Basic data of the subject	
University:	**University of Applied Sciences in Ferizaj**
Academic unit:	**Faculty of Engineering and Informatics**
Program:	**Applied Informatics**
Title of the subject:	**Artificial Intelligence**
Level:	**Bachelor**
Course Status:	**Obligatory**
Year of studies:	**III, Semester VI**
Number of hours per week:	**3**
Value of Credits - ECTS:	**5**
Time / location:	
Course lecturer:	
Contact details:	
Course Description:	*This course provides an initial study of modern Artificial Intelligence techniques and applications. The course will cover a wide range of conceptual approaches, from combinatorial research to probabilistic reasoning and machine learning, as well as a wide range of applications, from understanding natural language to computer vision.*
Objectives of the course:	*The purpose of Artificial Intelligence (AI) is to design agents who can behave rationally in the real world by sensing their environment, planning their goals, and acting optimally to achieve those goals. Lectures will emphasize no not only the technical concepts but also the history of the ideas behind them.*
Expected learning outcomes:	*Upon completion of this course the student will be able to:* • *Understand the foundations, evolution, and concepts of Artificial Intelligence (AI)* • *Identify and describe the different models in AI, their differences.* • *Familiar with key technologies and standards in the field of AI* • *Describe the motivation, current situation and future trends in AI* • *Apply and practice learning through project forms and / or case studies.*
Prerequisites:	*Knowledge of computer science and mathematics, as well as a general understanding of programming concepts. Students should be familiar with logic and discrete mathematics, as well as have basic knowledge of programming.*

Contribution to the student load (which must correspond with learning outcomes)			
Activity	**Hour**	**Day/Week**	**In total**
Lectures with numerical exercises	3	15	45
Internship			

Contacts with teacher / consultations			
Field exercises			
Midterm, seminars and projects.	3	2	6
Homework			
Self-learning time student (at the library or at home)	3	15	45
Final preparation for the exam	7	2	14
Time spent on evaluation (tests, quiz and final exam)			
Projects and presentations.	3	5	15
Total			**125**

Teaching methodology:	*The course is a combination of lectures, discussions, conversations, numerical and laboratory exercises, assignments are presented by the professor of the subject and the assistant in the laboratory.*
Assessment methods:	*The student can choose to be assessed one of the two forms of assessment, given below:* *1. Form 1: Evaluation with colloquiums and project* *2. Form 2: Evaluation with the final exam.* ***Form 1:*** *In the first form of assessment "Assessment with colloquiums and project" the student is assessed in four activities that are carried out during the lectures:* *1. Colloquium 1 (35%), individual assessment* *2. Colloquium 2 (35%), individual assessment* *3. Class activity (10%), individual assessment* *4. Project (20%), group assessment.* *If the student is not satisfied with the assessment achieved according to form 1, then he can undergo the assessment according to form 2 to obtain a higher assessment.* ***Form 2:*** *Through the final exam, the student can achieve a maximum of 70% of the points from the total of 100 points.* *The rest of the 20% points must be completed by group work in the Project, an activity carried out during the lectures.* *In Colloquium 1, Colloquium 2 and the final exam, the evaluation of the students will be done through an evaluation form, which must be completed individually by the student. The evaluation form will contain 5 tasks through which the student's learning outcomes will be evaluated.* *Activity in the class means the student's engagement in dealing*

	with the issues discussed in the class, during the lectures. *Project (20%), group assessment: it is an activity in which students apply the acquired knowledge in a concrete project. It is carried out in groups of 3 or 4 students who are obliged to carry out the activity, document and present it to the subject professor.* ***Rating:*** *91-100 points – graded 10 (ten)* *81-90 points – graded 9 (nine)* *71-80 points – grade 8 (eight)* *61-70 points – grade 7 (seven)* *51-60 points – grade 6 (six)* *0-50 points – The student repeats the exam*
The ratio of theory and practice:	*70% theory with exercises and 30% laboratory work.*
Literature	
Basic Literature:	1. *Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, 3rd edition, Prentice Hall, 2010.* 2. *David L. Poole and Alan K. Mackworth, Python code for Artificial Intelligence: Foundations of Computational Agents, 2018.*
Additional Literature:	1. *David L. Poole and Alan K. Mackworth, Foundations of Computational Agents 2nd edition, Cambridge University Press, 2017.* 2. *Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, 2rd edition, Prentice Hall, 2005.*
Designed learning plan	
Week:	**Lectures and exercises to be held**
Week one:	*Introduction to the syllabus (chapter 1)* *Introduction* *Artificial Intelligence* *Questions from chap. 1 (literature 1)* *Laboratory exercises from chap. 1 (literature 2)*
Week two:	*Concepts and background (chapter 1)* *Questions from chap. 1 (literature 1)* *Laboratory exercises from chap. 1 (literature 2)*
Week three:	*Agents (Chapter 2)* *Questions from chap. 2 (literature 1)* *Laboratory exercises from chap. 2 (literature 2)*
Week four:	*Research (Chapter 3)* *Introduction* *Questions from chap. 3 (literature 1)*

	Laboratory exercises from chap. 2 (literature 2)
Week five:	*Problem solving through research (chapters 3.1-3.4)* *Uninformed search* *Questions from chap. 3 (literature 1)* *Laboratory exercises from chap. 3 (literature 2)*
Week six:	*Problem solving through search (chapters 3.5-3.6)* *Informed search* *Questions from chap. 3 (literature 1)* *Laboratory exercises from chap. 3 (literature 2)*
Week seven:	*Problem solving through search (Chapter 6)* *Restriction compliance problems* *Questions from chap. 6 (literature 1)* *Laboratory exercises from chap. 4 (literature 2)*
Week eight:	*First Evaluation*
Week nine:	*Problem solving through search (Chapter 6)* *Restriction Completion Problems (cont.)* *Questions from chap. 6 (literature 1)* *Laboratory exercises from chap. 5 (literature 2)*
Week ten:	*Planning (Chapter 10)* *Questions from chap. 10 (literature 1)* *Laboratory exercises from chap. 5 (literature 2)*
Week eleven:	*Opposing search (chapters 5.1-5.4)* *Questions from chap. 5 (literature 1)* *Laboratory exercises from chap. 6 (literature 2)*
Week twelve:	*Stochastic search and stochastic games (chapters 5.5-5.6)* *Learned evaluation functions* *Questions from chap. 5 (literature 1)* *Laboratory exercises from chap. 6 (literature 2)*
Week thirteen:	*Game theory (chapters 17.5, 17.6)* *Questions from chap. 17 (literature 1)* *Laboratory exercises from chap. 7 (literature 2)*
Week fourteen:	*Probability (Chapter 13)* *Questions from chap. 13 (literature 1)* *Laboratory exercises from chap. 8 (literature 2)*
Week fifteen:	*Second Evaluation*
Academic policies and rules of conduct	
Regular attendance of lectures and exercises is necessary, as well as active participation with discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode.	