1.	Course Title	Puzzle based learning
2.	Code	F18L1S120
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 1 / summer / optional	7. ECTS credits 6
8.	Teacher	full professor Vladimir Trajkovikj, associate professor SoNja Filiposka
9.	Course enrollment prerequisites	

10. Course program goals (competencies):
 The student will gain the ability for critical thinking and develop skills necessary to cultivate the thinking outside the box principles. Will be able to place the problem in the correct frame, construct it properly, and solve unstructured problems. Will have enhanced skills necessary for general problem solving that stimulate logical thinking.

11. Course program content:
 Motivation. Course organization, activities setup and orientation. Understanding the problem: inventory, building a model, using a diagram. Reasoning: logical thinking, reasoning forward and backward. Pattern recognition. Enumeration and elimination. Simplifying. What if techniques. Simulation. Optimization. Probability reasoning. Logical reasoning. Geometrical reasoning.

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	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	Zbigniew Michalewicz, Matthew Michalewicz	Puzzle-based Learning: Introduction to critical thinking	Hybrid Publishers	2014
	22.2. Additional course material				
		No.	Author	Title	Publisher	Year