Course Unit Descriptor

Study Programme: Information Technology - Software Engineering

Course Unit Title: ARTIFICIAL INTELLIGENCE

Course Unit Code: DAS304

Name of Lecturer(s): Professor Ivana Berković, PhD

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): elective

Semester (winter/summer): Summer

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 5

Prerequisites: None

Course Aims:

The main directions of development and achieved results in the field of artificial intelligence. The results are interpreted except for technical applications and in terms of new knowledge about knowledge representation, problem solving, the importance of heuristics, search strategies, the processes of reasoning and learning.

Learning Outcomes:

Students acquire knowledge and skills to work in the field of theory and application of automatic reasoning and logical programming. They are trained to clearly define the problem and how to solve it using the appropriate software tools of artificial intelligence.

Syllabus:

Theory

The notion of artificial intelligence. Solving the problem by searching. Syntax and heuristic strategies for space-state search. Problems of satisfying constraints. Knowledge, reasoning and planning. Logical agents. Conclusion in the first-order logic. Classical planning. Presentation of knowledge. Making decisions. Training. Case-based training. Knowledge in training. Communicating, observing and acting.

Practice

Creating tasks in a computer lab. Students take the practical part of the material in the computer lab by solving mandatory tasks. Demonstration of the work of various artificial intelligence systems and development tools. Through the preparation of seminar work, students apply theoretical knowledge to a concrete practical problem.

Required Reading:

1. Stuart Russell, Peter Norving, Artificial Intelligence - A Modern Approach, Prentice Hall, Pearson Education International, New Jersey, USA, 2011.
2. Ivana Berković, The Elements of Artificial Intelligence Through Examples and Assignments (in Serbian), Technical Faculty "Mihajlo Pupin", Zrenjanin, 2006.
3. Petar Hotomski, Artificial Intelligence Systems (in Serbian), Technical Faculty "Mihajlo Pupin", Zrenjanin, 2006.

Weekly Contact Hours: 4	**Lectures:** 2	**Practical work:** 2

Teaching Methods:

Lectures and students group work.

Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	**Final exam**	points
Active class participation	10	written exam	50
Test I and Test II	20		
Seminar(s)	20		