

## **COURSE INFORMATION**

### **KNOWLEDGE REPRESENTATION**

Code number: 606010236  
Degree in Computer Science Engineering  
Department: Information Technologies  
Academic Year: 2017-2018  
Compulsory course. 3<sup>rd</sup> year  
Second semester: 4 hours a week, 2 days a week  
6 ECTS  
**Link to Spanish counterpart:** <http://www.uhu.es/etsi/guia-de-assignatura/?codigo=606010236>

## **TEACHING STAFF**

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Office hours:  
    First Semester: To be defined later  
    Second Semester: To be defined later

## **PROGRAMME/SYLLABUS**

### **1. DESCRIPTION**

Being able to represent information in an appropriate way is essential to solve a multitude of problems. This subject can be useful to students of any degree such as business administration, sociology, tourism, psychology, education and any degree in humanities or any degree in engineering.

### **2. PREREQUISITES**

No pre-requisites are required to take this course.

### **3. OBJECTIVES/LEARNING OUTCOMES**

- To represent knowledge symbolically in a form suitable for automated reasoning.
- Combines formal algorithmic analysis with a description of the most recent applications.
- Acquire basic knowledge on computational logic.
- Acquire programming knowledge in Prolog.

### **4. COMPETENCES**

SPECIFIC COMPETENCES: CE5-C

BASIC, GENERAL OR TRANSVERSAL COMPETENCES: CB4, CG0, G03, G04, G06, G07, G08, G09, T01, T02

## **5. TEACHING METHODOLOGY**

- Participatory magisterial class.
- Development of practices in specialized laboratories or computer classrooms in small groups.
- Problem solving and practical exercises.
- Individual or collective tutoring. Direct teacher-student interaction.
- Presentation, Implementation, tutoring and presentation of works.
- Conferences and seminars.
- Evaluations and exams.

## **6. CONTENTS**

Topic 1. Introduction

1.1 Basic concepts.

1.2 Systems based on knowledge.

1.3 Reasoning.

Topic 2: Introduction to logic programming with Prolog.

Topic 3: Knowledge representation techniques with logical programming and lists.

Topic 4: Knowledge representation techniques with logic programming and trees.

Topic 5: Knowledge representation techniques with logic programming and graphs.

Topic 6: Other techniques of representation of knowledge.

## **7. BIBLIOGRAPHY**

- Prolog Programming for Artificial Intelligence, Ivan Bratko, Addison Wesley; 3rd edition (2000)

- Knowledge Representation and Reasoning, Ron Brachman and Hector Levesque

<http://www.sciencedirect.com/science/book/9781558609327>

## **8. ASSESSMENT**

- Examination of theory / problems, 50%
- Defense of Written Works and Reports, 20%
- Practice exam, 30%