Bialystok University of Technology									
Field of study	**Computer Science**							**Degree level and programme type**	**Engineer's degree full-time programme**
Specialization/ diploma path	**---**							**Study profile**	academic
Course name	**Artificial Intelligence**							**Course code**	**FCS-00005**
								Course type	obligatory
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	**Semester**	3
	30				30			**No. of ECTS credits**	**6**
Entry requirements	Algorithms and Data Structures (FCS-00020),								
Course 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.								
Course 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	lecture problem, programming, project method,								
Assessment method	Evaluation of the reports. Project implementation. Exam.								

Symbol of learning outcome	**Learning outcomes**	**Reference to the learning outcomes for the field of study**
LO1	knows artificial intelligence methods and their usage in engineering and scientific fields	K_W05 K_W10
LO2	can project and implement applications containing AI methods	K_W05 K_W10 K_U10
LO3	can plan and perform experiments and simulations focused on assessment of chosen AI methods	K_U04
LO4	can assess and correctly choose AI methods for given engineering problems	K_W05 K_U04

Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	exam	L
LO2	report, project documentation	Sw
LO3	observations during classes, report	Sw
LO4	report	Sw

Student workload (in hours)	**No. of hours**
Calculation	
1 - Attendance at lectures - 15x2h	30
2 - Attendance at classes - 15x2h	30
3 - Preparation for classes -	10
4 - Homework and report preparation -	10
5 - Participation in student-teacher sessions -	5
6 - Performance of projects tasks (with presentation) -	50
7 - Preparation for exam -	15
TOTAL:	**150**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	65 (5)+(2)+(1)	2.6
Student workload – practical activities	100 (6)+(4)+(3)+(2)	4.0

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/
Supplementary references	1. Stepaniuk J.: Rough - Granular Computing in Knowledge Discovery and Data Mining, Studies In Computational Intelligence 152, Springer, 2008
Organisational unit conducting the course	Department of Information Systems and Computer Networks
Date of issuing the programme	Feb. 18, 2022
Author of the programme	dr inż. Maciej Kopczyński,prof. dr hab. Jarosław Stepaniuk

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