

1.	Course Title	Natural language processing	
2.	Code	F18L3W142	
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 / winter / optional	7. ECTS credits	6
8.	Teacher	associate professor SoNja Gievska, associate professor Ivica Dimitrovski	
9.	Course enrollment prerequisites	Машинско учење	
10.	<p>Course program goals (competencies):</p> <p>The goal of the course is for the students to acquire basic theoretical and practical knowledge of algorithms for processing of natural languages. They will acquire knowledge of how language structure and meaning are represented in data structures, how these structures and meaning can be recognized in textual data, and most important of all, how to build algorithms for recognizing true answers among great number of options.</p>		
11.	<p>Course program content:</p> <p>Introduction; Basic text processing; Morphology; Syntax, Semantics and ambiguity in natural languages; Word morphology and finite-state automata; Natural languages modelling; Basic algorithms for Spelling correction; Word stemming; Parsing; Text classification; Machine translation basics; Basic algorithms for extracting information from textual data.</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	Jurafsky & Martin	Speech and Language Processing	Prentice Hall	2009
		2	C.D.Manning & H. Schutze	Foundations of Statistical Language Processing	MIT Press	1999
		3	Manning et al.	Introduction to Information Retrieval	Cambridge University Press	2008
	22.2.	Additional course material				
		No.	Author	Title	Publisher	Year

