

1.	Course title	Knowledge-based systems		
2.	Course code	CSEW527		
3.	Study program	Computer science and engineering		
4.	Unit offering the course	FCSE		
5.	Undergraduate/postgraduate/PhD	Undergraduate		
6.	Year/semester 2/3	7. ECTS: 6		
8.	Teacher(s)	dr. Ljupco Kocarev, dr. Sonja Gievska, dr. Andrea Kulakov, dr. Gjorgji Madzarov		
9.	Course prerequisites	Databases		
10.	Goals (competences): The aim of the course is to provide introductory knowledge on selected topics in the field of knowledge systems. It introduces the basic concepts and architecture of expert systems, knowledge acquisition and knowledge representation, and various aspects related to decision support. Students will learn and acquire a deeper understanding of expert systems and with the provided assignments they will be trained to developed practical skills for designing expert systems.			
11.	Course content: Introduction to expert systems. Architecture of expert systems. Knowledge management. Knowledge acquisition. Knowledge representation. Reasoning under uncertainty. Fuzzy logic. Decision support – analysis, methods, techniques, problems, related disciplines, informational aspects. Rule-based systems. Agent-based systems. Tools and platforms for developing experts systems.			
12.	Teaching methods: lectures with presentations, interactive lectures, lab classes, exercises, team work, invited guest lectures, student projects and homework			
13.	Total available time	180		
14.	Distribution of the available time	30 + 60 + 50 + 40 = 180		
15.	Teaching activities	15.1.	Lectures	30 hours
		15.2.	Training (labs, problem solving), seminar and team work	60 hours
16.	Other activities	16.1.	Project work/ Home work	50 hours
		16.2.	Self study	40 hours
17.	Grading			
	17.1.	Tests		70 points
	17.2.	Seminar work/project (written or oral presentation)		20 points
	17.3.	Active participation		10 points
18.	Grading criteria	to 50 points		5 (five) (F)
		from 61 to 60 points		6 (six) (E)
		from 61 to 70 points		7 (seven) (D)
		from 71 to 80 points		8 (eight) (C)

		from 81 to 90 points	9 (nine) (B)			
		from 91 to 100 points	10 (ten) (A)			
19.	Final exam prerequisites	Completed 15.2 and 16.1				
20.	Course language	Macedonian and English				
21.	Quality assurance methods	Internal evaluations and surveys				
22.	Literature					
	22.1.	Compulsory				
		No.	Authors	Title	Publisher	Year
		1.	Peter Jackson	Introduction To Expert Systems	Addison Wesley	1999
		2.	Efraim Turban, Ramesh Sharda and Dursun Delen	Decision Support and Business Intelligence Systems	Prentice-Hall	2010
	3.	Dietmar Jannach, Markus Zanker, Alexander Felfernig and Gerhard Friedrich	Recommender Systems: An Introduction	Cambridge	2010	
	22.2.	Mandatory				
		No.	Authors	Title	Publisher	Year
		1.				
		2.				
3.						