Opis **zajęć (sylabus)**

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| Unit name: | | Foundations of Artificial Intelligence | | | | | | | **ECTS** | | **2** |
| Name in Polish: | | Podstawy Sztucznej Inteligencji | | | | | | | | | |
| Field: | | **Informatics and Econometrics** | | | | | | | | | |
|  | |  | | | | | | | | | |
| Language lectured: | | English | | | | Level: | | Studiies of II degree | | | |
| Form od studies: | Full-time | Status: | profile-like | obligatory | | Semester: 1 | | winter semester | | | |
|  |  | Academic year (from which unit commences): | | | | 2019/2020 | Number: | **ZIM-IE-BDA-2S-01Z-7** | | | |
|  | | | | | | | | | | | |
| Unit coordinator: | |  | | | | | | | | | |
| Unit demonstrator: | |  | | | | | | | | | |
| Running Department : | |  | | | | | | | | | |
| Ordering Department: | |  | | | | | | | | | |
| Aims and unit description: | | Main unit aims:   1. Getting basic knowledge on mathematical logic and its use in A.I. 2. Getting basic knowledge on declarative programming (in PROLOG).  Topics:  1. Inference rules i deduction. 2. Propositional logic and predicate logic. 3. Models logical consequences and satisfiability. 4. Refutation, Horn Clauses and SLD resolution. 5. Prolog programming: declarative paradigm. 6. Searching cyclic and acyclic graphs in PROLOG. 7. Applications of PROLOG in A.I. | | | | | | | | | |
|  | | 1. lecture: **15** hours. 2. labs: **15** hours | | | | | | | | | |
| Teaching methods: | | Lectures and labs. | | | | | | | | | |
| Prerequisites: | | Basic knowledge of introduction to mathematics. | | | | | | | | | |
| Learning effects: | | **Knowledge:**  1 - Student has extended and ordered knowledge on algorithms and their complexities and on programming paradigm as well as on A.I.  2 – Student has extended knowledge on implementation of programming languages and A.I. | | | **Skills:**  1 – Student can exploit variety of analytic, simulation and expert-like methods to formulate and solve practical problems in industry and economy. | | | | | **Competences:**  1 - Student can cooperate and work within the group by undertaking different roles. | |
| Verification of learning effects: | | Project. | | | | | | | | | |
| Documentation of realizing learning effects: | | Project in electronic version. | | | | | | | | | |
| Components of final assessment: | | **Project 100%** | | | | | | | | | |
| Teaching room: | | Lecture –lecturing aula, labs and tuts – laboratory room. | | | | | | | | | |
| Literature:   * M .Ben Ari, „Mathematical Logic for Computer Science”, Springer, London, 2012.   Complementary literature:   * L. Sterling I E. Shapiro, „The Art. of Prolog, Advanced Programming Techniques”, MIT, 1986. | | | | | | | | | | | |
| Remarks:  Minimal amount of points required to pass the unit: minimum 50% of project. | | | | | | | | | | | |

Quantitative unit indicators:

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| Final amount of work: | **60h** |
| Final amount of work with direct contact with the teacher(s): | **1 ECTS** |

Compatibility table of specialization learing effects with the unit effect:

|  |  |  |  |
| --- | --- | --- | --- |
| Cathegory of the effect | Effects of learning: | Relation to the effects of study programs and for the specialization: | Impact of unit on specialization effect\*) |
| Knowledge 1 | Student has extended and ordered knowledge on algorithms and their complexities and on programming paradigm as well as on A.I. | K\_W06 / P7S\_WG | 3 |
| Knowledge 2 | Student has extended knowledge on implementation of programming languages and A.I. | K\_W08 / P7S\_WG | 3 |
| Skills 1 | Student can exploit variety of analytic, simulation and expert-like methods to formulate and solve practical problems in industry and economy. | K\_U12 / P7S\_UW | 1 |
| Comeptence 1 | Student can cooperate and work within the group by undertaking different roles | K\_K02/ P7S\_UU | 1 |

\*)

3 – advanced,

2 – substantial,

1 – basic,