



IDENTIFYING DATA

Information Systems

Subject	Information Systems			
Code	V05G300V01644			
Study programme	(*)Grao en Enxeñaría de Tecnoloxías de Telecomunicación			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	3rd	2nd
Teaching language	Spanish			
Department				
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Lecturers	Pazos Arias, José Juan Ramos Cabrer, Manuel			
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General description	The aim of this subject is to introduce to the student in the main technologies to process and store the information, like central element of the telematic services			

Competencies

Code	
A3	CG3: The knowledge of basic subjects and technologies that capacitates the student to learn new methods and technologies, as well as to give him great versatility to confront and update to new situations
A4	CG4: The ability to solve problems with initiative, to make creative decisions and to communicate and transmit knowledge and skills, understanding the ethical and professional responsibility of the Technical Telecommunication Engineer activity.
A6	CG6: The aptitude to manage mandatory specifications, procedures and laws.
A9	CG9: The ability to work in multidisciplinary groups in a Multilanguage environment and to communicate, in writing and orally, knowledge, procedures, results and ideas related with Telecommunications and Electronics.
A36	CE27/TEL1 The ability to construct, operate and manage telecommunication networks, services, processes and applications considered as systems to receive, transport, represent, process, store, manage and present multimedia information from the computer services point of view.
A38	CE29/TEL3 The ability to build, operate and manage computer services using planning, sizing and analytical tools

Learning aims

Expected results from this subject	Training and Learning Results
TEL1 The ability to construct, operate and manage telecommunication networks, services, processes and applications considered as systems to receive, transport, represent, process, store, manage and present multimedia information from the computer services point of view.	A36
Know the main mechanisms of search, recovery and presentation of the information.	A36
Know the concept of metainformation and his main applications in the new telematic services.	A36
TEL3 The ability to build, operate and manage computer services using planning, sizing and analytical tools	A38
CG3: The knowledge of basic subjects and technologies that capacitates the student to learn new methods and technologies, as well as to give him great versatility to confront and update to new situations	A3
CG4: The ability to solve problems with initiative, to make creative decisions and to communicate and transmit knowledge and skills, understanding the ethical and professional responsibility of the Technical Telecommunication Engineer activity.	A4
CG6: The aptitude to manage mandatory specifications, procedures and laws.	A6

Contents	
Topic	
Introduction and general perspective of the Systems of Information.	<ul style="list-style-type: none"> - Concepts of system of information and database. - Types of systems of information. - Concept of Managing System of Databases. - Models of databases. - The process of design of a database.
Design of Relational Databases: Conceptual Model.	<ul style="list-style-type: none"> - Aims of the conceptual design. - Conceptual models of databases. - The E-A model.
Design of Relational Databases: Logical Model.	<ul style="list-style-type: none"> - Concept of the logical design. - Logical models of databases. - The relational model. - Relational algebra. - Relational calculus. - Normalisation of databases.
Database Management Systems.	<ul style="list-style-type: none"> - Physical storage of the data. - Organisation of data in files. - Indexes and associations. - Management of the integrity of the data. - Consistency. - Concepts related with the security. - Optimisation of queries.
Other information systems.	<ul style="list-style-type: none"> - No relational databases. - Semistructured information Processing. - No-structured information Processing. - Meta-information and information semantics: - Semantic information processing. - Semantic web and ontologies.

Planning			
	Class hours	Hours outside the classroom	Total hours
Master Session	20	46	66
Practice in computer rooms	13	26	39
Workshops	5	30	35
Multiple choice tests	1	0	1
Practical tests, real task execution and / or simulated.	1	0	1
Jobs and projects	2	6	8

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies	
	Description
Master Session	Presentation of the ideas, concepts, technics and algorithms of each lesson. This activity develops CG3, CG4 and CG6 competencies.
Practice in computer rooms	The students will resolve practical problems under supervision of teachers. This activity develops CG4, CE29/TEL3 and CE27/TEL1 competencies.
Workshops	Each group of students will tackle the design and implementation of a software project with half complexity. This task will be realised in successive steps, that will be discussed and validated in the face-to-face sessions. The aim of this methodology is to provide a suitable feedback to improve the proposed solutions. his activity develops CG9, CE27/TEL1 and CG4 competencies.

