

Academic Year: ( 2023 / 2024 )

Review date: 22/05/2023 11:59:58

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: CARBO RUBIERA, JAVIER IGNACIO

Type: Electives ECTS Credits : 3.0

Year : 1 Semester : 1

**REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)**

Programming

**OBJECTIVES**

The goal consists of providing to the students the ability of acquiring and expressing the knowledge of a problem domain. The resulting transparent and explicable knowledge will take the form of an ontology and a set of rules to be applied in a neurosymbolic approach (an hybrid AI that would be able to compare, explain and validate an automated solution obtained by machine learning).

**DESCRIPTION OF CONTENTS: PROGRAMME**

- 1 Introduction: the symbolic approach to the AI
- 2 The other process of knowledge acquisition
- 3 Conceptual knowledge: ontologies y knowledge trees
4. Reasoning knowledge: production rules.

**LEARNING ACTIVITIES AND METHODOLOGY**

Learning activities:

- \* Theoretical lectures: Mainly oriented to the acquisition of the theoretical knowledge of the subject' competences
- \* Practical lectures: Mainly oriented to problem solving.
- \* Partial exams: Oriented to prove the understanding of theoretical lectures
- \* Practical teamwork: Oriented to prove the understanding of practical lectures, and towards the competences related to work in teams in a practical case.
- organization and written communication (in written reports)
- \* (online or onsite) Personal Tutoring (asked by email in advance)

Methodology:

- \* Oral lectures in classroom
- \* Teamwork
- \* Problem solving

**ASSESSMENT SYSTEM**

<b>% end-of-term-examination/test:</b>	33
<b>% of continuous assessment (assigments, laboratory, practicals...):</b>	67

The final score of both the ordinary and the extraordinary evaluations is computed from combining the scores obtained by the students both in their practical teamwork and the final exam. The computation takes the form of a weighted sum with the following weights:

3 Practical teamwork: 66.66% (33.3 each one) in weeks 3, 5 and 7.

Final exam: 33.33%

Minimal grade in any part: None

**BASIC BIBLIOGRAPHY**

- David M Bourg, Glenn Seemann AI for Game Developers, O'Reilly Media, Inc., 2004
- Han Liu, Alexander Gegov, Mihaela Cocea Rule Based Systems for Big Data, Springer, 2015
- Russell, S., Norvig, P. Artificial Intelligence, Prentice Hall, 2020