Artificial intelligence 2 – EN

During this course, the students will get familiar with some current trends and results of artificial intelligence. Moreover, students will individually review a selected topic or solve a particular problem.

Examples taken from chemical engineering, architecture, traffic, agricultural and other industrial fields will be considered to illustrate selected solutions methods based on different representation techniques, where optimality plays a key role. Problems are deeply investigated together with potential heuristics to overcome the difficulties as well as search space reduction algorithms are presented. Static and dynamically evolving, for example evacuation planning, examples will also be considered.

Within a framework with IBM students will use Watson computer system.

- Process network synthesis and optimization.
- Fuzzy critical path.
- Multi period production and optimization.
- Neural nets.
- Feature representation and detection.
- Natural language processing.
- Image processing.
- IBM Watson.
- Chemical engineering problems.
- Project management problems.
- Software tools.
- Urban traffic problems.
- Agricultural problems.
- Architect problems.
- Selected topics.

Attending is required according to the university's attendance code.

There will be 1 Test by the students. All tests are in writing. Tests are evaluated by points. Tests covers all or some of the main topics of the Course. No external aids are allowed to be used. In case the test is missed it is calculated as 0 points. There is only 1 retake option for the test. In case the performance is below 50%, the test is said to be failed, the Student cannot enter the Exam Period, ie it is grounds for failing the course.

Students will give presentations on preliminary discussed topics. Missed or unsatisfactory presentations will be grounds for failing the class.

The exam has two main parts that will test the Students' knowledge and problem-solving skills on all preceding lectures of the Course as well as the presentations held by each and every student. The first written part is approximately 30 mins. It covers all or some of the main topics of the Course. In case the performance is below 50%, the exam is said to be failed. In case the achievement is above 50%, then the oral part of the exam is entered automatically.

Evaluation: 0-50%:1 / 51-70%: 2 / 71-80%: 3 / 81-90%:4 / above 91%: 5

Stuart Russell, Peter Norvig: Artificial Intelligence. A Modern Approach. Prentice Hall. 2003. ISBN 0137903952. (In Hungarian: Mesterséges intelligencia modern megközelítésben. Panem. 2005. ISBN 963 545 411 2.)

Ba Vindra K. Ahuja, Thomas L. Magnant and James B. Orlin: Network Flows, Theory, Algorithms, and Applications. Prentice Hall, 1993. ISBN 0-13-617549-X.
Ercsey Zsolt és Achs Ágnes, ARTIFICIAL INTELLIGENCE MESTERSÉGES INTELLIGENCIA Egyetemi oktatási segédlet, ISBN 978-963-429-195-4.
Storcz Tamás: Intelligens rendszerek. 2020. ISBN 978-963-429-557-0.
Selected journal articles.