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MODULE DESCRIPTION CARD – SYLLABUS

This module is a part of the Intensive International Education Programs in the field of the ICT organised at Poznan University of Technology as part of the „IMPACT – Innowacyjne Międzynarodowe Programy w AI, Cyberbezpieczeństwie i Teleinformatyce" project implemented SPINAKER Program of the National Agency for Academic Exchange, financed by the European Social Development Fund 2021–2027 (ESDF).

Module name:	Number of hours:	Lecturer:
Introduction to Artificial Intelligence	10	Jedrzej Potoniec, PhD

Module Descriptions:

The course presents fundamental topics and algorithms of contemporary artificial intelligence. The most influential methods and techniques are discussed, along with their areas of applications. Whenever applicable, pseudocode and a sample run of an algorithm is presented, to facilitate detailed understanding of the discussed methods. The course covers the topics of solving problems by searching, deductive reasoning and machine learning.

Purpose of the support under Module:

The overall objective of the Innovative International Education Program in ICT within the IMPACT project is to raise the competencies of international students in key digital technologies and to support personalized, flexible, and modern education aligned with current global needs in the area of ICT.

The specific objective of the module is to provide competencies and promote activities carried out at the Poznań University of Technology in the area of artificial intelligence, particularly regarding fundamental methods, techniques and approaches used in contemporary artificial intelligence.

Method of support under Module:

Support within the module is provided with the participation of the instructor and divided into the following elements:

- 6-week self-study program using teaching materials provided by the instructor on the e-learning platform;
- 6 weeks of support from the instructor in the form of online consultations using tools that enable meetings to be held;
- a test to verify the acquisition of competences.

Module-related learning outcomes:

Descriptions of the new competences:

Fundamental algorithms and techniques used in contemporary artificial intelligence.

Knowledge:

1. The student knows what a search problem is and what algorithms can be used to solve it.
2. The student knows what deductive reasoning is and what algorithms can be used for it.
3. The student knows the basics of machine learning and its subtypes.

Skills:

1. The student can formalize a problem as a search problem and select an algorithm to solve it.
2. The student can formalize a problem as a logical knowledge base and select an algorithm to reason with it.
3. The student knows the requirements for using machine learning and can cast a problem in terms of machine learning.

Social competences:

1. The student is aware of the very fast progress in artificial intelligence, and understands the knowledge requires continious updating.

Criteria for verifying learning outcomes

Method of verification/validation of learning outcomes

Workload

25 h (including work with teaching materials provided by the lecturer, consultation, and the student's own work) – 1 ECTS point

Level of the European Qualifications Framework