

1.	Course Title	Crowd-sourcing and human computing		
2.	Code	F18L3S162		
3.	Study program	Software engineering and information systems		
4.	Study Program Organizer	Faculty of Computer Science and Engineering		
5.	Degree (first, second, third cycle)	first cycle		
6.	Academic year / semester 4 / summer / mandatory	7. ECTS credits 6		
8.	Teacher	assistant professor Sasho Gramatikov		
9.	Course enrollment prerequisites	МАШИНСКО УЧЕЊЕ		
10.	<p>Course program goals (competencies):</p> <p>The main goal of the course is to introduce the students to the capabilities of the crowd to share and process data that for solving problems which are still complex for the computer system, and at the same time, very simple for a collective with human intelligence. The students will get acquainted with new design of applications and concept of programming based on unreliable contribution of vast number of individuals in a crowd. The course will give an overview of the existing platforms for data collections and on demand task solving.</p>			
11.	<p>Course program content:</p> <p>Introduction to crowd sourcing. Platforms for crowd sourcing. Working problems. Program paradigms. Work flows for crowd sourcing. Attacks and protection. Overview and economy of crowd-source applications. Swarm intelligence. Systems and applications for networked mobile nodes.</p>			
12.	<p>Learning methods:</p> <p>Lectures using presentations, interactive lectures, exercises (using equipment and software packages), teamwork, case studies, invited guest lecturers, independent preparation and defense of a project assignment and seminar work.</p>			
13.	Total available time	6 ECTS x 30 hours = 180 hours		
14.	Distribution of the available time	30 + 45 + 15 + 15 + 75 = 180 hours		
15.	Teaching activity forms	15.1.	Lectures – theoretical teaching	30 hours
		15.2.	Exercises (laboratory, auditory), seminar papers, teamwork	45 hours

16.	Other activity forms		16.1.	Project Tasks	15 hours	
			16.2.	Independent Learning Tasks	15 hours	
			16.3.	Home learning	75 hours	
17.	Assessment methodology					
	17.1.	Tests			10 points	
	17.2.	Seminar paper/project (presentation: written and oral)			10 points	
	17.3.	Activity and learning			10 points	
	17.4.	Final exam			70 points	
18.	Assessment criteria (points/grade)		up to 50 points		5 (five) (F)	
			51 to 60 points		6 (six) (E)	
			61 to 70 points		7 (seven) (D)	
			71 to 80 points		8 (eight) (C)	
			81 to 90 points		9 (nine) (B)	
			91 to 100 points		10 (ten) (A)	
19.	Course completion and final exam requirements		Realized activities 15.1 and 15.2			
20.	Teaching Language		Macedonian and English			
21.	Teaching quality evaluation method		Internal evaluation mechanisms and questionnaires			
22.	Course Material					
	22.1.	Mandatory course material				
		No	Author	Title	Publisher	Year
		1	Cass R. Sunstein	Infotopia - How many minds produce knowledge	Oxford University Press	2006
		2	Edith Law, Luis von Ahn	Human Computation	Morgan&Claypool publishers	2011
		3	Pietro Michelucci	Handbook of Human Computation	Springer	2013
	22.2.	Additional course material				
		No.	Author	Title	Publisher	Year

