Teaching Guide			
Identifying Data			2023/24
Subject (*)	Programming, Analysis and Query Languages for Information Management	Code	710G04029
Study programme	Grao en Xestión Dixital de Información e Documentación		

Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	Third	Optional	6

Language	Spanish		
Teaching method	Face-to-face		
Prerequisites			
Department	Ciencias da Computación e Tecnoloxías da Información		
Coordinador	Gutiérrez Asorey, Pablo	E-mail	pablo.gutierrez@udc.es
Lecturers	Gutiérrez Asorey, Pablo Lamas Sardiña, Víctor Juan	E-mail	pablo.gutierrez@udc.es victor.lamas@udc.es
Web			
General description	The objective of the course is to know how to use programming languages ??to obtain and manage digital and documentary information.		

Study programme competences	
Code	Study programme competences
A1	CE1 - Know and understand the theoretical and methodological principles of information and documentation management to apply them in their professional activity
A8	CE8 - Master the different methods of representation of data, information and knowledge that ensure efficient recovery
A10	CE10 - Design computer tools for representation and retrieval of information from the user's perspective
A13	CE13 - Know and master the techniques and regulations for the creation and authentication, meeting, selection, organization, representation, preservation, recovery, access, dissemination and exchange, and evaluation of resources and information services
A19	CE19 - Determine and apply methods, measures and techniques designed to order, protect, preserve and restore data, information and documents of different nature
A20	CE20 - Master the bases to develop research activities using multidisciplinary methods and principles
A22	CE22 - Acquire computational skills and management of new ICT
B1	CB1 - 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
B2	CB2 - Apply the knowledge acquired and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study
B3	CB3 - Be able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and judgments
B4	CB4 - Know how to communicate their conclusions -and the knowledge and ultimate reasons that sustain them- to specialized and non-specialized audiences in a clear and unambiguous way
B5	CB5 - Possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous
B6	CG1 - Capacity for cooperation, teamwork and collaborative learning
B7	CG2 - Capacity for reflection and critical reasoning
B8	CG3 - Capacity for planning, organization and management of resources, information and operations
B9	CG4 - Capacity for analysis, diagnosis and decision making
B10	CG5 - Ability to work in an international and global context
B11	CG6 - Ability to understand the importance, value and function of the Digital Information and Documentation Management in the current ICT society
C1	CT1 - Express correctly, both orally and in writing, in the official languages ??of the autonomous community
C2	CT2 - Use the basic tools of information and communication technologies (ICT) necessary for the exercise of their profession and for learning throughout their lives

C3	CT3 - Develop oneself for the exercise of a citizenship that respects democratic culture, human rights and the gender perspective
C4	CT4 - Understand the importance of the entrepreneurial culture and know the means available to entrepreneurs
C5	CT5 - Acquire skills for life and habits, routines and healthy lifestyles
C6	CT6 - Develop the ability to work in interdisciplinary or transdisciplinary teams, to offer proposals that contribute to a sustainable environmental, economic, political and social development
C7	CT7 - Assess the importance of research, innovation and technological development in the socio-economic and cultural progress of society
C8	CT8 - Have the ability to manage time and resources: develop plans, prioritize activities, identify criticisms, establish deadlines and comply with them

Learning outcomes			
Learning outcomes	Study programme competences		
Saber construír unha base de datos nun entorno cliente-servidor multiusuario	A1 A8 A10 A13 A19 A20 A22	B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11	C1 C2 C3 C4 C5 C6 C7 C8
Saber obter información dunha base de datos relacional empregando a linguaxe SQL.	A1 A8 A10 A13 A19 A20 A22	B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11	C1 C2 C3 C4 C5 C6 C7 C8
Saber resolver problemas básicos empregando as linguaxes de programación máis relevantes no campo da ciencia de datos.	A1 A8 A10 A13 A19 A20 A22	B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11	C1 C2 C3 C4 C5 C6 C7 C8

Contents	
Topic	Sub-topic

Database management systems	Creation of databases in multi-user environments Querying information in databases using SQL language
Programming languages	Basic programming concepts: algorithms, programs, programming languages, ... Control statements: sequential, conditional, repetitive, ... Architecture of a program: functions and modules Simple data structures: registers, vectors, texts

