POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Preparation for scientific research [S1SI1E>BNAUK]

Course

Field of study
Artificial Intelligence

Year/Semester
4/7

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
english

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
8

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

dr hab. inż. Miłosz Kadziński prof. PP
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Lecturers

Prerequisites

Students should have knowledge, skills, and competencies learned during the previous years of study, concerning basic domains of computer sciences and, in particular, artificial intelligence. Moreover, they should follow current trends in artificial intelligence and related disciplines. The students should understand the needs to extend their knowledge and competences. In terms of social competencies, the student must present attitudes such as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, respect for other people.

Course objective

The course aims to provide the students basic knowledge on the current trends and slected research results in artificial intelligence, cybersecurity, and computer science (in particular, software engineering) and to prepare students for an active participation in scientific projects realized at Poznan University of Technology. The course emphasizes the need for further education during second-cycle studies.

Course-related learning outcomes

Knowledge:
K1st_W3: has a well-grounded knowledge of fundamental computer science problems within the scope

of artificial intelligence as well as its relations with cybersecurity and software engineering
K1st_W9: knows current trends in cybersecurity and AI-based systems

Skills:
K1st_U1: is able to collect information from the appropriate sources of different natures and comprehensively justify the formulated opinions
K1st_U16: can plan and carry out life-long learning, and is aware of the possibilities of further studies (with the emphasis on Master programs)

Social competences:
K1st_K1: understands that knowledge and skills quickly become outdated in AI, and perceives the need for constant additional training and raising one's qualifications
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_K6: is aware of the social role of a graduate of the university of technology and understands the need to inform society, in an intelligible way, on the engineering activities, achievements of AI, and other aspects related to the work of a computer scientist - a specialist in the field of AI

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Seminars: The course is strongly based on interactive seminars with students. The verification procedures rely on the presence of students and evaluation of their activities during seminars, taking part in a discussion.

Programme content

The course covers the following issues: current trends and major achievements of researchers working at Poznan University of Technology concerning artificial intelligence, decision support systems, optimization, pattern recognition and data analysis, as well as intersection between AI and cybersecurity or software engineering; elements of scientific research methodology in the field of artificial intelligence; presentation of the Master programs on artificial intelligence, cybersecurity, and software engineering that are offerred in English as the part of second-cycle studies at Poznan University of Technology.

Teaching methods

Seminars: slide show presentations on different sub-fields of AI, cybersecurity, and software engineering; interactive discussions with students, Q&A sessions.

Bibliography

Basic:
P. Stone et al., Artificial Intelligence and Life in 2030. One Hundred Year Study on Artificial Intelligence. Stanford, 2016.

Additional:
M. Heller. How to be learned? (In Polish), Copernicus Center Press, 2017.

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	8	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	17	0,50