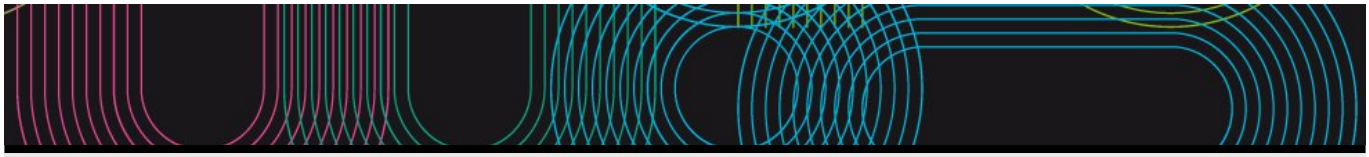

IDENTIFYING DATA				
Information systems				
Subject	Information systems			
Code	P52M182V01105			
Study programme	Master Universitario en Dirección TIC para la defensa			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	Spanish			
Department				
Coordinator	Álvarez Sabucedo, Luis Modesto			
Lecturers	Álvarez Sabucedo, Luis Modesto			
E-mail	lsabucedo@det.uvigo.es			
Web	http://campus.defensa.gob.es | https://moovi.uvigo.gal			
General description	The Information Systems subject aims to offer students an integrated vision of the different elements necessary to make the holistic concept of Information Systems possible from a technological perspective. To this end, the different technologies and paradigms that are used in the different layers involved in the design and development of Information Systems will be examined. The proposed approach, far from seeking to show low-level descriptions, seeks a high-level approach concerned with the advantages and disadvantages of the different possibilities.			

Training and Learning Results	
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.
C8	CE8 - Analyze and model the architecture of an information system, including its main components and functions, as well as the mechanisms that enable these components to be articulated, especially in distributed environments.
D4	CT4 - Oral and written communication skills.
D5	CT5 - Autonomous learning and work.

Expected results from this subject	
Expected results from this subject	Training and Learning Results

LO1. To know how to identify the architecture and components of a given service model.	A6 A7 A8 A9 A10 B1 B5 C8 D4 D5
LO2. To understand the different models for information storage	A6 A7 A8 A9 A10 B1 B5 C8 D4 D5
LO3. To understand the basic principles of information classification and analysis.	A6 A7 A8 A9 A10 B1 B5 C8 D4 D5
LO4. To know the fundamental elements of information interface design.	A6 A7 A8 A9 A10 B1 B5 C8 D4 D5
LO5. To understand the basic characteristics of information systems and their impact on the use of information systems.	A6 A7 A8 A9 A10 B1 B5 C8 D4 D5
LO6. To know the basic principles of information systems in the military area.	A6 A7 A8 A9 A10 B1 B5 C8 D4 D5

Contents

Topic	
Architecture and components of an information system	- Basic concepts of software architectures - Architecture models - Layered architecture models - Most common technologies

Databases and information storage mechanisms	- Basic concepts of information management - Metadata for information management - Information representation models - Structured information storage media - Introduction to NoSQL databases - Introduction to semantic information models
Processing and presentation of information	- Introduction to Big Data and its applications - Statistical information processing - Basic concepts in interface design - Technological solutions applied to the final presentation of information.
Distributed information systems	- Distributed systems concepts - P2P models - BlockChain model
Information management	- Introduction and basic concepts - The DMBoK data management model

Planning

	Class hours	Hours outside the classroom	Total hours
Discussion Forum	0	3	3
Autonomous problem solving	0	6	6
Previous studies	0	38	38
Lecturing	7	7	14
Presentation	6	0	6
Problem solving	1	1	2
Self-assessment	0	3	3
Essay questions exam	1	0	1

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

Methodologies

	Description
Discussion Forum	An activity carried out in a virtual environment in which a variety of current topics related to the academic and/or professional sphere are debated.
Autonomous problem solving	Activity in which students analyse and solve problems and/or exercises related to the subject independently.
Previous studies	Research, reading, documentation work and/or autonomous performance of any other activity that the student considers necessary to enable him/her to acquire knowledge and skills related to the subject. This is usually carried out prior to classes, laboratory practicals and/or assessment tests.
Lecturing	Presentation by a lecturer of the contents of the subject being studied, theoretical bases and/or guidelines for a project or exercise to be carried out by the student.
Presentation	Activity in which problems and/or exercises related to the subject are formulated. The student must develop appropriate and correct solutions by exercising routines, applying formulas or algorithms, applying procedures for transforming the available information and interpreting the results.
Problem solving	Assessment test which includes open questions and/or exercises on a topic. Students must develop, relate, organise and present their knowledge of the subject in a reasoned response. It can be used to assess knowledge and skills.

