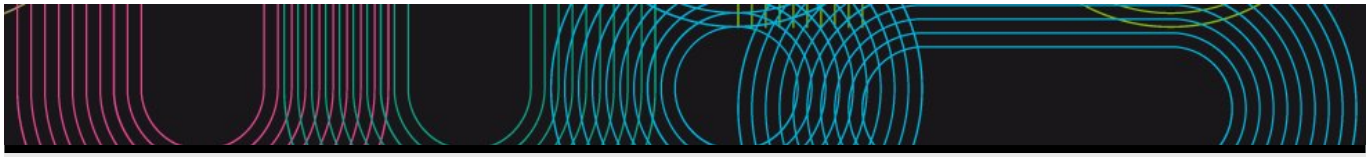

IDENTIFYING DATA				
Storage and information management				
Subject	Storage and information management			
Code	P52M182V01306			
Study programme	Master Universitario en Dirección TIC para la defensa			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Optional	2nd	1st
Teaching language	Spanish			
Department				
Coordinator	Fernández García, Norberto			
Lecturers	Fernández García, Norberto			
E-mail	norberto@cud.uvigo.es			
Web	http://https://moovi.uvigo.gal			
General description	The Storage and Information Management course aims to offer students a comprehensive and general overview of the current state of the models, techniques and tools for data storage, analysis, presentation and management.			

Skills	
Code	
A6	CB6 - Possess and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context.
A7	CB7 - That students know how to apply the acquired knowledge and their ability to solve problems in new or poorly understood environments within broader (or multidisciplinary) contexts related to their area of study.
A8	CB8 - That students are able to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.
A9	CB9 - That students know how to communicate their conclusions and the knowledge and ultimate reasons that support them to a specialized and unspecialized public in a clear and unambiguous way.
A10	CB10 - That students possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.
B1	CG1 - Possess advanced and highly specialized knowledge and demonstrate a detailed and well-founded understanding of the theoretical and practical aspects dealt with in the different areas of study.
B5	CG5 - Critically evaluate the structure and validity of reasoning, analyzing, interpreting, and questioning the foundations of ideas, actions, and judgments of oneself or others, before accepting them as valid.
C16	CISTI2 - Manage information as a strategic asset in the storage, volumetric and intelligence aspects of the data.
D4	CT4 - Oral and written communication skills.
D5	CT5 - Autonomous learning and work.
D6	CT6 - Properly manage information resources.

Learning outcomes	
Expected results from this subject	Training and Learning Results
LO1: Know the persistent data storage systems and infrastructures, their typology, structure and basic operation.	A6 A10 B1 B5 C16 D4 D5 D6

LO2: Distinguish structured and unstructured data and know the techniques and tools that allow the storage and management of each type, such as relational databases and information retrieval systems.	A6 A10 B1 B5 C16 D4 D5 D6
LO3: Know the techniques and tools that allow the efficient storage and processing of large volumes of data.	A6 A10 B1 B5 C16 D4 D5 D6
LO4: Understand the data mining process, its main stages and the techniques used in it to extract knowledge from the information provided by data.	A6 A7 A10 B1 B5 C16 D4 D5 D6
LO5: Know the basic principles on which data visualization techniques are based and their use when designing user interfaces that allow information to be presented effectively.	A6 A9 A10 B1 B5 C16 D4 D5 D6
LO6: Assess the importance for the organization of adequate data management and the elements that are involved in it.	A7 A8 A9 B1 B5 C16 D4 D5 D6

Contents	
Topic	
Persistent data storage	- Types of persistent storage systems - Data storage infrastructures
Databases and information retrieval systems	- Structured and unstructured data - Relational data model - Query languages - Information retrieval techniques - Tools
Management of large volumes of data (Big data)	- Definition and motivation - Paradigms of distributed data processing - Tools
Data mining	- Stages of the data mining process - Data analysis techniques - Tools
Data visualization	- Basic principles of data visualization - User interfaces

Planning			
	Class hours	Hours outside the classroom	Total hours
Previous studies	0	42	42
Lecturing	12	8	20

