#### card of course

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| Subject name | Practical application of artificial intelligence tools |

1. The placement of the subject in the study system

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| 1.1. Field of study | FIR, INF, ZAZ |
| 1.2. Form and path of study | Full-time/Part-time |
| 1.3. Level of education | First-cycle studies |
| 1.4. Study profile | Practical |

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| 1. 5. Specialty | - |
| 1.6. Subject Coordinator | Dr inż. Róża Dzierżak; mgr Joachim Smaga |

2. General characteristics of the subject

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| --- | --- |
| 2.1. Belonging to a subject group | Optional/practical |
| 2.2. Number of ECTS | 1 |
| 2.3. Language of lectures | Polish |
| 2.4. Semesters in which the subject is taught | II |
| 2.5.Criteria for selecting course participants | - |

1. Learning outcomes and course delivery
   1. Subject Objectives

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| No. | Subject Objectives |
|
| C1 | To introduce students to basic concepts and methods in the field of artificial intelligence. |
| C2 | To introduce students to basic artificial intelligence techniques. |
| C3 | To familiarize students with the possibilities of using AI in various fields, with particular emphasis on the field of study. |
| C4 | Acquiring knowledge and skills regarding the possibilities of using artificial intelligence in future professional and scientific work and everyday life. |

* 1. Subject-specific learning outcomes, divided into knowledge , skills and competences , with reference to the directional learning outcomes

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| --- | --- | --- | --- | --- | --- | --- |
| No. | Description of subject  learning outcomes | Reference to  directional effects  learning (symbols) | Method of implementation (mark "X") | | | |
| ST | | NST | |
| Classes at the University | Activities on  the platform | Classes at the University | Activities on  the platform |
| After passing the course, the student knows and understands **the knowledge** | | | | | | |
| W1 | basic concepts, issues and techniques in the field of AI | FIR\_W08  INF\_W10  Z1\_W08 | X |  | X |  |
| W2 | understands what AI is, what its applications are, and what its limitations and risks are | X |  | X |  |
| W3 | knows artificial intelligence techniques in terms of analyzing, processing and creating natural language content | X |  | X |  |
| W4 | knows artificial intelligence techniques in terms of image analysis, processing and generation | X |  | X |  |
| After passing the course, the student is **able** to: | | | | | | |
| U1 | define the concept of artificial intelligence and other issues related to it | FIR\_U02  INF\_U12  Z1\_U05 | X |  | X |  |
| U2 | indicate the basic methods and technologies of artificial intelligence | X |  | X |  |
| U3 | discuss contemporary challenges facing AI practitioners, for example those related to privacy, security, and the importance of an ethical approach in the design and use of AI technologies | X |  | X |  |
| U4 | use artificial intelligence for scientific purposes, related to future professional work and in everyday life | X |  | X |  |
| After completing the course, the student is ready to take part in **social competences.** | | | | | | |
| K1 | the use of artificial intelligence in various fields of science, future professional work and everyday life | FIR\_K03  INF\_K02  Z1\_K02 | X |  | X |  |
| K2 | analysis and discussion of selected aspects related to the development, applications and impact of artificial intelligence on society | X |  | X |  |
| K3 | aware of the role and risks of using artificial intelligence |  |  |  |  |

* 1. Forms of teaching and their number of hours – Full-time studies (ST), Part-time studies (NST)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Path | Lecture | Exercises | Design | Workshop | Laboratory | Seminar | Lecturer | Classes conducted using distance learning methods and techniques in the form of …………. | Other | **ECTS points** |
| **ST** |  |  |  |  | 15 |  |  |  |  | 1 |
| **NST** |  |  |  |  | 15 |  |  |  |  | 1 |

* 1. Content of education (separately for each form of classes: (W, ĆW, PROJ, WAR, LAB, LEK, OTHER). Please mark (X) how the given content will be implemented (classes at the university or classes on the e-learning platform conducted using distance learning methods and techniques)

