1.	Course title	**Developing software for mobile and embedded systems**	
2.	Course code	SOCD-Z-03	
3.	Study program	**System on Chip Design**	
4.	Unit offering the course	**FCSE**	
5.	Undergraduate/master/PhD	**Master**	
6.	Year/semester 1(2)/summer/compulsory	7. ECTS: **6**	
8.	Teacher(s)	Assoc. Prof. Dimitar Trajanov	
9.	Course prerequisites	None	
10.	Goals (competences): After successfully completing the course, the student is expected to understand and be able to use the embedded operating systems. The student will be able to develop software for embedded systems and understand the specifics of embedded systems software development.		
11.	Course content: Embedded operating systems. Embedded Linux, Windows CE, PALM OS, iOS. Interfaces: types. Using timing interrupts, system integration. Network embedded systems, examples. Embedded systems programming using C/C++: reading port pins and mechanical switches, adding structure to code, real time limitations, development of embedded operating systems, using the serial interfaces. Java 2, Micro Edition (J2ME): configurations, CLDC, CDC profiles, J2ME wireless tools. Small devices design: limited computing capacity, limited screen size, limited memory. User interface: Mobile Information Device Profile (MIDP). Information storage: writing information using MIDP, RMS API, Java databases. Networking: network connections in Palm devices, Generic Connection Framework, Internet access using palm device, network connections using PocketPC.		
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.	Richard Zurawski	Embedded Systems Handbook	Taylor & Francis	2006
		2.	Karim Yaghmour, Jon Masters, Gilad Ben-Yossef, and Philippe Gerum	Building Embedded Linux Systems	O'Reilly Media	2008
		3.	Gornakov S.G.	Programming of Mobile Phones on Java 2 Micro Edition and Networks	DMK Press	2004
	22.2.	Additional				
		No.	Authors	Title	Publisher	Year
		1.				
		2.				
		3.				