POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Problem classes II: artificial intelligence [S1SI1E>PRAC2SI]

Course

Field of study	Year/Semester
Artificial Intelligence	3/6

Area of study (specialization)	Profile of study
–	general academic

Level of study	Course offered in
first-cycle	English

Form of study	Requirements
full-time	elective

Number of hours

Lecture	Laboratory classes	Other
0	0	0

Tutorials	Projects/seminars	
0	30	

Number of credit points

2,00

Coordinators	Lecturers
dr hab. inż. Miłosz Kadziński prof. PP milosz.kadzinski@put.poznan.pl	

Prerequisites

Extensive knowledge of the fundamental problems of artificial intelligence, and methods of solving them, including advanced methods presented in the courses preceding the project. Ability to use the above methods to solve problems of artificial intelligence of practical importance, in particular, to model real problems. Knowledge of popular tools and libraries containing implementations of artificial intelligence algorithms.

Course objective

The project aims to acquire knowledge and practical skills by the student through teamwork (in a team of at least two students, under the supervision of a lecturer) in a real-life application study using artificial intelligence methods and tools.

Course-related learning outcomes

Knowledge:
K1st_W3: has a well-grounded knowledge of fundamental computer science problems within the scope of artificial intelligence
K1st_W5: has a basic knowledge of key directions and the most important successes of artificial

intelligence, making use of the achievements of other scientific disciplines and providing solutions with a high practical impact
K1st_W7: has a basic knowledge of life cycle and processes taking place in computer and, in particular, AI-based software

Skills:
K1st_U3: can formulate and solve complex problems within the scope of computer science and, in particular, artificial intelligence, by applying appropriately selected methods
K1st_U4: can efficiently plan and carry out experiments, including computer measurements and simulations, interpret the obtained results and draw conclusions based on the experimental outcomes
K1st_U6: has necessary training for working in a business environment, including an industrial environment, and knows the safety rules related to the work of a computer scientist - a specialist in the field of A
K1st_U9: can adapt the existing algorithms as well as formulate and implement the novel algorithms, including the algorithms typical for different streams of AI
K1st_U10: can retrieve, analyze and transform different types of data, and carry out data synthesis to knowledge and conclusions useful for solving a variety of artificial intelligence problems
K1st_U11: can adapt and make use of the models of intelligent behavior as well as computer tools simulating such a behavior
K1st_U14: can employ information and communication tools at different stages of carrying out the IT projects, including elaborating a well-document problem study, giving an oral presentation, communicating through specialized terms and discussing diverse opinions in both technical and non-specialized environments
K1st_U15: can plan and organize work when carrying out the engineering tasks

Social competences:
K1st_K2: is aware of the importance of scientific knowledge and research related to AI in solving practical problems which are essential for the functioning of individuals, firms, organizations as well as the entire society
K1st_K4: can work with others and cooperate in a group, while taking different roles and appropriately defining the priorities for either realizing the self-defined tasks or attaining the targets specified by others
K1st_K5: can think and act in an enterprising way, finding the commercial application for the created AI-based systems, having in mind the economic benefits as well as legal and social issues

Methods for verifying learning outcomes and assessment criteria
Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
The result of the project must be a fully or a partially completed product (e.g. application, code fragment). Optionally, in a justified case, it is possible to present a report on a research and development project. For the evaluation of the project, the supervisor and the team of students establish the milestones that must be achieved during this time. At the end of the semester, the tutor verifies their achievement and summarizes the progress of the team of students.

Programme content

The course concerns the implementation of a team project to solve a selected problem using artificial intelligence methods.

Course topics

The scope and the tasks set for the student as the research and development project depend on the specificity of the problem that the team of students is trying to solve together with the tutor. However, the project must concern problems in which the artificial intelligence methods are used to develop a solution that has the potential to be implemented in practice.

Teaching methods

Individual meetings of students with the supervisor of the research and development project, during which the students present the developed solutions, acquire knowledge through a joint analysis of the

literature and research works related to the project and solve the problems encountered together with the supervisor. Teamwork. Case study.

Bibliography

Basic
Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00