No. 6

Course syllabus for First cycle studies						
1.	**Course title**	Introduction to Artificial Intelligence				
2.	**Code**	MDE7E4				
3.	**Study Program**	Metallurgical Digital Engineering				
4.	**Study program organizer (unit,institute, department, division)**	Faculty of Technology and Metallurgy, University "Ss. Cyril and Methodius" in Skopje				
5.	**Degree (first, second, third cycle)**	First Cycle				
6.	**Academic year / semester**	IV/7	7.	**Number of ECTS**	6	
8.	**Instructors**	Prof. Vesna Ojleska Latkoska, PhD				
9.	**Prerequisites for course enrollment**	Prior to enrolling the course, the student should have knowledge in the field of Programming and Algorithms				
10.	**Objectives of the course syllabus (competences):** Introduction to artificial intelligence. Acquiring skills for autonomously solving practical engineering problems in the field of artificial intelligence. **Acquired skills (competences):**					
11.	**Content of the course:** 1. Introduction to Artificial Intelligence (AI). 2. Intelligent agents and their environment. 3. Problem solving in AI: problem formulation in AI, measure of success of the solution of a problem in AI, notion of blind and heuristic, non-optimal and optimal search, different procedures for blind search, heuristic search procedures, problems with constraints – definition, procedure, examples. 4. Games in AI: notion of optimal decision making in games, notion of optimal strategies in games, function for estimating positions in games, MINIMAX algorithm, multiplayer games, alpha-beta trimming, games of chance. 5. Learning: forms of learning, learning trees, statistical learning methods, application in playing games, application in robotics. 6. Neural networks: structure of neural networks, types of neural networks and their training.					
12.	**Study methods:** Combined way of learning: lectures, supported by presentations, homework and auditory exercises, as well as practical laboratory exercises.					
13.	**Total available time**	180				
14.	**Allocation of available time**	2+2+1				
15.	**Teaching activities**	15.1.	Lectures-theoretical teaching	30		
		15.2.	Exercises (laboratory, practice classes), seminars, teamwork	45		
16.	**Other types of activities**	16.1.	Projects, seminar papers	10		
		16.2.	Individual tasks	10		
		16.3.	Homework and self-learning	85		
17.	**Grading system**					
	17.1.	Exams		5		
	17.2.	Seminar work/project (presentation: written and oral)		10		
	17.3.	Final Exam		85		

18.	**Grading criteria (points/grade)**	Up to 61 points	5 (five) (F)
		From 61 to 69 points	6 (six) (E)
		From 70 to 79 points	7 (seven) (D)
		from 80 to 89 points	8 (eight) (S)
		From 90 to 95 points	9 (nine) (B)
		from 95 to 100 points	10 (ten) (A)
19.	**Prerequisites for taking the final exam**	Regular attendance to the lectures and exercises, as well as successful and timely completion of all laboratory exercises.	
20.	**Language in which lectures are conducted**	Macedonian and English	
21.	**Method for monitoring the quality of lectures**	Internal evaluation and surveys.	

22. **LITERATURE**

22.1. Compulsory literature

No.	Author	Title	Publisher	Year
1.	Stuart Russell, Peter Norvig	Artificial Intelligence A Modern Approach, Fourth Edition	Pearson education limited	2021
2.				
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Елизабета Лазаревска	Предавања по предметот Машинско учење	ФЕИТ, УКИМ	2017
2.	Елизабета Лазаревска	Збирка решени задачи по вештачка интелигенција	УКИМ	2020
3.				