



POLITÉCNICA

INTERNATIONAL
CAMPUS OF
EXCELLENCE

COORDINATION PROCESS OF
LEARNING ACTIVITIES
PR/CL/001



E.T.S. de Ingeniería de
Sistemas Informáticos

ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

615000733 - System Administration

DEGREE PROGRAMME

61TI - Grado en Tecnologías para la Sociedad de la Información

ACADEMIC YEAR & SEMESTER

2019/20 - Semester 1

Index

Learning guide

1. Description.....	1
2. Faculty.....	1
3. Prior knowledge recommended to take the subject.....	2
4. Skills and learning outcomes	2
5. Brief description of the subject and syllabus.....	3
6. Schedule.....	4
7. Activities and assessment criteria.....	6
8. Teaching resources.....	8
9. Other information.....	9

1. Description

1.1. Subject details

Name of the subject	615000733 - System Administration
No of credits	6 ECTS
Type	Compulsory
Academic year of the programme	Fourth year
Semester of tuition	Semester 7
Tuition period	September-January
Tuition languages	English
Degree programme	61TI - Grado en Tecnologías para la Sociedad de la Información
Centre	61 - Escuela Técnica Superior de Ingeniería de Sistemas Informáticos
Academic year	2019-20

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Pilar Manzano Garcia (Subject coordinator)	D-4412	pilar.manzano@upm.es	M - 12:00 - 14:00 Tu - 12:00 - 14:00 Th - 12:00 - 14:00

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

3. Prior knowledge recommended to take the subject

3.1. Recommended (passed) subjects

- Taller De Sistemas Operativos

3.2. Other recommended learning outcomes

- Conocimientos del sistema Linux a nivel de usuario

4. Skills and learning outcomes *

4.1. Skills to be learned

CC05 - Conocimiento, administración y mantenimiento de sistemas, servicios y aplicaciones informáticas.

CT04 - Comunicación escrita: Relacionarse eficazmente con otras personas a través de la expresión clara de lo que se piensa, mediante la escritura y los apoyos gráficos.

4.2. Learning outcomes

RA143 - Escribe programas BASH para automatizar tareas

RA142 - Conoce y usa comandos de administración de Unix

RA145 - Determina el uso que se hace de los recursos del sistema

RA144 - Conoce y modifica ficheros de configuración de Unix

RA146 - .Programa la ejecución periódica de tareas de administración

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

5. Brief description of the subject and syllabus

5.1. Brief description of the subject

It introduces the basic concepts of administration of a Linux system and allows students to practice with some specific administration tasks.

5.2. Syllabus

1. Introduction
2. The BASH language
3. Virtualization
4. System startup and shutdown
5. Installing and updating software
6. User management
7. Managing system resources
8. System security
9. Automating tasks with cron
10. Filesystems and backups
11. RAID systems
12. Printer management

6. Schedule

6.1. Subject schedule*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Other face-to-face activities	Assessment activities
1	Presentation and chapter 1 Duration: 02:00 Lecture	Introduction to lab activities Duration: 02:00 Laboratory assignments		
2	Chapter 1 Duration: 01:00 Lecture	Lab work Duration: 03:00 Laboratory assignments		
3	Chapter 2 Duration: 02:00 Lecture	Lab work Duration: 02:00 Laboratory assignments		
4	Chapter 2 Duration: 04:00 Lecture			
5	Chapter 3 Duration: 01:00 Lecture	Lab work Duration: 03:00 Laboratory assignments		
6	Chapter 4 Duration: 02:00 Lecture	Lab work Duration: 02:00 Laboratory assignments		
7	Chapter 5 Duration: 01:00 Lecture	Lab work Duration: 03:00 Laboratory assignments		
8	Chapter 6 Duration: 02:00 Lecture	Lab work Duration: 02:00 Laboratory assignments		
9	Chapter 7 Duration: 01:00 Lecture	Lab work Duration: 02:00 Laboratory assignments		Test chapters 1-6 (RA142,RA143,RA144) Written test Continuous assessment Duration: 01:00
10	Chapter 8 Duration: 01:00 Lecture	Lab work Duration: 02:00 Laboratory assignments		
11	Chapter 9 Duration: 01:00 Lecture		Group work Duration: 03:00 Problem-solving class	
12	Chapter 10 Duration: 02:00 Lecture	Lab work Duration: 02:00 Laboratory assignments		
13	Chapter 11 Duration: 01:00 Lecture		Group work Duration: 03:00 Problem-solving class	

