Teaching Guide				
Identifying Data				2015/16
Subject (*)	Computer Science Preliminaries		Code	614G01002
Study programme	Grao en Enxeñaría Informática			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	First	FB	6
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	ComputaciónElectrónica e SistemasTecnoloxías da Información e as Comunicacións			
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General description	This subject includes basic concepts about: computer hardware and information representation within computers, operating systems, databases, and communication networks.			

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.
A5	Coñecemento da estrutura, organización, funcionamento e interconexión dos sistemas informáticos, os fundamentos da súa programación e a súa aplicación para a resolución de problemas propios da enxeñaría.
B3	Capacidade de análise e síntese
C2	Dominar a expresión e a comprensión de forma oral e escrita dun idioma estranxeiro.
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.

C7	Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.

Learning outcomes			
Learning outcomes	Study programme competences		
Learn the basics of operating systems.	A4	B3	
Understanding the basic operation of a computer, and how information is internally represented.	A4 A5	B3	
Obtaining advanced user-level skills to install and manage a Linux-type operating system.	A4 A5		C2
Obtaining advanced user-level skills to manage relational databases.	A4 A5	B3	
Learn the basics of different programming paradigms.	A4		
Learn the basics of communication networks.	A4 A5	B3	C2 C3
Know the most important aspects of computer engineering profession.			C7

Contents	
Topic	Sub-topic
Fundamentals of Computer Architecture	History of Computers Hardware Information Representation Computer Architecture
Fundamentals of Operating Systems	Introduction Operating System Structure Services
Fundamentals of Database Management Systems	Introduction to Database Management Systems Introduction to the Relational Model Introduction to SQL
Fundamentals of Comunication Networks	Networks: Introduction to Communication Networks. Wiring and topologies. The OSI model. Ethernet basics. Fundamentals of TCP / IP. Configuration of end devices. Basic functionality of network devices: Switches and Routers.

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A4 A5 B3 C7	30	30	60
Laboratory practice	A4 C2 C3	30	48	78
Mixed objective/subjective test	A4 A5 B3 C7	3	0	3
Personalized attention		9	0	9
(*)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	Classroom lectures. In them the fundamental contents of the subject will be exposed. They include showing objectives, motivation, concept development, use, and summary.

Laboratory practice	In laboratory classes the knowledge needed to acquire the proposed skills are presented. In the laboratory practices, students will do exercises that will lead them to develop their operative skills.
Mixed objective/subjective test	It consists in a final exam that will contain both questions related to theoretical issues and problems to solve.

Personalized attention	
Methodologies	**Description**
Laboratory practice	During the seminars, students may present problems, questions, etc. According to these requests, the professor will review concepts, solve new problems or use any other activities that could be helpful to solve the issues raised.

Assessment			
Methodologies	**Competencies**	**Description**	**Qualification**
Mixed objective/subjective test	A4 A5 B3 C7	The final exam will evaluate the following concerns: Theoretical Concepts regarding the subject: Mastering the theoretical and operational knowledge of the subject. Practical expertise: Handling and Understanding of the operational and theoretical knowledge of the subject	60
Laboratory practice	A4 C2 C3	Students will have to do several practical exercises that will be rated.	40

Assessment comments
This subject is composed of four blocks. Students must obtain at least 20% of the maximum rate of each block in the mixed test (final exam). First opportunity: Students who did not perform any (one or more) of the evaluable tests corresponding to the "laboratory practice" from September to January, (for example, those who did not attend the class on the day of the test), will receive a "zero" rate in the corresponding test. Yet, they are allowed to attend the final exam (Mixed objective/subjective test) and could still pass the subject in the first opportunity.Second opportunity: During the second opportunity it is possible to reach 100% of the maximum rate both in the practical test and in mixed test.Attention to part-time students: In case that: (a) they could not attend to the (scheduled) classes corresponding to their group and they miss any of the "practical tests" for this reason, and (b) provided that they notified that issue with time enough to re-schedule their test within a different group; we will try to allow them to join a different group so that they could do the corresponding "practical test" in a different date.

Sources of information	
Basic	- Ernesto Ariganello (2009). Reces Cisco. Guía de Estudio para la Certificación CCNA Routing y Switching. RA-MA - Vicente Trigo Aranda (2010). Del ábaco a Internet. Creaciones Copyright - A. Silberschatz; H. Korth; S. Sudarshan (2006). Fundamentos de Bases de Datos. Mc Graw Hill - A. Silberschatz; H. Korth; S. Sudarshan (2011). Database System Concepts (6th ed). McGraw-Hill - Elmasri, R.; Navathe, S. (2007). Fundamentos de Sistemas de Bases de Datos. Addison-Wesley - Miles J. Murdocca; Vincent P. Heuring (2002). Principios de arquitectura de computadoras. Prentice-Hall - Allen B. Tucker, Robert E. Noonan (2001). Programming Languages: Principles and Paradigms. Mc Graw Hill - Carretero et al. (2007). Sistemas Operativos, una visión aplicada (2ª ed). Mc Graw Hill - Andrew S. Tanenbaum (2009). Sistemas Operativos Modernos (3ª ed). Prentice-Hall - Andrew S. Tanenbaum (2009). Modern Operating Systems (3rd ed). Pearson-Prentice Hall - Wendell Odom (2013). CCENT/CCNA ICND1 100-101 Official Cert Guide. Cisco Press

Complementary	- W. Stallings (2004). Comunicaciones y Redes de Computadores. Pearson - Prentice Hall - Silberschatz, A.; Galvin, P.B.; Gagne, G. (2005). Fundamentos de los Sistemas Operativos (7ª ed). Mc Graw Hill - M. Meyers (2009). Redes. Administración y mantenimiento. Anaya

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Fundamentals of Computers/614G01007 Estrutura de Computadores/614G01012 Bases de Datos/614G01013 Sistemas Operativos/614G01016 Redes/614G01017
Other comments

(*)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.