1.	Course title	**Medical informatics**	
2.	Course code	SI-I-01	
3.	Study program	**Master studies in Computer Science and Engineering - Software engineering**	
4.	Unit offering the course	**FCSE**	
5.	Undergraduate/master/PhD	**Master**	
6.	Year/semester 1/winter/elective	7. ECTS: **6**	
8.	Teacher(s)	Prof. d-r Suzana Loshkovska, assist.prof. d-r Ivan Chorbev	
9.	Course prerequisites	None	
10.	Goals (competences): After the completion of the course, the student is expected to know and understand the problems emerging while implementing computer systems in medical environment or while solving problems in medicine. Upon the completion of the course, the student is expected to know how to define requirements and design software systems operating in medical facilities.		
11.	Course content: Introduction and overview – basic concepts; terminology; "state of the art" medical system; application and areas of interest. Biological signals – biomedical sensors, analysis of bio-signals, Methods for bio-signals processing. Diagnostic information – sources of diagnostic information, diagnostic equipment; processing and analysis of medical images, system for monitoring real-time processes; Anatomical and physiological models of the human body – bioelectrical phenomena, physiological processes, diffusion mathematics, pharmacokinetic models, mechanics of biologic fluids, visualisation of anatomical and physiological models. Application of computer systems in healthcare. Patient medical record – structuring a computer based medical patient record. Computer supported medical environment – ambulance subsystems, clinical subsystems, clinical support services, monitoring hospital patients, decision support systems. Medical information systems (basic concepts); problems; user interfaces; standards; security; robustness; performance evaluation.		
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	60 + 0 + 120 = 180 hours	
15.	Teaching activities	15.1. Lectures	60 hours
		15.2. Training (labs, problem solving), seminar and team work	0 hours
16.	Other activities	16.1. Project work	35 hours
		16.2. Self study	45 hours
		16.3. Home work	40 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	

		Literature				
22.		**Compulsory**				
	22.1.	No.	Authors	Title	Publisher	Year
		1.	E. Shortliffe, J. Cimino, (eds.)	Biomedical Informatics, Computer Applications in Health Care and Third edition,	Springer	2006
		2.	H. Chen, S. S . Fuller, C. Friedman, W. Hersh	MEDICAL INFORMATICS: Knowledge Management and Data Mining in Biomedicine	Springer Science+Business Media, Inc.	2005
		3.				
	22.2.	**Additional**				
		No.	Authors	Title	Publisher	Year
		1.				
		2.				
		3.				