UNIVERSIDADE DA CORUÑA

Teaching Guide

Identifying Data				2024/25	
Subject (*)	Computer Science Preliminaries		**Code**	614G01002	
Study programme	Grao en Enxeñaría Informática				

Descriptors					
Cycle	**Period**	**Year**	**Type**	**Credits**	
Graduate	1st four-month period	First	Basic training	6	
Language	SpanishGalicianEnglish				
Teaching method	Face-to-face				
Prerequisites					
Department	Ciencias da Computación e Tecnoloxías da InformaciónComputaciónEnxeñaría de Computadores				
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Web	campusvirtual.udc.gal				
General description	This subject includes basic concepts about: computer hardware and information representation within computers, operating systems, databases, and communication networks.				

Study programme competences / results	
Code	**Study programme competences / results**
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 / results**		
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 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	Information Representation History of Computers Hardware Computer Architecture
Fundamentals of Database Management Systems and Introduction to Operating Systems	Introduction to Operating 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 / Results**	**Teaching hours (in-person & virtual)**	**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 theory classes. In these classes, the fundamental contents of the subject will be explained. They consist of exposition of objectives, motivation, conceptual development, utility and summary.
Laboratory practice	In laboratory classes, the concepts, techniques and tools needed to acquire the proposed skills are presented. In these practical sessions, students will do exercises that will lead them to develop their operative skills.
Mixed objective/subjective test	It is a final exam that will contain both questions related to theoretical issues and problems to solve.

Personalized attention	
Methodologies	**Description**

Laboratory practice	There can be significant differences between students in terms of their knowledge of the specific contents of the subject, so personalised attention will be developed both in practical and theoretical classes. During the lessons, the students will be able to present questions, doubts, etc. The teacher, in response to these requests, will review concepts, solve new problems, or use any activity he or she considers appropriate to resolve the questions raised.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Mixed objective/subjective test	A4 A5 B3 C7	Both in the FIRST OPPORTUNITY and in the SECOND OPPORTUNITY it will be MANDATORY to pass a written test that will make up 60% of the final overall grade. To pass this mixed test, students have to get at least 2.4 points out of 6 (i.e. 40% of the maximum mark of the Mixed Test). - Maximum grade: 6.0 points - Minimum grade: 2.4 (out of 6.0)	60
Laboratory practice	A4 C2 C3	Students will have to do several practical exercises that will be rated. - Maximum grade: 4.0 points - Minimum grade: not required	40

Assessment comments
Students must obtain at least 5 points (out of 10) after summing their grades corresponding to the mixed test plus the laboratory-practice grade. Students must obtain at least 40% of the maximum grade in the mixed test (final exam). Otherwise, they would not pass the subject even if the final grade (considering both practice and mixed tests) were >=5. In such case, the maximum final grade would be set to 4.9, and consequently, the subject will be considered as "NON-PASSED".   - First opportunity: Mixed test: [60%]: Mandatory: Students must do a final exam that will include the contents of each block/part of the subject.Laboratory-practice: [40%]: Optional: Students who did not perform any (one or more) of the evaluable tests corresponding to the "laboratory practice" part from September to January, (for example, those who did not attend the class on the day of the test), will receive a "zero" grade in the corresponding test. Yet, they are allowed to attend the final test/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 grade both in the Laboratory-practice part and in the mixed test.Mixed test: [60%]: Mandatory: The grade obtained in the first opportunity is not kept.Laboratory-practice: [40%]: Optional: The grades of the first opportunity are retained. However, it is possible to take an optional practice exam (along with the mixed test) to recover the maximum grade (this means discarding the ?Laboratory-practice? grade achieved in the first opportunity).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 existing tests (e.g. "practical tests"), 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 "test" in a different date.Cheating and/or plagiarism: Fraudulent behaviour on tests or evaluation activities, once verified, will be punished in accordance with Article 14 of the Rules of evaluation, review and claim of the qualifications of the degree studies and master's degree from the UDC.

Sources of information

Basic	- Vicente Trigo Aranda (2010). Del ábaco a Internet. Creaciones Copyright
	- Miles J. Murdocca; Vincent P. Heuring (2002). Principios de arquitectura de computadoras. Prentice-Hall
	- Carretero et al. (2007). Sistemas Operativos, una visión aplicada (2ª ed). Mc Graw Hill
	- 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
	- Elmasri, Ramez.; Navathe, Shamkant B. (2017). Fundamentals of Database Systems (7th edi). Pearson
	- Allen B. Tucker, Robert E. Noonan (2001). Programming Languages: Principles and Paradigms. Mc Graw Hill
	- Ernesto Ariganello (2009). Reces Cisco. Guía de Estudio para la Certificación CCNA Routing y Switching. RA-MA
	- Wendell Odom (2013). CCENT/CCNA ICND1 100-101 Official Cert Guide. Cisco Press
Complementary	- Andrew S. Tanenbaum (2009). Sistemas Operativos Modernos (3ª ed). Prentice-Hall
	- Andrew S. Tanenbaum (2009). Modern Operating Systems (3rd ed). Pearson-Prentice Hall
	- W. Stallings (2004). Comunicaciones y Redes de Computadores. Pearson - Prentice Hall
	- 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
Computer Structure/614G01012
Databases/614G01013
Operating Systems/614G01016
Networks/614G01017
Other comments
Gender perspective: According to the different regulations applicable to university teaching, a gender perspective should be incorporated in this subject (e.g. use of non-sexist language...). We will try to identify and modify any prejudices and sexist attitudes, and we will try to influence the context to modify and promote values of respect and equality. To sum up, we will try to detect situations of discrimination (including those related to gender discrimination) and to provide actions and measures to correct them.

(*)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.