Massive and Linked Data

Academic Year: (2022 / 2023)   **Review date: 10-01-2023**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: GONZALEZ CARRASCO, ISRAEL

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 1

DESCRIPTION OF CONTENTS: PROGRAMME

BLOCK 1. MASSIVE DATA INTEGRATION.
1.1. Integration of data sources.
1.2. Big Data for data integration and analysis.
1.3. Main applications.

BLOCK 2. BLOCKCHAIN.
2.1. Origin of Blockchain.
2.2. Blockchain operation.
2.3. Consensus algorithm.
2.4. Types of Blockchain.
2.5.   Main applications.

LEARNING ACTIVITIES AND METHODOLOGY

TRAINING ACTIVITIES

AF1 - Theoretical class [6.6 hours with 100% attendance, 0.20 ECTS].
AF2 - Practical classes [5 hours with 100% attendance, 0.19 ECTS].
AF4 - Laboratory practices [5 hours with 100% attendance, 0.20 ECTS].
AF5 - Tutorials [5.83 hours with 25% of attendance, 0.19 ECTS].
AF6 - Group work [30.5 hours with 0% attendance, 1.02 ECTS].
AF7 - Individual student work [30.5 hours with 0% attendance, 1.02 ECTS].
AF8 - Partial and final exams [6.66 hours with 100% attendance, 0.20 ECTS].

TEACHING METHODOLOGIES

MD1 - Class lectures by the professor with the support of computer and audiovisual media, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.
MD2 - Critical reading of texts recommended by the professor of the subject: press articles, reports, manuals and/or academic articles,
either for later discussion in class, or to expand and consolidate the knowledge of the subject.
MD3 - Resolution of practical cases, problems, etc. .... posed by the teacher individually or in groups.
MD4 - Presentation and discussion in class, under the moderation of the professor, of topics related to the content of the subject, as well as of practical cases.
case studies.
MD5 - Preparation of papers and reports individually or in groups.

ASSESSMENT SYSTEM

In addition to serve as formative activity, the practical work serves to be used as evaluation measure. Students will develop in groups a practical case about an integration problem in a particular domain.
The assessment is:

SE2 [90%] Individual or group work completed during the course.
SE3 [10%] Final exam.

The extraordinary call is an exam with the 100% of subject grade

% end-of-term-examination: 10

% of continuous assessment (assigments, laboratory, practicals…):   90

BASIC BIBLIOGRAPHY

  - Judith R. Davis and Robert Eve Data Virtualization Going Beyond Traditional Data Integration to Achieve Business Agility, Composite Software. , 2011

  - AnHai Doan, Alon Halevy, and Zachary Ives Principles of Data Integration. , Morgan Kaufmann., 2012

  - Bishop, Matt. Computer security : art and science, Addison-Wesley, 2003

  - Daniel. Drescher Blockchain basics a non-technical introduction in 25 steps, Berkeley, CA , 2017

  - Ross Anderson Security engineering : a guide to building dependable distributed systems, Wiley, 2008

  - Trovati, M., Hill, R., Anjum, A., Zhu, S.Y., Liu, L. (Eds.) Big-Data Analytics and Cloud Computing, Springer, 2015

ADDITIONAL BIBLIOGRAPHY

  - Philip Bernstein and Laura Haas, Information integration in the enterprise,, Communications of the ACM Vol 51, N 9, September 2008, Pages 72-79, 2008