UNIVERSIDADE DA CORUÑA

Teaching Guide					
Identifying Data					2014/15
Subject (*)	Administración de Sistemas Operativos			Code	614G01212
Study programme	Grao en Enxeñaría Informática				
Descriptors					
Cycle	Period	Year		Type	Credits
Graduate	1st four-month period	Curso adap. Enx. Téc. Informática		Obligatoria	6
Language	Galician				
Prerequisites					
Department	Computación				
Coordinador	Yañez Izquierdo, Antonio Fermin		E-mail	antonio.yanez@udc.es	
Lecturers	Yañez Izquierdo, Antonio Fermin		E-mail	antonio.yanez@udc.es	
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General description	In this course we'll try to get acquainted with the administration of unix-like operating systems. We'll try to cover both the concepts and the different implementations of those same concepts by using systems on the different branches of the unix family tree It is assumed a certain knowledge of basic operating system concepts, basic unix commands and shell programming				

Study programme competences	
Code	Study programme competences
A4	Coñecementos básicos sobre o uso e a programación dos ordenadores, sistemas operativos, bases de datos e programas informáticos con aplicación na enxeñaría.
A7	Capacidade para deseñar, desenvolver, seleccionar e avaliar aplicacións e sistemas informáticos que aseguren a súa fiabilidade, seguranza e calidade, conforme a principios éticos e á lexislación e normativa vixente.
A8	Capacidade para planificar, concibir, despregar e dirixir proxectos, servizos e sistemas informáticos en todos os ámbitos, liderando a súa posta en marcha e a súa mellora continua e valorando o seu impacto económico e social.
A53	Capacidade para seleccionar, deseñar, despregar, integrar, avaliar, construír, xestionar, explotar e manter as tecnoloxías de hárdware, sóftware e redes dentro dos parámetros de custo e calidade adecuados.
B3	Capacidade de análise e síntese
C3	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.
C6	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.
C7	Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.

Learning outcomes			
Subject competencies (Learning outcomes)	Study programme competences		
	A4 A7 A8 A53		C3
		B3	C3 C6 C7

Contents	
Topic	Sub-topic

Introduction to System Administration	The role of the System Administrator Users and groups Files, processes and devices Becoming superuser Basic system administration commands Different UNIXes
Booting and Installing the Operating System	Selecting and preparing installation media The boot process Preparing the disks. Basic disk partitioning Sharing disks among O.S.s Boot loaders
Managing users and groups	Managing user acounts Administrative tools for managing users Managing groups User autentification with PAM User autentification with LDAP
Processes and software packages	Managing and monitoring processes Tracing system calls Process privileges and priorities The /proc filesystem Signals Software packages: packages and ports Administering software packages and installing software
Devices, disks and filesystems	Devices and device files. Adding support for devices. Kernel modules Organisation of the UNIX file system. Managing disks. Partitioning schemes Creating and accesing filesystems Managing volumes. RAID Encrypting filesystems Introduction to the ZFS filesystem
Automating administrative tasks	Shell scripting Monitoring system: logs Schedulling execution of tasks: the cron and at commands Starting and stopping system services Initialization files and boot scripts
TCP/IP networking	Basic network configuration Network interface aliasing Manipulating routes inetd configuration
Managing internet and intranet services	fileservers DHCP ssh web mail

Planning			
Methodologies / tests	Ordinary class hours	Student?s personal work hours	Total hours

Guest lecture / keynote speech	20.5	61.5	82
Laboratory practice	20.5	41	61.5
Objective test	2.5	0	2.5
Personalized attention	4	0	4
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
Methodologies	**Description**
Guest lecture / keynote speech	The teacher will elaborate on the contents and give guidance on how to use and apply these concepts in the laboratory
Laboratory practice	Use and application of the concpts seen in real world system in the laboratory
Objective test	Examen escrito para evaluar el grado de asimilación de los conceptos expuesto en las sesiones magistrales

Personalized attention	
Methodologies	**Description**
Laboratory practice Guest lecture / keynote speech Objective test	Both the understanding of the concepts and the application tof these concepts to real systemas may require personalized attention to the student.

Assessment		
Methodologies	**Description**	**Qualification**
Laboratory practice	The ongoing work on the laboratory will be evaluated up to 30% qof the final qualification	30
Objective test	Examen escrito para evaluar el grado de asimilación de los conceptos expuesto en las sesiones magistrales. El examen podría incluir, aparte de las cuestiones teóricas, la realización de algun ejercicio práctico	40

Assessment comments

Sources of information	
Basic	- openBSD.org (2012). Bug Buster's guide to OpenBSD. http://www.openbsd.org/faq/index.html - Frisch, Aeleen (2002). Essential System Administration. O' Reilly - Solaris System Engineers (2009). Solaris 10 System Administration Essentials (Solaris System Administration). : Prentice Hall - The FreeBSD Documentation Project (2012). The FreeBSD handbook. http://www.freebsd.org/doc/en_US.ISO8859-1/books/handbook/ - Nemeth, Snyder, Hein ,Whaley (2011). Unix and Linux System Administration Handbook 4th edition . Pearson Education
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Other comments
Since this subject is included in "Curso adap. Enx. Téc. Informática", no recomendations are needed since Enxeñería Técnica is required

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.