Institute of Cyber-physical Systems						
Name of the subject:	Code of the subject:	Credits:	Weekly hours:			
				lec	sem	lab
Intelligent Systems	NIXIROEBNE	3	full-time	1		1
Responsible person for the subject:			Classification:			
Subject lecturer(s): Lectures: Dr. László Kutor, Labs: Dr. Gábor Csiszár						
Prerequisites:						
Way of the assessment:	Test and assignments					

Course description	
Goal:	Introduction to Artificial Intelligence
Course description:	**The aim of the course is**: to introduce the basic concepts of the most recent paradigms in artificial intelligence.

Lecture schedule	
Education week	Topic
1.	
2.	Main paradigms and trends in AI. What is intelligence, how can we measure it.
3.	Basic concepts and components in artificial neural networks
4.	Supervised and self-organising neural networks
5.	Problem solving using search, Genetic algorithms
6.	Knowledge based systems, Fuzzy logic-based systems
7.	Biological and technical sensors, trends in robotics
8.	Embedded and Ambient Assistive Intelligent systems
	Tentative Lab Class Outline
2.	Introduction, Basics of MatLab

3.	Rule-based Navigation
4.	Wavefront Expansion Algorithm
5.	Neural Networks - NN Toolbox
6.	Convolutional Neural Networks - Face Recognition
7.	Genetic Algorithm I - String Completion
8.	Genetic Algorithm II - 2D Problems

Mid-term requirements

Conditions for obtaining a mid-term grade/signature	Lecture dates: February 21, 28, March 6, 13, 20, 27, Apr 3 Lab class dates: February 20, 27, March 5, 12, 19, 26, April 9 Test date: Apr 10. Retake the missed test: Apr. 17.

Assessment schedule

Education week	Topic

Method used to calculate the *mid-term grade* (to be filled out only for subjects with mid-term grades)

Mid-term mark, 50% theory, 50% practice

Points	Grade	
89-100%	excellent	(5)
76-88%	good	(4)
63-75%	fair	(3)
51-62%	sufficient	(2)
0-50%	insufficient	(1)

Type of the replacement

Type of the replacement of written test/mid-term grade/signature	

Type of the exam (to be filled out only for subjects with exams)

Calculation of the exam mark (to be filled only for subjects with exams)	
Final grade calculation methods:	
References	
Obligatory:	**Lab class: Lab class notes**
Recommended:	
Other references:	