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
ICT practicals	A1 A8 A10 A13 A19 A20 A22 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 C1 C2 C3 C4 C5 C6 C7 C8	17	17	34
Supervised projects	A1 A8 A10 A13 A19 A20 A22 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 C1 C2 C3 C4 C5 C6 C7 C8	4	80	84
Practical test:	A1 A8 A10 A13 A19 A20 A22 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 C1 C2 C3 C4 C5 C6 C7 C8	0	11	11
Guest lecture / keynote speech	A1 A8 A10 A13 A19 A20 A22 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 C1 C2 C3 C4 C5 C6 C7 C8	21	0	21
Personalized attention		0	0	0
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
ICT practicals	Consiste na realización durante o período docente de prácticas relacionadas cos sistemas de xestión de bases de datos e as linguaxes de programación.
Supervised projects	Consiste na realización autónoma dun traballo relacionados cos sistemas de xestión de bases de datos e linguaxes de programación, que se entregará ao remate do período lectivo.
Practical test:	Consiste na defensa por parte do alumno do traballo tutelado na data oficial do exame.
Guest lecture / keynote speech	Consiste na exposición por parte do docente dos contidos da materia.

Personalized attention	
Methodologies	Description
ICT practicals Supervised projects	Se estima que entre o alumnado haberá diferencias notables tanto en canto á sua familiariación con conceptos e termos informáticos, como en canta ás habilidades para o manexo de ferramentas informáticas. Por iso, prevese desenvolver unha atención personalizada para as prácticas a través de TIC e para os traballos tutelados. A atención personalizada desenvolverase de forma individualizada durante as clases ou nas horas de titoría.

Assessment			
Methodologies	Competencies	Description	Qualification
ICT practicals	A1 A8 A10 A13 A19 A20 A22 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 C1 C2 C3 C4 C5 C6 C7 C8	Avaliarase a solución aplicada polos estudantes ao problema proposto e a interacción entre os membros do grupo.	50
Supervised projects	A1 A8 A10 A13 A19 A20 A22 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 C1 C2 C3 C4 C5 C6 C7 C8	Avaliarase que o traballo realizado cumpre cos criterios descritos no enunciado.	50
Practical test:	A1 A8 A10 A13 A19 A20 A22 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 C1 C2 C3 C4 C5 C6 C7 C8	Ao remate dos traballos tutelados, cada estudante realizará unha defensa ante os docentes do seu traballo. O resultado desta defensa ponderará a cualificación obtida no traballo tutelado de xeito que a súa cualificación pode aumentar ou diminuír.	0

Assessment comments
PRIMEIRA OPORTUNIDADE Para aprobar a materia é obrigatorio aprobar os traballos tutelados, unha vez ponderada a cualificación en función do resultado da proba práctica. É dicir, deberase obter unha nota mínima de 2,5 sobre 5. Se non se obtén a nota mínima nos traballos tutelados, a nota máxima global da materia non superará o 4,5. Todo/a alumno/a que non realice a proba práctica do traballo tutelado terá a cualificación de NON PRESENTADO. SEGUNDA OPORTUNIDADE Poderán presentarse á segunda oportunidade UNICAMENTE aqueles/as estudantes que non superen a materia na primeira oportunidade. A recuperación de cada parte se realizará en condicións similares ás da primeira oportunidade, sendo de novo necesario obter unha nota de 2,5 sobre 5 no traballo tutelado (unha vez ponderada a nota polo resultado da proba práctica). Terá cualificación de NON PRESENTADO calquera estudante que opte por non recuperar ningunha das partes. DISPENSA ACADÉMICA Dado que a asistencia ás clases presenciais non é obrigatoria, terán as mesmas condicións que o resto do alumnado aquel alumnado con matrícula a tempo parcial e con dispensa académica que o exima da asistencia ás clases. OPORTUNIDADE ADIANTADA Utilizaranse criterios de segunda oportunidade. IMPLICACIÓNS DO PLAXIO A realización fraudulenta das probas ou actividades de avaliación, unha vez comprobada, implicará directamente a cualificación de suspenso na convocatoria en que se cometa: o/a estudante será cualificado con ?suspenso? (nota numérica 0) na convocatoria correspondente do curso académico, tanto se a comisión da falta se produce na primeira oportunidade como na segunda. Para isto, procederase a modificar a súa cualificación na acta de primeira oportunidade, se fose necesario.

Sources of information	
Basic	Dado o caracter esencialmente práctico desta asignatura, a bibliografía estará composta polos manuais das ferramentas informáticas descritas.
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Information Systems for Document Management/710G04025 Information Technology for the Treatment and Management of Information/710G04024
Subjects that are recommended to be taken simultaneously

Subjects that continue the syllabus
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.