

**COURSE DATA****Data Subject**

<b>Code</b>	44980
<b>Name</b>	Linux and management Linux
<b>Cycle</b>	Master's degree
<b>ECTS Credits</b>	5.0
<b>Academic year</b>	2022 - 2023

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
2245 - M.D. in Theoretical Chemistry and Comp.Model.-Erasmus Mundus	Faculty of Chemistry	1	Annual

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
2245 - M.D. in Theoretical Chemistry and Comp.Model.-Erasmus Mundus	3 - Optativas de primero	Optional

**SUMMARY**

English version is not available

**PREVIOUS KNOWLEDGE****Relationship to other subjects of the same degree**

There are no specified enrollment restrictions with other subjects of the curriculum.

**Other requirements**

No pre-requisites

**OUTCOMES**



### **2245 - M.D. in Theoretical Chemistry and Comp.Model.-Erasmus Mundus**

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Students are able to foster, in academic and professional contexts, technological and scientific progress within a society based on knowledge and respect for: a) fundamental rights and equal opportunities between men and women, b) The principles of equal opportunities and universal accessibility for persons with disabilities, and c) the values of a culture of peace and democratic values.
- Students are able to solve problems and make decisions of any kind under the commitment to the defense and practice of equality policies.
- Students are organized at work demonstrating that they know how to manage their time and resources.
- Students have the ability of analyze and synthesize in such a way that they can understand, interpret and evaluate the relevant information by assuming with responsibility their own learning or, in the future, the identification of professional exits and employment fields.

## **LEARNING OUTCOMES**

The aim is to get a knowledge not only at user level but also at system management level of complex servers based in different flavours of GNU/Linux operating systems . This includes the daily operations, security hints, and scheduling shell scripts to automate tasks in order to maintain a computational cluster in high availability.

## **DESCRIPTION OF CONTENTS**

### **1. 1.- Linux**

Hardware.

Unix/Linux operating Systems.

Different flavors of UNIX systems.

Main commands.

Vi editor.

Filesystems.



System management.  
Shell scripts programming.

## WORKLOAD

ACTIVITY	Hours	% To be attended
Computer classroom practice	30,00	100
Tutorials	20,00	100
Development of individual work	40,00	0
Study and independent work	35,00	0
<b>TOTAL</b>	<b>125,00</b>	

## TEACHING METHODOLOGY

**Lecture:** The Professor will deliver lectures about the theoretical contents of the course during two-hour sessions. The presentations will be based on the different materials available at the Moodle platform.

**Teaching in computer room.** Teaching will be conducted in a computer room. The classes, in sessions from two to four hours, will include a brief theoretical introduction, in which the teacher will present the basic concepts, followed by practical applications, in which the student will learn through the resolution of practical examples.

**Online teaching.-** We will use the different tools offered by the platform moodle (<https://moodle.uam.es>). Publication of contents of the course, groupware tools, discussion forums, email.

**Written reports:** Orientation and supervision in the preparation of written reports.

## EVALUATION

### Ordinary assessment

The knowledge acquired by the student will be evaluated along the course. The educational model to follow will emphasize a continuous effort and advance in training and learning.

The final student mark will be based on exercises that must be done during the course. The next criteria will be followed for assessment of student exercises:

- 100% from the student report,

### Extraordinary assessment



The student will have to face a final exam, including both theory and practical exercises. The student mark will be obtained from:

- 70% from the final exam,
- 30% from the individual work.

## REFERENCES

### Basic

- Principios y administración de Linux. Pablo Sanz Mercado, Alberto Luna Fernández. UAM Ediciones, 2009.

Seguridad en Linux: Una guía práctica. Pablo Sanz Mercado. Colección cuadernos de apoyo, UAM Ediciones, 2008.

Programación de Shell scripts. Alberto Luna Fernández, Pablo Sanz Mercado. UAM ediciones, 2011.

Bash cookbook. Carl Albing, J.P. Vossen & Cameron Newwham. O'Reilly, 2007.

Unix system administration handbook. Evi Nemeth, Garth Snyder, Scott Seebass, Trent R. Hein. Ed. Prentice Hall, 2001.

Unix Power tools. Jerry Peek, Tim. Ed. O'Reilly, Mike Loukides. O'Reilly 1997.