

1.	Course Title	Introduction to Pattern Recognition	
2.	Code	F18L3W089	
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 / mandatory	7. ECTS credits 6	
8.	Teacher	full professor Dejan Gjorgjevikj	
9.	Course enrollment prerequisites	МАШИНСКО УЧЕЊЕ	
10.	Course program goals (competencies): To introduce the students to the basic concepts of the methods and techniques of pattern recognition. Upon completion of the course the students will be able to design, implement and effectuate systems for automatic pattern recognition, their performance evaluation and optimization.		
11.	Course program content: Introduction to the problem of pattern recognition. Machine perception. Components of pattern recognition system. Types of features, feature extraction, selection and generation. Bayes classifiers, linear classifiers, non-linear classifiers. Methods for unsupervised learning. Design and implementation of pattern recognition system. Evaluating system performance. Systems for identification and authentication, for medical diagnosis, defence, bioinformatics, recognition of texts, handwriting, fingerprint, biometric data, speech recognition, text classification, etc.		
12.	Learning methods: 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.		
13.	Total available time	180	
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	R.O. Duda, P.E. Hart and D. Stork	Pattern Classification	John Wiley and Sons	2001
		2	Sergios Theodoridis, Konstantinos Koutroumbas	Pattern Recognition	Academic Press	2006
	22.2.	Additional course material				
		No.	Author	Title	Publisher	Year

