable Computing	5	
	Theory of Communication in Parallel Systems	5	
	Advanced Networking	5	
	Equalization and Adaptive Systems for Digital Communications	2.5	
	Transmission and Detection for Advanced Mobile Communications		2.5
	Signal Analysis	2.5	
	Transforms in Signal Processing		2.5
	Machine Learning in Communications	5	
Human-Machine-Interfaces		2.5	
Random Matrices in Communications and Signal Processing	2.5		