UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Faculty of Mathematics and Computer Science

Course title: SYSTEMS OF ARTIFICIAL INTELLIGENCE

ECTS credit allocation (and other scores): 5

Semester: autumn

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Natural sciences

Language: English

Number of hours per semester: 30 lectures + 30 classes = 60 hours

Course coordinator/ Department and e-mail: Erasmus coordinator Anna Szczepkowska/ WMiI, anna.szczepkowska@matman.uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES:

The students implement the selected algorithms presented in the lectures. The solutions are presented in the form of reports

LECTURES:

1-3. Introduction to the core issues of Artificial Intelligence; 4-5. Statistical methods in AI; 6-7.Data mining–pattern recognition; 8-9.Neural networks – backpropagation algorithm, Widrow Hoff algorithm; 10.Genetic algorithms – basic operations, early stop method; 11. Estimation of classification effectiveness, overfitting and overlearning problem in AI; 12. Idea of Support Vector Machine; 13. Reinforcement learning; 14.Game theory strategies; 15. Natural language processing – bag of words

Learning purpose:

To present advanced methods of Artificial Intelligence with practical applications

On completion of the study programme the graduate will gain:

Knowledge:

The student has the knowledge about the advanced methods of AI

Skills:

The student is able to select the proper AI methods for particular tasks

Social Competencies:

The student has ability to work individually and in the group

Basic literature:

1) Piotr Kulczycki, Józef Korbicz, Janusz Kacprzyk, Automatyka, robotyka i przetwarzanie informacji , wyd. Wydawnictwo Naukowe PWN, 2020 ; 2) Russell Stuart ,Norvig Peter, Artificial Intelligence: A Modern Approach, Global Edition, wyd. inne, 2016

Supplementary literature:

1) Artiemjew, P., Wybrane paradygmaty sztucznej inteligencji, wyd. PJWSTK , 2015

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 2,17 ECTS points,

Student's independent work: 2,83 ECTS points,