6 th Semester **ARTIFICIAL INTELLIGENCE** (ΠΛ0701) - AI

Coordinator: Refanidis Ioannis Semester: 6 th (Spring) |

Course type: Compulsory AI | Weekly hours: 3 | ECTS: 5

Instructors: Refanidis Ioannis

General competences Artificial Intelligence is an area of computer science with an increasing number of applications in the recent years. The aim of the course is to present the principles of the area, on which all modern applications are based. By the end of the course the student will be able to: (a) model problems and use suitable search algorithms to solve them; (b) represent knowledge and reason over it; (c) model and solve planning/scheduling problems.

Course content Introduction to Artificial Intelligence. Problem representation - Search tree. Search algorithms. Blind search and informed search. Constraint satisfaction problems. Arc consistency. Constraint propagation. Adversary games. Minimax search and alpha-beta pruning. Games with chance. Knowledge and reasoning. Propositional logic. First order logic. Proof procedures and the Resolution Principle. Rule Based Systems. Planning. STRIPS representation. Progression and Regression. Partial order planning. Temporal planning and planning with resources.

Assessment Written examination 80% Homework 20%

Course bibliography (One of the following): Artificial Intelligence, a modern approach. STUART RUSSELL and PETER NORVIG, 3rd edition, Prentice Hall. 13909 ΤΕΧΝΗΤΗ ΝΟΗΜΟΣΥΝΗ: ΜΙΑ ΣΥΓΧΡΟΝΗ ΠΡΟΣΕΓΓΙΣΗ, Τύπος: Σύγγραμμα, STUART RUSSELL, PETER NORVIG, 2005, ΕΚΔΟΣΕΙΣ ΚΛΕΙΔΑΡΙΘΜΟΣ ΕΠΕ, ISBN: 960-209-873-2 94700120 ΤΕΧΝΗΤΗ ΝΟΗΜΟΣΥΝΗ, Τύπος: Σύγγραμμα, ΒΛΑΧΑΒΑΣ Ι.,ΚΕΦΑΛΑΣ Π.,ΒΑΣΙΛΕΙΑΔΗΣ Ν.,ΚΟΚΚΟΡΑΣ Φ.,ΣΑΚΕΛΛΑΡΙΟΥ Η., 2020, ΕΚΔΟΣΕΙΣ ΠΑΝ/ΜΙΟΥ ΜΑΚΕΔΟΝΙΑΣ, ISBN: 978-618-5196-44-8

Additional material Lecture slides. Exemplary solved exercises. Course site (<http://compus.uom.gr/INF184/index.php>)