Discussion Forum	0	4	4
Presentation	4	0	4
Objective questions exam	1	0	1
Self-assessment	0	4	4

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

Methodologies

	Description
Previous studies	Search, reading, documentation work and / or autonomous development of any other activity that the student considers necessary to allow him / her to acquire knowledge and skills related to the subject. It is usually carried out before classes, laboratory practices and / or evaluation tests.
Lecturing	Presentation by a lecturer of the contents of the subject under study, theoretical bases and / or guidelines of a work or exercise that the student has to develop.
Discussion Forum	Activity carried out in a virtual environment where a variety of current issues related to the academic and / or professional field are debated.

Personalized assistance

Methodologies	Description
Lecturing	Given the blended nature of the course, we will distinguish two cases: (1) Attention in the distance phase: it will be carried out through the use of telematic means. Students who wish to do so may raise questions to the faculty in forums or by email. They will also be able to arrange individual tutories with the lecturer, which will take place via videoconference. (2) Attention in the face-to-face phase: although the use of telematic mechanisms is still possible, during this phase face-to-face tutoring mechanisms will also be used.

Assessment

	Description	Qualification	Training and Learning Results
Discussion Forum	Activity carried out in a virtual environment where a variety of current issues related to the academic and / or professional field are debated. It allows evaluating the skills, knowledge and, to a lesser extent, the attitudes of the student. Participation in the forums will be evaluated.	10	A9 B1 C16 D4 B5 D5
Presentation	Presentation by the students, individually or in groups, of a topic related to the contents of the course or the results of a work, exercise, project, etc. Through the presentation, knowledge, skills and attitudes can be evaluated.	40	A6 B1 C16 D4 A7 B5 D5 A8 D6 A9 A10
Objective questions exam	Test that assesses knowledge and includes closed questions with different answer alternatives (true or false, multiple choice, pairing of elements, etc.). Students select an answer from a limited number of possibilities.	30	A6 B1 C16 D5 A10 B5
Self-assessment	Mechanism in which, through a series of questions or activities (in this case, through a series of objective tests) it is possible for the student to independently evaluate their degree of acquisition of knowledge and skills on the subject, allowing a self-regulation of the personal learning process.	20	A6 B1 C16 D5 A10 B5

Other comments on the Evaluation

It will be necessary to obtain at least 50% of the grade to pass the subject in ordinary call.
In the event that the student fails to pass the subject in the ordinary call, they will have the right to a second evaluation opportunity (extraordinary call) on the dates established for this purpose by the Master's Academic Committee. The evaluation of the extraordinary call will be carried out remotely, through the evaluation of a deliverable that will account for 60% of the grade and the completion of a written test (with written questions and / or multiple choice) using the e-learning platform, which will mean the remaining 40%. It will be necessary to obtain at least 50% of the grade to pass the course.
Fraud or attempted fraud by the student in the evaluation process (copying or plagiarism or its facilitation to third parties) will be penalized by directly granting a failure grade (0.0) in the call in which it occurs.
In the case of any difference between the Galician/Spanish/English guides related to the evaluation, the Spanish guide will always prevail.

Sources of information

Basic Bibliography

Complementary Bibliography

Raghu Ramakrishnan, Johannes Gehrke, **Database Management Systems**, 3, McGraw Hill, 2002

Christopher D. Manning, Prabhakar Raghavan, Hinrich Schütze, **Introduction to Information Retrieval**, Cambridge University Press, 2008

Eric. A. Vanderburg, **SCSP SNIA Certified Storage Professional All-in-One Exam Guide (Exam S10-110)**, McGraw-Hill Education, 2017

Ian H. Witten, Eibe Frank, Mark A. Hall, Christopher J. Pal, **Data Mining: Practical Machine Learning Tools and Techniques**, 4, Morgan Kaufmann, 2016

Jenifer Tidwell, Charles Brewer, Aynne Valencia, **Designing Interfaces: Patterns for Effective Interaction Design**, 3, O'Reilly, 2020

Recommendations

Subjects that it is recommended to have taken before

Information systems/P52M182V01105