Computer Services Infrastructures

Academic Year: (2022 / 2023)   **Review date: 09-04-2022**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: MOLINA LOPEZ, JOSE MANUEL

Type: Electives ECTS Credits : 3.0

Year : 1 Semester : 0

OBJECTIVES

BASIC SKILLS
CB8 That students be able to integrate knowledge and face the complexity of making judgments from information that, incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and judgments
CB9 That students know how to communicate their conclusions and the latest knowledge and reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way
CB10 That students possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.

GENERAL COMPETENCES
CG1 Understand the impact of new digital environments on libraries, archives and other documentation services, as well as the role of information and documentation professionals and experts in this technological and social context.
CG2 Identify lines of technological innovation in libraries and archives and documentation centers, and undertake possible projects for their development. The
CG5 Recognize the growing importance of teamwork in the world of work and demonstrate adaptability and integration in different work environments, maintaining relationships and communication flows.
CG8 To value the rigorous and well-done work, in planning, organizing and developing one's own activities, demonstrating initiative, creativity and sense of responsibility, maintaining interest throughout the process, and feeling personal satisfaction with the results achieved.
CG9 Integrate knowledge, make judgments and communicate their conclusions, as well as the latest knowledge and reasons that support them, to specialized and non-specialized audiences in a clear and unambiguous way.
CG10 Recognize the need for continuous adaptation to different jobs in different productive sectors, and technological and organizational innovations related to the profession, showing interest in incorporating new techniques, processes, tools and techniques into the profession's own activities. technologies.

SPECIFIC COMPETENCES
CE1 To know and analyze the current state and future prospects of technological progress and their application in libraries and archives.
CE5 Examine the main security problems of network information, as well as the knowledge of the protection systems existing in this digital environment

LEARNING OUTCOMES
This subject focuses on training students in the various technical and legal aspects of the resources that determine the tools to support information tasks and documentaries. A crucial aspect of training is that students acquire the skills necessary for the implementation of digital document management projects (EDRMS). To this end, the student will be given the necessary skills to plan, analyze and manage the implementation of an appropriate solution to typical scenarios within the framework of digital continuity and access to information in networks. It will be trained in basic skills to evaluate different technological alternatives for the creation of EDRMS ensuring their access by users and authorized institutions.

The student after passing the subject must:
To design and evaluate initiatives and strategies of application of management of large volumes of data in public and private organizations
Know Data related tasks regarding data debugging and interoperability.
To apply techniques to elaborate studies and reports that allow analyzing and evaluating the data management in an organization.
Know and understand the objectives of information security and the threats and vulnerabilities of

information systems.
Know and understand the problems of authentication and integrity of the electronic document and the tools to guarantee them.
Know and apply the legal regime of administrative transparency and public information.
Understand and apply the legal regime of information and documentation in public organizations on storage media.
Select open source or commercial tools for the implementation of efficient and efficient document and file management systems.
Analyze the most relevant technological resources in the treatment of digital information.
Use and apply the necessary methods, techniques and tools in the implementation, development and exploitation of digital information systems and services.

DESCRIPTION OF CONTENTS: PROGRAMME

Subjects common to the subjects:

Use of management and treatment technologies for large funds of documents and data.

Subjects specific to each subject:
Subject 3. Infrastructure of computer services
Theory
Introduction to Computer Systems
Technological resources of Computer Systems: High Availability Computer Systems.
Design of Infrastructures of Computer Systems.
Evaluation and sizing of computer systems.
Introduction to Computing in Grid and Grid Data: Grid Data for Digital Files.

Practices
¿Execution of exercises and practical cases about the contents of the subject

LEARNING ACTIVITIES AND METHODOLOGY

TRAINING ACTIVITIES OF THE STUDY PLAN RELATED TO SUBJECTS
AF1 Individual work for the study of theoretical and practical materials developed and contributed by the teacher
AF2 Individual work for problem solving and case studies
AF3 Theoretical-practical classes
AF4 Tutorials
AF5 Group work
AF6 Active participation in forums enabled by the teacher in the virtual educational platform
AF7 Perform self-assessment test for content review

Code
Activity Nº Total hours Nº Hours Presencial% Presencialidad Student
AF1 210 0 0
AF2 158 0 0
AF3 21 21 100
AF4 18 0 0
AF5 210 0 0
AF6 7 0 0
AF7 6 0 0
TOTAL MATERIAL 630 21 3.3

TEACHING METHODOLOGIES

MD1 Presentations in the teacher's class with 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 teacher 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., raised by the teacher individually or in a group
MD4 Exposition and discussion in class, under the moderation of the professor of subjects related to the content of the subject, as well as of practical cases
MD5 Preparation of individual and group work and reports
MD6 Reading of theoretical and practical teaching materials

ASSESSMENT SYSTEM

SE1 Participation in class and forums in virtual educational platform
SE2 Individual or group work done during the course
SE3 Carrying out evaluable and scoring questionnaires
SE4 Exam or Final Work *
SE5 Presentation, content and public defense of TFM

* The final exam or work will be done in face-to-face mode, at the Carlos III university or at a center arranged by the university that guarantees the student's identity, and must surpass it in order to be able to approve the corresponding subject / subject.

System of
Evaluation Minimum Weighting (%) Maximum Weighting (%)
SE1 5 5
SE2 30 30
SE3 15 15
SE4 50 50

% end-of-term-examination: 50

% of continuous assessment (assigments, laboratory, practicals…):   50

BASIC BIBLIOGRAPHY

 - Moreno Pérez, Juan Carlos Sistemas informáticos y redes locales, RAMA, 2012

 - Thomas Erl; Ricardo Puttini; Zaigham Mahmood Cloud Computing: Concepts, Technology & Architecture, Prentice Hall, 2013