



Teaching Guide

| Teaching Guide | | | | |
|---------------------|--|--------|----------------------|-----------|
| Identifying Data | | | | 2018/19 |
| Subject (*) | Operating Systems Administration | | Code | 614G01047 |
| Study programme | Grao en Enxeñaría Informática | | | |
| Descriptors | | | | |
| Cycle | Period | Year | Type | Credits |
| Graduate | 2nd four-month period | Third | Obligatory | 6 |
| Language | Galician | | | |
| Teaching method | Face-to-face | | | |
| Prerequisites | | | | |
| Department | Computación | | | |
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| Lecturers | Yañez Izquierdo, Antonio Fermin | E-mail | antonio.yanez@udc.es | |
| Web | http://www.dc.fi.udc.es/~afyanez/ | | | |
| General description | Operating Systems Administration, covering both standalone and networked systems. The different types of UNIX systems are taken into consideration | | | |

Study programme competences

| | |
|------|-----------------------------|
| Code | Study programme competences |
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Learning outcomes

| Learning outcomes | Study programme competences | | |
|---|-----------------------------|--|--|
| C1 - C8 (See Nuclear competences of the studies) | | | |
| | | | |
| Knowledge of the characteristics, functionalities and structure of operating systems and design and implement applications based on its services. | | | |
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| B9-B17 (Transversal capacities: see study competences) | | | |
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Contents

| Topic | Sub-topic |
|--|--|
| Introduction to System Administration | <ul style="list-style-type: none"> The role of the System Administrator Users and groups Files, processes and devices Becoming superuser Basic system administration commands Different UNIXes |
| Bootting and Installing the Operating System | <ul style="list-style-type: none"> Selecting and preparing installation media The boot process Preparing the disks. Basic disk partitioning Sharing disks among O.S.s Boot loaders |



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|---|--|
| Managing users and groups | Managing user accounts Administrative tools for managing users Managing groups User authentication with PAM User authentication 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 | Competencies | Ordinary class hours | Student?s personal work hours | Total hours |
| Guest lecture / keynote speech | | 21 | 63 | 84 |
| Laboratory practice | | 14 | 28 | 42 |
| Supervised projects | | 7 | 10.5 | 17.5 |
| 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 concepts seen in real world system in the laboratory |
| Supervised projects | Ampliación de las practicas de laboratorio para ser realizada de manera más autónoma por los alumnos |
| Objective test | Examen escrito para evaluar el grado de asimilación de los conceptos expuesto en las sesiones magistrales |

| Personalized attention | |
|---|---|
| Methodologies | Description |
| Objective test Supervised projects Guest lecture / keynote speech Laboratory practice | Both the understanding of the concepts and the application of these concepts to real systems may require personalized attention to the student. |

| Assessment | | | |
|---------------------|--------------|---|---------------|
| Methodologies | Competencies | Description | Qualification |
| Objective test | | Examen escrito para evaluar el grado de asimilación de los conceptos expuesto en las sesiones magistrales | 40 |
| Supervised projects | | Se valorará la entrega de los trabajos tutelados en el plazo preestablecido así como su correcto funcionamiento. ALUMNOS TIEMPO PARCIAL: Se realizará una reunión a principio de curso para valorar como se realizará la evaluación en función de su disponibilidad. | 20 |
| Laboratory practice | | The ongoing work on the laboratory will be evaluated up to 30% of the final qualification | 40 |

| Assessment comments |
|---------------------|
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| Sources of information | |
|------------------------|--|
| Basic | <ul style="list-style-type: none">- Nemeth, Snyder, Hein, Whaley (2011). Unix and Linux System Administration Handbook 4th edition. Pearson Education- Solaris System Engineers (2009). Solaris 10 System Administration Essentials (Solaris System Administration). : Prentice Hall- Frisch, Aileen (2002). Essential System Administration. O' Reilly- The FreeBSD Documentation Project (2012). The FreeBSD handbook. http://www.freebsd.org/doc/en_US.ISO8859-1/books/handbook/- openBSD.org (2012). Bug Buster's guide to OpenBSD. http://www.openbsd.org/faq/index.html |
| Complementary | |

| Recommendations |
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| Subjects that it is recommended to have taken before |
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| Subjects that are recommended to be taken simultaneously |
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| Subjects that continue the syllabus |
| |
| Other comments |
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(*)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.