Management of multimedia information in internet

Academic Year: (2019 / 2020) **Review date: 29-04-2019**

Department assigned to the subject: Department of Telematic Engineering

Coordinating teacher: ARIAS FISTEUS, JESUS

Type: Electives ECTS Credits : 6.0

Year : 1 Semester : 1

STUDENTS ARE EXPECTED TO HAVE COMPLETED

It is expected that students who take the course have a basic knowledge of algebra, probability theory and statistics, as well as computer programming.

COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

After having taken the course, students should have acquired skills of three main types:

- Reading, interpretation and understanding of technical and scientific documents in any of the official languages of the course.
- Application and adaptation of the techniques described in the course to solving specific problems, being able to evaluate and compare different alternatives and make technical decisions to propose the most appropriate solution at all times.
- Reasoning about the decisions to justify and present them to an audience.

DESCRIPTION OF CONTENTS: PROGRAMME

This course is organized into the following modules:

1. Computational complexity theory.
2. Semantic Web and linked data.
3. Natural language processing.
   3.1. Statistical techniques.
   3.2. Techniques based on artificial neural networks.
4. Big data technologies.

LEARNING ACTIVITIES AND METHODOLOGY

The course will be tought with:

- Theoretical and practical sessions in which theoretical concepts are explained, with frequent examples and exercises.
- Laboratory sessions with computers, in which students will apply the knowledge they acquired to solve problems.

ASSESSMENT SYSTEM

The evaluation will include the following elements:

1) Examination at the end of the semester (which will represent the 70% of the grade and will cover both theoretical and practical aspects)
2) During the semester, resolution of problems and exams, on paper or computer (30% of the score)

% end-of-term-examination:	70
% of continuous assessment (assigments, laboratory, practicals…):	30

BASIC BIBLIOGRAPHY

- Andrii Gakhov Probabilistic Data Structures and Algorithms for Big Data Applications, Books on Demand GmbH (Norderstedt), 2019
- Bob DuCharme Learning SPARQL, 2nd Edition, O'Reilly Media, Inc., 2013
- Donald Miner, Adam Shook MapReduce Design Patterns, O'Reilly Media, Inc., 2012
- Sanjeev Arora, Boaz Barak Computational Complexity: A Modern Approach, Cambridge University Press, 2009

- Shelley Powers Practical RDF, O'Reilly Media, Inc., 2003