30216 - Systems Administration

Syllabus Information

Academic year: 2023/24
Subject: 30216 - Systems Administration
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
326 - Escuela Universitaria Politécnica de Teruel
Degree: 439 - Bachelor's Degree in Informatics Engineering
            443 - Bachelor's Degree in Informatics Engineering
ECTS: 6.0
Year: 2
Semester: Second semester
Subject type: Compulsory
Module:

1. General information

In previous subjects, students have learned the functionalities, structure and use of operating systems and computer networks. Based on this knowledge, students will learn in this subject how to manage the resources of these operating systems and computer networks. Its applied approach will enable them to manage systems and networks actually used in the professional environment.

System Administration completes the contents of the subjects "Operating Systems" and "Computer Networks" in the common compulsory subject "Operating Systems and Computer Networks".

The adequate use of this subject is obtained having previously acquired a level of knowledge equivalent to the one obtained with Computer Networks and Operating Systems.

The evaluable contents do not provide direct capabilities to contribute to the achievement of the 2030 Agenda.

2. Learning results

The student, in order to pass this subject, must demonstrate basic knowledge to administer and maintain computer systems, networks and applications, as well as to know the basic fundamentals of security in operating systems and computer networks.

3. Syllabus

Interaction and programming for system administration: IEEE std 1003.1 (Posix) standard: shell and tools.

Basic security: Access control (discretionary). User accounts. Basic cryptography. SSH. Firewall.

Basic system configuration: Operating system startup and shutdown. Basic network configuration. Software installation and management . Drivers and kernel.

Processes: Process control. Periodic processes.

Storage: Discs. Logical volumes. File systems. File system hierarchy. Files. Security copies.

Application level services: E-mail, web servers, proxy services, VPN services (OpenVPN), printing service , NTP...

Monitoring: Event registration. Automatic analysis of records.

Non-technical aspects: Organization. Legislation.

4. Academic activities

At the School of Engineering and Architecture of the Ebro River Campus:
Theoretical and problem classes (3 hours per week).
Practical laboratory classes (2 hours every 2 weeks).

At the Polytechnic University School of the Teruel Campus:

Activity type 1 (lectures) 2 hours/week 1 group

Activity type 2 (participatory classes) 1 hour/week 2 groups

Activity type 3 (practical classes) 1 hour/week 2 groups

The student's dedication to achieve the learning results in this subject is estimated in 150 hours, distributed as follows:

approximately 60 hours of classroom activities (theoretical, problem and practical classes).

84 hours of effective personal study (study of notes and texts, problem solving, class and practical preparation, program development).

6 hours of assessment activities.

5. Assessment system

The assessment of the subject will follow the global assessment procedure, which will consist of two parts:

Written exam in which problems must be solved, conceptual questions must be answered or an exercise must be solved. A minimum grade of 5.0 on the written exam is required to pass the subject. The grade obtained in this exam weighs 65% of the grade of the subject.

Practical work: Practices and final practical work. In both cases it will be assessed that the solutions provided behave according to the specifications, the quality of their design and the quality of the documentation. A minimum grade of 5.0 points in the practical work is required to pass the subject. The grade obtained in this exam will be weighted 35% of the grade of the subject. The completion of all practical assignments is mandatory. They will be considered completed when the student delivers the material requested in the statement of the same, by the procedure and on the date established.

The grade for each exam will be that corresponding to the weighted sum of the two tests, being limited to 4.5 points out of 10 in the case of not achieving a 5 out of 10 in any of them.