

BASIC DETAILS:

Subject:	ADMINISTRACIÓN SISTEMAS OPERATIVOS		
Id.:	30061		
Programme:	GRADUADO EN INGENIERÍA INFORMÁTICA. PLAN 2008 (BOE 15/12/2008)		
Module:	DISEÑO Y ADMINISTRACION DE SISTEMAS Y SERVICIOS		
Subject type:	OBLIGATORIA		
Year:	3	Teaching period:	Primer Cuatrimestre
Credits:	6	Total hours:	150
Classroom activities:	59	Individual study:	91
Main teaching language:	Inglés	Secondary teaching language:	Castellano
Lecturer:	ORTEGA ABAD, DAVID (T)	Email:	dortega@usj.es

PRESENTATION:

The purpose of an operating system is to provide an operating environment in which users can perform their tasks in an adequate and effective way. the figure of an administrator who knows in depth both the operating system and the needs of the users is mandatory to make it possible. It is a doubly complicated task because it requires both advanced technical knowledge of the machine and good skills for interpersonal communication.

This subject will introduce the conceptual bases and techniques applied to manage and get performance from the computer systems in order to meet the needs of its users.

PROFESSIONAL COMPETENCES ACQUIRED IN THE SUBJECT:

General programme competences	G05	Capacity to adapt to different environments while being positive and optimistic, orienting your behaviour towards the achievement of goals.
	G08	Ability to communicate effectively about different matters in a variety of professional situations and with the different media available.
	G09	Capacity to make decisions impartially and rationally.
	G10	Critical and analytical capacity when assessing information, data and courses of action.
Specific programme competences	E03	Capacity to recognise the technical principles and apply the appropriate practical methods satisfactorily to analyse and solve engineering problems.
	E04	Capacity to maintain an open mind to innovation and creativity within the framework of the engineering profession.
	E11	Capacity to remain up-to-date in the technological and business worlds in the area of information and communication technologies.
	E13	Capacity to identify, assess and use current and emerging technologies, considering how they apply in terms of individual or organisational needs.
	E17	Capacity to identify and analyse user needs with the intention of designing effective, usable IT solutions which can be incorporated into the user's operating environment.
	E18	Capacity to identify and define the requirements to be satisfied by IT systems to cover the stated needs of organisations or individuals.
	E19	Capacity to design and define the architecture of IT systems (software, hardware and communications) under the requirements agreed upon by the parties involved.
	E22	Capacity to undertake implementation tasks which require a high degree of technical awareness in different spheres (programming, configuration of hardware and communications equipment, etc.).
	E25	Capacity to analyse viability, design development plans, estimate resources, run and oversee the execution of software-intensive engineering projects.
	E27	Capacity to write and maintain descriptive documentation of the origin, production and operability of IT systems.
Learning outcomes	R01	Administer server operating systems, installing and configuring the software to ensure the system works correctly.
	R02	Integrate free and proprietary operating systems, justifying and guaranteeing their interoperability.
	R03	Install and configure server operating systems.
	R04	Tackle the basic systems administrator tasks.
	R05	Administer systems processes, describing them and applying security and efficiency criteria.

R06	Manage the automation of systems tasks, applying efficiency criteria and using graphic commands and tools.
R07	Remotely administer the network operating system, assessing its importance and applying security criteria.
R08	Administer network services to create company infrastructure.
R09	Administer network services to create company infrastructure.
R10	Administer the directory service, interpreting specifications and integrating them into a network.

PRE-REQUISITES:

Students should have previous knowledge about Operative Systems

SUBJECT PROGRAMME:

Subject contents:

1 - The work of the administrator
1.1 - Role of the OS. Evolution
1.2 - Role of the administrator. Tasks and skills of a systems administrator.
2 - Operative Systems Advanced Concepts
2.1 - Kernel
2.2 - Basic Unix-Linux tools for administrators
2.3 - Introduction to Shell programming
2.4 - File Systems
2.5 - Memory and processes management
2.6 - Input/output management
3 - Basic administration of operating systems. Concepts and techniques
3.1 - Basic administration of operating systems. Concepts and techniques
3.2 - Tasks automation. Scripting
3.3 - Users and accounts
3.4 - Linux File System
3.5 - Process and event control. Periodic processes
3.6 - Devices
3.7 - Backups
4 - Networks and Systems Administration Introduction

Subject planning could be modified due unforeseen circumstances (group performance, availability of resources, changes to academic calendar etc.) and should not, therefore, be considered to be definitive.

TEACHING AND LEARNING METHODOLOGIES AND ACTIVITIES:

Teaching and learning methodologies and activities applied:

Each type of session, work and activities are designed for the development of the competences that the student must acquire in the subject.

Next scheme summarizes the most important recommendations to the students:

- Read the presentations before attending the theoretical sessions (PDU available in advance)
- Attendance at theory sessions in a participatory way
- Complement the topics covered in these sessions with information offered in the bibliography
- Use, at any time, tutorship sessions to resolve any doubt or problem
- Development of the practices according to the established criteria: Do not delay the development. Try to resolve any problem with your classmates via subject's forum in the PDU

Student work load:

Teaching mode	Teaching methods	Estimated hours
Classroom activities	Master classes	15
	Practical exercises	15
	Practical work, exercises, problem-solving etc.	15
	Coursework presentations	4
	Workshops	6
	Assessment activities	4
Individual study	Individual study	36
	Individual coursework preparation	30
	Group coursework preparation	15
	Research work	5
	Recommended reading	5
Total hours:		150

ASSESSMENT SCHEME:

Calculation of final mark:

Written tests:	10 %
Individual coursework:	30 %
Group coursework:	15 %
Final exam:	40 %
Asistencia y participación:	5 %
TOTAL	100 %

*Las observaciones específicas sobre el sistema de evaluación serán comunicadas por escrito a los alumnos al inicio de la materia.

BIBLIOGRAPHY AND DOCUMENTATION:

Basic bibliography:

Frisch Æ. "Essential System Administration" 3rd Edition. O'Reilly 2002, ISBN 0596003439
Burgess M, John Wiley. "Principles of Network and System Administration" 2nd Edition
Evi Nemeth, Garth Snyder. "Linux Administration Handbook (2nd Edition)". Prentice Hall PTR 2006, ISBN 0131480049

Recommended bibliography:

Stevens R Addison. "Advanced Programming in the UNIX® Environment" 2nd Edition. Wesley Professional 2005, ISBN: 0201433079
Maxwell S. "UNIX System Administration: A Beginner's Guide". McGraw Hill 2002, ISBN 0072228334.
Russinovich M. "Microsoft Windows Internals". Microsoft Press 2004, ISBN 0735619174.
Kirkland J. "Linux Troubleshooting for System Administrators and Power Users". Prentice Hall 2006, ISBN 0131855158.
Evi Nemeth, Garth Snyder, Scott Seebass and Trent H. Hein. "Unix System Administration Handbook" 3rd Edition. Prentice Hall PTR, 2000, ISBN 0130206016

Recommended websites:

Ubuntu	http://www.ubuntu.com
Webmin	http://www.webmin.com/