Personalized attention	
Methodologies	Description
Workshops	Personalised attention will be dispensed through individual and face-to-face meetings scheduled at the beginning of the course. For practices and workshops, the personal attention will be articulated by means of the follow-up of the job of each student, monitoring the partial proposed solutions and reorienting them if it was necessary.

Practice in computer rooms	Personalised attention will be dispensed through individual and face-to-face meetings scheduled at the beginning of the course. For practices and workshops, the personal attention will be articulated by means of the follow-up of the job of each student, monitoring the partial proposed solutions and reorienting them if it was necessary.
Master Session	Personalised attention will be dispensed through individual and face-to-face meetings scheduled at the beginning of the course. For practices and workshops, the personal attention will be articulated by means of the follow-up of the job of each student, monitoring the partial proposed solutions and reorienting them if it was necessary.

Assessment

	Description	Qualification
Multiple choice tests	Proof of theoretical contents exposed in the master classes. In these proofs CG3, CG4 and CG6 competencies will be evaluated.	60
Practical tests, real task execution and / or simulated.	Validation of the work realised in every laboratory session. In these proofs CG4, CE27/TEL1 and CE29/TEL3 competencies will be evaluated.	20
Jobs and projects	In the last face-to-face session of workshop, students will deliver and will expose to their mates the design and the proposed solution for their project. This solution will be exposed to debate for students and professors. In these proofs CG4, CE27/TEL1 and CG9 competencies will be evaluated.	20

Other comments on the Evaluation

The subject can be surpassed by means of Continuous Evaluation according to the following criteria, having opened the possibility to opt by the No Continuous Evaluation anytime until the beginning of the final examination to celebrate the day fixed to such effect in the official calendar of the EET. All those students that opt by the continuous evaluation will consider presented if they evaluate of the part of the work in Workshops.

Continuous evaluation:

The final note will result of the sum of the corresponding notes to the three following components:

- Four proofs of type Test to evaluate the contents given in the masterclasses. Each proof will take place in one of the master classes , except the last that will realise in one of the sessions of the Workshop.

Punctuation: Up to 1,5 points each proof.

- Six Practical Proofs that will realise when finalising each one of the sessions of laboratory and that will consist in the validation of the results obtained during said session.

Punctuation: Up to 1/3 points each proof.

- Presentation of the Project proposed like work in the sessions of the Workshop.

Punctuation: Up to 2 points.

To pass the subject by Continuous Evaluation will have to give the three following conditions: (i) obtain an equal or upper qualification to 2 points in the group of the tests.; (ii) Upper qualification to 0 points in, at least, four of the six practical proofs; and (iii) to attend all the face-to-face sessions and obtain more than 0 points in the presentation of the project.

No Continuous Evaluation:

By means of an examination on 10 points scheduled in the official calendar of the EET.

Final Call:

It will be governed by the indicated for the No Continuous evaluation.

Sources of information

Basic resources:

[2] [\[SQL *Cookbook\]](#). Anthony *Molinaro. 1º edition. 2005, O'Reilly Half.

[1] [\[*Fundamentals *of *Database *Systems\]](#). *Ramez *Elmasri And *Shamkant *Navathe. 6ª edition. 2010, Addison

Wesley.

- [3] [] *To *First *Course *in *Database *Systems*[]. Jeffrey D. *Ullman And Jennifer *Widom. 3ª edition. 2007, *Prentice *Hall.
- [5] [] **Database *Design *and *Relational *Theory: Normal *Forms *and *All *That Jazz*[]. Chris *J. Give you. 1ª edition. 2012, O'Reilly Half.
- [7] [] **Professional Apache *Tomcat 6*[]. *Vivek *Chopra, *Sing *Li and Jeff *Genender . 1ª edition. 2007, *Wrox.
- [9] [] **Beginning *JSP , *JSF *and *Tomcat Web *Development: *From *Novice *to *Professional*[]. Giulio *Zambon and Michael *Sekler. 1ª edition. 2007, *Apress.
- [11] [] **Beginning *JavaServer *Pages*[]. *Vivek *Chopra, Jon *Eaves, *Rupert Jones and *Sing *Li. 1ª edition. 2005, *Wrox.

Recommendations

Subjects that are recommended to be taken simultaneously

Architectures and Services/V05G300V01645

Distributed and Concurrent Programming/V05G300V01641

Subjects that it is recommended to have taken before

Programming II/V05G300V01302

Internet Services/V05G300V01501

Operating Systems/V05G300V01541