TYPE OF CLASS: LABORATORY

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| --- | --- | --- | --- | --- | --- | --- |
| No. | Content of the course | Reference to  the effects in question  learning | Method of implementation (mark "X") | | | |
| ST | | NST | |
| **Classes at the University** | **Activities on  the platform** | **Classes at the University** | **Activities on  the platform** |
| 1. | Introduction to artificial intelligence – basic terminology, concepts. | W1, U1 | X |  | X |  |
| 2. | Basic methods and technologies of artificial intelligence. | W1, W2, U2 | X |  | X |  |
| 3. | Getting to know ChatGPT, Gemini, Copilot | W1, W3, U4 | X |  |  |  |
| 4. | Selected applications of artificial intelligence. | W3, W4, U3, U4, K1, K2 | X |  | X |  |
| 5. | Prompt writing training. | W1, W3, U4 | X |  |  |  |
| 6. | Selected aspects related to the development, applications, threats and impact of artificial intelligence on society. | W3, W4, U3, U4, K1, K2 | X |  | X |  |
| 7. | Directions of development of artificial intelligence. | W3, W4, U3, U4, K1, K2, K3 | X |  | X |  |
| 8. | Summary of classes and discussion of grades. |  | X |  | X |  |

3.5. Methods of verifying learning outcomes (indicating and describing methods of conducting classes and verifying the achievement of learning outcomes, e.g. debate, case study, preparation and defense of a project, complex multimedia presentation, solving problem-solving tasks, situation simulations, study visit, simulation games + description of a given method):

|  |  |  |  |
| --- | --- | --- | --- |
| Subject Effects | Teaching methods | Methods of verifying learning outcomes | Documentation methods |
| KNOWLEDGE | | | |
| W1-W4 | A practical laboratory for independent use, design and creation of artificial intelligence | A project that involves solving a real problem using artificial intelligence tools. | Description document archived on the platform. |
| SKILLS | | | |
| U1-U4 | A practical laboratory for independent use, design and creation of artificial intelligence | A project that involves solving a real problem using artificial intelligence tools. | Description document archived on the platform. |
| SOCIAL COMPETENCES | | | |
| K1-K3 | A practical laboratory for independent use, design and creation of artificial intelligence | A project that involves solving a real problem using artificial intelligence tools. | Description document archived on the platform. |

3.6. Assessment criteria for the achieved learning outcomes

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| --- | --- | --- | --- | --- | --- |
| Learning effect | For a grade of 3 or "pass."  the student knows and understands/is able to/is ready to | For a grade of 3.5, the student knows and understands/is able to/is ready to | For a grade of 4, the student knows and understands/is able to/is ready to | For a grade of 4.5, the student knows and understands/is able to/is ready to | For a grade of 5, the student knows and understands/is able to/is ready to |
| W | 51-60% of knowledge indicated in learning outcomes | 61-70% of knowledge indicated in learning outcomes | 71-80% of knowledge indicated in learning outcomes | 81-90% of knowledge indicated in learning outcomes | 91-100% of knowledge indicated in learning outcomes |
| U | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |
| K | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |

3.7. Literature

**Basic**

1. Boden, Margaret Ann. Sztuczna inteligencja : jej natura i przyszłość /Margaret A. Boden ; tł. Tomasz Sieczkowski ; red. nauk. Piotr Fulmański. Łódź : Wydawnictwo Uniwersytetu Łódzkiego, 2020
2. Kurp, Feliks. Sztuczna inteligencja od podstaw / Feliks Kurp. Gliwice : Helion, 2023
3. Ćwiertniak, Ryszard. Sztuczna inteligencja w organizacji : innowacje biznesowe w praktyce / Ryszard Ćwiertniak. Gliwice : Helion, 2024

**Supplementary**

1. Przegalińska-Skierowska, Aleksandra. AI w strategii : rewolucja sztucznej inteligencji w zarządzaniu / Aleksandra Przegalińska, Dariusz Jemielniak ; przekł. Wojciech Pędzich. Kraków: MT biznes, 2022
2. Diamandis, Peter H. Przyszłość jest bliżej, niż nam się wydaje : jak konwergencja technologii radykalnie zmieni biznes, przemysł i nasze życie / Peter H. Diamandis oraz Steven Kotler ; przekł. Piotr Cypryański. Warszawa : Poltext, 2021

4. Student workload - ECTS points balance

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| --- | --- | --- |
| **Types of student activity** | **Student Load** | |
| **ST** | **NST** |
| **Classes requiring direct contact between the student and the academic teacher at the university premises** | **15** | **15** |
| Classes included in the study plan | 15 | 15 |
| Teaching consultations (min. 10% of hours allocated for each form of classes) | 2 | 2 |
| **Student's own work** | **10** | **10** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 5 | 5 |
| Preparation for passing classes | 5 | 5 |
| **TOTAL STUDENT HOURLY LOAD** | **25** | **25** |
| **Number of ECTS points** | **1** | **1** |

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| --- | --- |
| Last change date | 30/09/2024 |
| The changes were introduced | INF Education Quality Team |
| The changes were approved | Arkadiusz Gwarda, M.A. |