Óbuda University Bánki Donát Faculty of Mechanical and Safety Engineering	Institute of Mechatronics and Vehicle Engineering

Subject title and code: Full-time study	**Intelligent Systems** *BMXIRE3MNF, BMXIRE3MNF* *ac.* 1 *semester* *year*	**Credits:** *8*
The course is available at:	mechatronical engineering	
Supervised by:	**Instructors:** Lourdes Ruiz S.	
Prerequisite (neptun code):	Fuzzy system	

Weekly number of lessons

Lecture: 1	Group seminar:	Lab: 1	Consultation:

Way of assessment: Exam (Written)

Online consultation *(in case it's required):* **lourdes.ruiz@uni-obuda.hu** *(BBB link)*

Edu. goal: *In this course, students will learn about the basic structure and operation of neural networks, the structure and operation of genetic algorithms, and finally an introduction to real-time, any-time methods.*

Schedule

Education week	Topics
1.	Introduction, Requirements. About Intelligent Systems
2.	Bayes theorems, with examples
3.	Introduction to Neural Networks, neurons, their structure and function
4.	Learning methods for neural networks, supervised and unsupervised learning, Hebb, Kohonen
5.	Types of Neural Networks
6.	Back propagation with examples
7.	**Midterm**
8.	Introductin to genetic algorithms, basic definitions, interpretations, sequence of algorithm operation.
9.	Algebra of genetic algorithms (reproduction, recombinatio, mutation), fitness functions, solving examples
10.	How the Real Time, Any Time systems work, with examples
11.	Markov decision procedure
12.	Rectoral Break
13.	Final Exam
14.	Retake

Mid-semester requirements

Test		Assignment to be submitted		Final Exam	
amount	dates	amount	deadlines	amount	dates
1	20- Oct	1	1- Dec	1	1-Dec, 8 Dec

According to the HKR attendance of group seminars and lab exercises are mandatory.

Other requirements for participation in sessions not covered by the regulations and restrictions on substitutions:

Test		Assignment to be submitted		Final Exam	
maximum points available	minimum score required to pass /test	maximum points available	minimum score required to pass / assignment	maximum points available	minimum score required to pass /lab
30points	15points	30points	15points	40points	20points

Total number of points achievable in semester:	100points

Grading thresholds	**satisfactory** 40 points and above	**average** 55 points and above	**good** 70 points and above	**excellent** 85 points and above
Other evaluation criteria:				
Receive a signature denied entry:	Tasks have not been completed on time			
Required references:	Presentations in Moodle			
Recommended references:				
Quality assurance methods of the subject:				

Things, that are not included, can be found within the regulations of Óbuda University.