



Universitat de Lleida

DEGREE CURRICULUM

SYSTEMS AND APPLICATIONS

ADMINISTRATION AND

MANAGEMENT

Coordination: SOLSONA TEHAS, FRANCESC XAVIER

Academic year 2023-24

Subject's general information

| | | | | |
|--|---|--------|------------|------------------|
| Subject name | SYSTEMS AND APPLICATIONS ADMINISTRATION AND MANAGEMENT | | | |
| Code | 102013 | | | |
| Semester | 1st Q(SEMESTER) CONTINUED EVALUATION | | | |
| Typology | Degree | Course | Character | Modality |
| | Bachelor's Degree in Computer Engineering | 3 | COMPULSORY | Attendance-based |
| | Double bachelor's degree: Degree in Computer Engineering and Degree in Business Administration and Management | 4 | COMPULSORY | Attendance-based |
| Course number of credits (ECTS) | 6 | | | |
| Type of activity, credits, and groups | Activity type | PRALAB | | TEORIA |
| | Number of credits | 3 | | 3 |
| | Number of groups | 2 | | 1 |
| Coordination | SOLSONA TEHAS, FRANCESC XAVIER | | | |
| Department | COMPUTER ENGINEERING AND DIGITAL DESIGN | | | |
| Important information on data processing | Consult this link for more information. | | | |
| Language | Catalan/Spanish | | | |
| Distribution of credits | Francesc Solsona 6 | | | |

| Teaching staff | E-mail addresses | Credits taught by teacher | Office and hour of attention |
|--------------------------------|--------------------------|---------------------------|------------------------------|
| SOLSONA TEHAS, FRANCESC XAVIER | francesc.solsona@udl.cat | 9 | |

Learning objectives

Acquiring knowledge about computer system's management.

The practical knowledge will be acquired based on the Linux operating system.

Theoretical knowledge will be closely linked to the concepts needed to carry out the practice.

Competences

Cross-disciplinary competences:

- **EPS1.** Capacity to solve problems and prepare and defence arguments inside the area of studies.
- **EPS6.** Capacity of analysis and synthesis.
- **EPS9.** Capacity for unidisciplinary and multidisciplinary teamwork.

Specific competences:

- **GII-CRI2.** Capacity to plan, conceive, deploy and direct projects, services and computer systems in all the fields, leading his set up and his continuous improvement and evaluation his economic and social impact.
- **GII-CRI5.** Knowledge, manage and maintain systems, services and computer applications.
- **GII-CRI10.** Knowledge of the characteristics, functionalities and structures of the operating systems and design and implement applications based in their services.

Subject contents

THEORY

Theme 1: Fylesystem

Theme 2: Security and Protection

PRACTICES

1. /PROC filesystem
2. Sed. Awk
3. Debian-Ubuntu
4. PC Architecture. The Linux kernel
5. Swap. Disk RAM

6. RAID -Redundant Array of Inexpensive Discs-
7. Quota. Cron
8. Priority and Nohup
9. Managing/Installation of Mysql and Postgres
10. LVM -Logical Volume Manager-
11. Firewalls
12. Servers

Methodology

The development of the course consists of:

1. Theory and problems in large-group classes, and
2. Practices of Linux operating system administration in medium-group classes in the laboratory.

Theory and problems evaluation will be done according to two partial exams. Practices evaluation will be carried out by delivering 10 practices in groups of two students. In addition, each partial exam will contain a question of practices equivalent to 25% of the exam.

Development plan

| Week | Activity Attended GG | Activity Attended (GM) |
|------|-------------------------|---|
| 1 | Introducing course | Free |
| 2 | Filesystem | Practice 1. Proc |
| 3 | Filesystem | Practice 2. Sed-Awk |
| 4 | Filesystem | Practice 3. Debian-Ubuntu |
| 5 | Filesystem | Practice 4. PC architecture. Linux kernel |
| 6 | Filesystem | Practice 5. Swap-Dram |
| 7 | Filesystem | Practice 6. Quota-Cron |
| 8 | Filesystem | Practices Retrieval |
| 9 | 1 st Exam | 1 st Exam |
| 10 | Security and Protection | Practice 7. RAID |
| 11 | Security and Protection | Practice 8. Priority-Nohup |
| 12 | Security and Protection | Practice 9. MySQL, Postgres |
| 13 | Security and Protection | Practice 10. LVM |
| 14 | Security and Protection | Practice 11. Firewalls |
| 15 | Security and Protection | Practice 12. Servers |
| 16 | Security and Protection | Practices Retrieval |

Evaluation

| | |
|-----|--|
| 10% | Requested practices (10 practices in total) |
| 45% | Partial exam. 25% will correspond to the practices done. |
| 45% | Partial exam. 25% will correspond to the practices done. |

Alternative Evaluation

Students who have the approval to be assessed through alternative assessment (see requirements and procedure in the assessment regulations) must carry out the following activities.

There will be a single written test that will contain all the practical and theoretical content of the subject. This written test will have a weight of 100% and will be carried out on the day reserved in the calendar for the completion of the second part of the subject (consult the exam calendar for more information).

The recovery will also be a written test with a weight of 100% and will be carried out on the day reserved in the calendar for the recovery of the second part of the subject (consult the exam calendar for more information).

Bibliography

- Lectures.

- Book:

– Francesc Solsona. "Sistemes Operatius. Teoria aplicada". Edicions de la Universitat de Lleida (Col·lecció eines 78). ISBN: 978-84-8409-747-1. 2015.

- Internet:

– O'reilly: safari.oreilly.com