ARTIFICIAL INTELLIGENCE

Faculty of Computer Science				
Study programme:	**Computer Science**		Degree level:	**Engineer's degree full-time programme**
Specialization	**---**		Diploma path:	**2026/2027W - 2026/2027S**
Module name:	**Artificial Intelligence** (Sztuczna inteligencja)			
Module type:	**obligatory**	**Semester: 2**	ECTS:**4**	Module ID:**FCS-00005**
No. of hrs in semester:	Lecture (L) - **30** Classes(C) - **0** Specialization workshop (SW) - **30** Project (P) - **0** Laboratory classes (LC) - **0** Seminar (S) - **0**			
Prerequisites	Algorithms and Data Structures (FCS-00020),			

Aims and objectives:	Discussion of selected concepts in artificial intelligence. Basic methods for searching state space. Methods for knowledge representation using neural networks, evolutionary algorithms and decision trees. The subject also focuses on selected methods for knowledge representation using rough set theory – one of the few computer science methods initiated in Poland that are world-wide known. Presentation of reasoning methods based on propositional and predicate logics. Presenting practical applications of artificial intelligence systems.		
Forms of teching activities::	lecture, specialization workshop,	Assessment:	Evaluation must be relevant to the intended learning outcomes: Evaluation of the reports. Project implementation. Exam.
Module content:	Introduction to artificial intelligence. Discussion of notions about the Alan M. Turing test. Knowledge representation using rough set methods – Polish School of Artificial Intelligence. Basic methods for searching state space. Knowledge representation using neural networks, decision trees, evolutionary algorithms, and logic language. Selected applications of artificial intelligence systems for solving engineering and scientific problems. Design and implementation of computer applications that use artificial intelligence methods.		
Teaching methods:	project method, programming, lecture problem,		

Learning outcomes		
Symbol	Specify min. 4, max. 8 learning outcomes in the following order: knowledge – skills – competence. Each learning outcome must be verifiable	Reference to the programme learning outcomes of education
LO1	knows artificial intelligence methods and their usage in engineering and scientific fields	
LO2	can project and implement applications containing AI methods	
LO3	can plan and perform experiments and simulations focused on assessment of chosen AI methods	
LO4	can assess and correctly choose AI methods for given engineering problems	

No. of learning outcome	Methods of assessing the learning outcome	Type of teaching activities (if more than one) during which the outcome is assessed
LO1	exam	L
LO2	report, project documentation	Sw
LO3	observations during classes, report	Sw
LO4	report	Sw

Student's workload (in hours)			
	1 - Attendance at lectures	None	30
	2 - Attendance at classes	None	30
	3 - Preparation for classes		10
	4 - Homework and report preparation		10
	5 - Performance of projects tasks (with presentation)	None	20
		TOTAL:	**100**

Quantitative indicators			
	Student's workload - activities that require direct teacher participation: (2)+(1)	60	**ECTS**
			2.4
	Student's workload connected with practical classes (2)+(5)+(4)+(3)	70	2.8

Basic references:	1. M. Flasiński, Wstęp do sztucznej inteligencji, PWN, 2019. 2. L. Rutkowski, Metody i techniki sztucznej inteligencji, PWN, 2019. 3. Tools for Learning Artificial Intelligence, web page: http://www.aispace.org/
Further reading	1. Stepaniuk J.: Rough - Granular Computing in Knowledge Discovery and Data Mining, Studies In Computational Intelligence 152, Springer, 2008

Unit:	Department of Information Systems and Computer Networks	Lecturer/ instructor	
Date of issuing the programme:	31st March 2026	Author of the programme:	dr inż. Maciej Kopczyński

L - lecture, C - classes, LC - laboratory classes, P-project, SW - specialization workshop, S - seminar