SYLLABUS

1. Course title:

Intelligent Systems

2. Code:

AR206

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

[AR103] Linear Automatic Control Systems I

7. Class restrictions:

Students of Faculty of Electrical Engineering, Study program "Electrical Engineering and Computer Science"

8. Duration / semester:

1 8

9. Weekly contact hours:

9.1. Lectures:	3
9.2. Seminars:	0
9.3. Laboratory/Practice classes:	2

10. Faculty:

Faculty of Electrical Engineering

11. Department/study program:

Electrical Engineering and Computer Science

12. Lecturer:

Ph.D. Lejla Banjanović-Mehmedović, Assoc. P

13. Lecturer's e-mail:

lejla.mehmedovic@untz.ba

14. Web site:

www.lejla-bm.com

15. Course aims:

The goal is to introduce students to algorithms that enable the creation of intelligent systems. In this sense, students become familiar with classification methods, fuzzy logic, neural networks and genetic algorithms.

16. Learning outcomes:

At the end of the semester/course, successful students will be able to create medium complex intelligent systems in different applicative forms using classification methods, fuzzy interference systems, neural networks and genetic algorithms.

17. Course content:

Intelligence and artificial intelligence. Concepts and techniques of artificial intelligence. Intelligent systems and examples of intelligent systems. Machine Learning. Methods of classification. Clustering methods. Bayes classification. Fuzzy logic and fuzzy interference systems. Examples of fuzzy applications. Artificial Neuron. Artificial Neural Networks. Topology of neural networks (static and dynamic). Neural networks learning algorithms. Examples of neural networks applications. Neuro-fuzzy interference system (ANFIS) and examples. Meta-heuristic algorithms. Evolutionary algorithms. Genetic algorithms and examples.

18. Learning methods:

Lectures, seminar/practice classes, homeworks.

19. Assessment methods:

An exam is based on the continuous assessments, which are performed throughout the semester with the midterm tests and the final exam, which includes the questions related to the entire content of the course, focusing on the areas that are not covered by the midterm test.

20. Assessment components:

The final grade is based on the total sum of points from assignments, written midterm and final exam.
Presence to lectures and practice classes: 5
Midterms tests: 45
Final exam: 50
Summary: 100

21. Required reading list:

Lejla Banjanović-Mehmedović: Intelligenti sistemi, univesity book, Harfograf, Tuzla, 2011.
Engelbrecht A.P., Computational Intelligence, A John Wiley & Sons, Inc. Publication, 2007.
Ng G.W., Intelligent Systems-Fusion, Tracking and Control, Research Studies Press Ltd., 2003.

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session:

04.04.2016.