Personalized assistance

Methodologies	Description
Lecturing	Given the blended nature of the course, we will distinguish between two cases: 1. Attention in the distance phase: this will be carried out through the use of telematic means. Students who wish to do so may ask the teacher questions in forums or by e-mail. They will also be able to arrange individual tutorials with the teacher, which will be carried out by videoconference. 2. Attention in the face-to-face phase: although it is still possible to use telematic mechanisms for student attention, during this phase, face-to-face tutoring mechanisms (individual and/or group) will also be used.
Presentation	Attention in the face-to-face phase: although it is still possible to use telematic mechanisms for student attention, face-to-face tutoring mechanisms (individual and/or group) will also be used during this phase.

Assessment

	Description	Qualification	Training and Learning Results

Discussion Forum	An activity carried out in a virtual environment in which a variety of current topics related to the academic and/or professional sphere are debated. It allows the evaluation of the student's skills, knowledge and, to a lesser extent, attitudes. Participation in the forums will be assessed during the online part of the course.	5	A8 A10	C8 D5
Presentation	Presentation by the students, individually or in groups, of a topic related to the contents of the subject or the results of a work, exercise, project, etc. Knowledge, skills and attitudes will be assessed through the presentation. It will take place during the face-to-face phase of the course. It will be based on the work done during the online phase of the course.	20	A6 A7 A9	B1 B5 C8 D4
Self-assessment	A mechanism in which, by means of a series of questions or activities, it is possible for the student to autonomously evaluate his/her degree of acquisition of knowledge and skills on the subject, allowing self-regulation of the personal learning process. It will take place during the online phase of the course and will include the contents presented in this first part of the course.	35	A8 A10	B1 C8 D5
Essay questions exam	Assessment test which includes open questions and/or exercises on a topic. Students must develop, relate, organise and present their knowledge of the subject in a reasoned response. It will be used to assess knowledge and skills. It will take place during the face-to-face phase of the course and will include all course content.	40	A6 A7	B1 C8 D4

Other comments on the Evaluation

A continuous assessment mechanism will be used, with the aim of monitoring the student's progress throughout the course, assessing their overall effort, and trying to detect as early as possible any difficulties that may arise in the learning process.

It will be necessary to achieve at least the 40% of the grade in order to pass the course in the presentation, self-assessment test and essay questions exam.

In the event that the student does not manage to pass the subject in the ordinary exam, he/she will have the right to a second evaluation opportunity (extraordinary exam). Those students who take the extraordinary exam will have to pass a written exam in which the whole syllabus may be evaluated and in which it will be necessary to achieve at least 50% of the grade in order to pass the subject.

ACADEMIC INTEGRITY:

Students are expected to show adequate ethical behaviour, committing to act honestly. Based on article 42.1 of the *Regulation on the evaluation, qualification and quality of teaching and the student learning process of the University of Vigo*, **any violation of academic integrity in the assessment process, as well as the cooperation in it will result in the assignment of a failing grade to the student (zero) for the entire course in the corresponding assessment opportunity**, regardless of the percentage of importance that the test in question had in the overall continuous assessment and independently of other disciplinary actions that may be applied.

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

Teaching staff, **Slides from class**, 2022

Complementary Bibliography

Roger S. Pressman, **Ingeniería del Software**, 7, McGraw-Hill Interamericana, 2010

Korth, Henry, and Abraham Silberschatz, **Fundamentos de bases de datos**, 6, McGraw-Hill Interamericana de España S.L.;, 2014

Grigoris Antoniou, Frank Harmalen, **Manual de web semántica**, COMARES, 2011

Brendan Burns, **Designing Distributed Systems: Patterns and Paradigms for Scalable, Reliable Services**, 1, O'Reilly Media, 2018

Zikopoulos, Paul, and Chris Eaton., **. Understanding big data: Analytics for enterprise class hadoop and streaming data**, McGraw-Hill Osborne Media, 2011

DAMA-DMBOK: Data Management Body of Knowledge: 2nd Edition (Inglés), 2, Technics Publications, 2011

Recommendations