14	Chapter 12 Duration: 01:00 Lecture		Group work Duration: 03:00 Problem-solving class	
15			Student Presentations Duration: 02:30 Problem-solving class	Written assignment presentation Individual work Continuous assessment and final examination Duration: 00:30
16				Final exam (RA142,RA143,RA144,RA145,RA146) Written test Continuous assessment and final examination Duration: 03:00 Lab work presentation Individual presentation Continuous assessment and final examination Duration: 00:30 Additional part for students with only final exam Written test Final examination Duration: 00:30
17				

The independent study hours are training activities during which students should spend time on individual study or individual assignments.

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

* The subject schedule is based on a previous theoretical planning of the subject plan and might go through experience some unexpected changes along throughout the academic year.

7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Continuous assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
9	Test chapters 1-6 (RA142,RA143,RA144)	Written test	Face-to-face	01:00	20%	0 / 10	CC05
15	Written assignment presentation	Individual work	No Presential	00:30	10%	5 / 10	CT04
16	Final exam (RA142,RA143,RA144,RA145,RA146)	Written test	Face-to-face	03:00	40%	5 / 10	CC05
16	Lab work presentation	Individual presentation	Face-to-face	00:30	30%	4 / 10	

7.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
15	Written assignment presentation	Individual work	No Presential	00:30	10%	5 / 10	CT04
16	Final exam (RA142,RA143,RA144,RA145,RA146)	Written test	Face-to-face	03:00	40%	5 / 10	CC05
16	Lab work presentation	Individual presentation	Face-to-face	00:30	30%	4 / 10	
16	Additional part for students with only final exam	Written test	Face-to-face	00:30	20%	5 / 10	

7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Written assignment presentation	Individual work	Face-to-face	00:30	10%	5 / 10	CT04
Final exam (RA142, RA143, RA144, RA145, RA146)	Written test	Face-to-face	03:00	60%	5 / 10	CC05

Lab work presentation	Individual presentation	Face-to-face	00:30	30%	4 / 10	
-----------------------	-------------------------	--------------	-------	-----	--------	--

7.2. Assessment criteria

CONTINUOUS EVALUATION:

IF FinalExamGrade \geq 5 then

FinalGrade = $0,20 * \text{PartialExamGrade} + 0,10 * \text{WrittenAssignmentGrade} + 0,30 * \text{PracticalWorkGrade} + 0,40 * \text{FinalExamGrade}$

else

FinalGrade = NoPass

ONLY FINAL EXAM AND EXTRAORDINARY JULY EXAM:

IF FinalExamGrade \geq 5 then

FinalGrade = $0,10 * \text{WrittenAssignmentGrade} + 0,30 * \text{PracticalWorkGrade} + 0,60 * \text{FinalExamGrade}$

else

FinalGrade = NoPass

In this case, the practical work and the written assignment will be presented on the day of the final exam.

DEADLINE TO ASK FOR ONLY FINAL EXAM: November 30, 2018

The evaluation of the generic competence "Comunicación escrita" (CT04) is done through a written work.

8. Teaching resources

8.1. Teaching resources for the subject

Name	Type	Notes
Lab equipment with Linux	Equipment	A Department or School lab with 30-40 computers with Linux is required.
"Unix and Linux System Administration Handbook". 4th. Ed. Evi Nemeth. Prentice-Hall, 2011	Bibliography	Basic concepts of administration with Linux and Unix.
"Essential System Administration". 3rd. Edition. Aeleen Frisch. O'Reilly & Associates, 2002.	Bibliography	Basic concepts on administration on Unix type systems.
"Learning the Bash shell". 3rd. Ed. Cameron Newham. O'Reilly, 2005	Bibliography	BASH language.
"Managing RAID on Linux". Derek Vadala. O'Reilly, 2003	Bibliography	RAID systems.
"Administración de sistemas Linux", 1ª edición. Tom Adelstein y Bill Lubanovic. O'Reilly 2007	Bibliography	Basic Linux administration in Spanish.

9. Other information

9.1. Other information about the subject

The course is taught in English, and all the materials (included exams) are provided in Spanish and English.

With respect to the United Nations sustainable development goals, this course contributes to education in free software (Linux and many related free software tools). So, we contribute to reducing inequality and to the development of sustainable cities and communities.