

**COURSE DESCRIPTION CARD – SPECIMEN**

Faculty of Mechanical Engineering									
Field of study	BIOMEDICAL ENGINEERING							Degree level and programme type	Master's degree
Specialization/ diploma path								Study profile	
Course name	Artificial intelligence							Course code	IS-FME-00150S
								Course type	obligatory
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	summer
	30			15				No. of ECTS credits	3
Entry requirements	Computer programming								
Course objectives	Teaching of the theoretical and practical knowledge in the artificial intelligence field.								
Course content	Intelligence. Introduction to Artificial Intelligence (AI). Turing's test. The methods of representing knowledge in AI. Forward chaining, backward chaining, Horn clauses and logical deduction as search. Neural networks: types and learning. Nearest neighbour classifier. Bayes classifier. Induction of decision trees. Genetic algorithms. Examples of practical applications								
Teaching methods	Regular lectures: blackboard lectures with presentations and worked examples, discussions; Projects: using the different AI methods to solve given problem								
Assessment method	lecture – written exam; project – project completion, presentation and discussion								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
LO1	Student specifies and describes the methods of artificial intelligence							K_W17	
LO2	Student describes the forward and backward chaining methods							K_W17, K_W18	
LO3	Student specifies and describes the methods of data classification							K_W17, K_W19	
LO4	Student is able to use a proper method of AI to solve given problem							K_U09	
Symbol of learning outcome	Methods of assessing the learning outcomes							Type of tuition during which the outcome is assessed	
LO1	Colloquium							L	

LO2	Colloquium	L	
LO3	Colloquium	L	
LO4	realisation and passing of projects	P	
<b>Student workload (in hours)</b>		<b>No. of hours</b>	
Calculation	lecture attendance	30	
	participation in classes, laboratory classes, etc.	15	
	preparation for classes, laboratory classes, projects	13	
	working on projects, reports, etc	16	
	participation in student-teacher sessions related to the classes/seminar/project	3	
	preparation for and participation in exams/tests	6	
	<b>TOTAL:</b>	<b>83</b>	
<b>Quantitative indicators</b>		<b>HOURS</b>	<b>No. of ECTS credits</b>
Student workload – activities that require direct teacher participation		48	1,5
Student workload – practical activities		43	1,5
Basic references	1. Wilamowski B. M., Irwin J. D. Intelligent systems. CRC/Taylor & Francis, 2011. 2. Russell S. J., Norvig P. ;Artificial intelligence : a modern approach. Boston: Pearson Education, 2010. 3. Cândida F. Gene expression programming : mathematical modelling by an artificial intelligence. Berlin : Springer, 2006.		
Supplementary references	1. Rutkowski L. Metody i techniki sztucznej inteligencji. Wydaw. Naukowe PWN, Warszawa:2009. 2. Wawrzyński P. Podstawy sztucznej inteligencji. Warszawa: Oficyna Wydawnicza Politechniki Warszawskiej, 2014. 3. Osowski S.: Sieci neuronowe do przetwarzania informacji. Warszawa : Oficyna Wydawnicza Politechniki Warszawskiej, 2013		
Organisational unit conducting the course	Institute of Biomedical Engineering	Date of issuing the programme	
Author of the programme	Marcin Derlatka, PhD	26/03/2021	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar