

1.	Course title	Sensor based systems		
2.	Course code	SOCD-I-07		
3.	Study program	System on Chip Design		
4.	Unit offering the course	FCSE		
5.	Undergraduate/master/PhD	Master		
6.	Year/semester 1(2)/summer/elective	7. ECTS: 6		
8.	Teacher(s)	Assoc. Prof. Vladimir Trajkovikj, Assoc. Prof. Andrea Kulakov		
9.	Course prerequisites	None		
10.	Goals (competences): After successfully completing the course, the student is expected to understand sensor based systems and embedded platforms.			
11.	Course content: Sensor technologies. Measurable physical characteristics. Data fusion methods and algorithms. Mediator communication, connectivity and networking topologies. Using sensor based systems in machine intelligence, security, entertainment and business processes. Sensor selection based on application. Using data fusion principles for goal achievement. Sensor protection and data protection. Limited security. Network topologies for increased resilience, performances and costs. Personalization and virtual spaces.			
12.	Teaching methods: Lectures supported by slide presentations, interactive lectures, trainings (using lab equipment and software packages), team work, case studies, invited guests and lectures, individual practical assignments presentations, seminar paper, e-learning (forums, consultations).			
13.	Total available time	6 ECTS x 30 hours = 180 hours		
14.	Distribution of the available time	30 + 15 + 135 = 180 hours		
15.	Teaching activities	15.1.	Lectures	30 hours
		15.2.	Training (labs, problem solving), seminar and team work	15 hours
16.	Other activities	16.1.	Project work	60 hours
		16.2.	Self study	25 hours
		16.3.	Home work	50 hours
17.	Grading			
	17.1.	Tests		45 points
	17.2.	Seminar work/project (written or oral presentation)		45 points
	17.3.	Active participation		10 points
18.	Grading criteria		to 59 points	5 (five) (F)
			from 60 to 68 points	6 (six) (E)
			from 69 to 76 points	7 (seven) (D)

		from 77 to 84 points	8 (eight) (C)			
		from 85 to 92 points	9 (nine) (B)			
		from 93 to 100 points	10 (ten) (A)			
19.	Final exam prerequisites	Successfully completed activities 15.1 and 15.2				
20.	Course language	Macedonian and English				
21.	Quality assurance methods	Internal evaluation and student questionnaires				
22.	Literature					
	22.1.	Compulsory				
		No.	Authors	Title	Publisher	Year
		1.	Gerard Meijer	Smart Sensor Systems	Wiley-Interscience	2008
		2.	Guanling Chen and David Kotz	A Survey of Context-Aware Mobile Computing Research		2007
	3.	Anind K. Dey	Understanding and Using Context		2007	
	22.2.	Additional				
		No.	Authors	Title	Publisher	Year
		1.	Horst Bunke (Editor), Takeo Kanade (Editor), Hartmut Noltemeier (Editor)	Modeling and Planning for Sensor Based Intelligent Robot Systems	World Scientific Pub Co Inc	1995
		2.		Selected papers		
3.						