

Table I: The general course plan for ASC

Module Nr.	Type of Module	ECTS	Module	ECTS in Semester			
				First	Second	Third	Fourth
1	Mandatory modules (60ECTS)	5	Mathematical optimization in Communications and Signal Processing	5			
2		5	Information Theory and Coding	5			
3		5	Statistical Signal Processing	5			
4		5	Game Theory with Application 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	Mandatory-Elective Modules (20ECTS)	15	From “ Technical Mandatory-Elective Courses ” (Table 2)	5	10		
11		5	From “ Technical Lab Courses ” (Table II)	2.5	2.5		
12	Elective Modules (10ECTS)	5	From “ Nontechnical Elective Courses ” (Table II)		5		
13		5	From “ Technical Elective Courses ” (Table II)			5	
14	Master Thesis	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
Technical Mandatory-Elective Courses	Communications Systems Design	5	
	Convex Optimization	5	
	Mobile Communications		5
	Image and Video Compression		5
	MIMO Communications		5
	Speech and Audio Signal Processing		5
	Advanced Communication Networks		5
Technical Lab Courses	Statistical Signal Processing	2.5	
	Machine Learning in Signal Processing		2.5
	Multimedia Communications		2.5

Technical Lab Courses	Mobile Communications		2.5
	Advanced Audio Processing	2.5	
Technical Elective Courses	Image, Video, and Multidimensional Signal Processing	5	
	Molecular Communications	5	
	Advanced Information Theory	5	
	Channel Coding		5
	Pattern Recognition	5	
	Pattern Analysis		5
	Advanced Audio Processing	5	
	Music Processing	5	
	Advanced Game Theory	5	
	Linear and Nonlinear Fiber Optics		5
	Advanced Optical Communications Systems	5	
	Architectures for Advanced Digital Signal Processing	5	
	Concurrent Systems	5	
	Reconfigurable Computing	5	
	Approximate Computing		5
	Theory of Communication in Parallel Systems	5	
	Advanced Networking	5	
	Radio Resource Allocation in Advanced Cellular Networks		2.5
	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