



## Teaching Guide

Identifying Data					2023/24
Subject (*)	Information Systems Architecture	Code	614G01075		
Study programme	Grao en Enxeñaría Informática				
Descriptors					
Cycle	Period	Year	Type	Credits	
Graduate	1st four-month period	Fourth	Optional	6	
Language	SpanishGalician				
Teaching method	Hybrid				
Prerequisites					
Department	Ciencias da Computación e Tecnoloxías da InformaciónComputación				
Coordinador	Cortiñas Álvarez, Alejandro	E-mail	alejandro.cortinas@udc.es		
Lecturers	Bernardo Roca, Guillermo de Cortiñas Álvarez, Alejandro	E-mail	guillermo.debernardo@udc.es alejandro.cortinas@udc.es		
Web					
General description	<p>The objectives of this subject are:</p> <ul style="list-style-type: none"> <li>- To know the basic concepts of the architecture of information systems, the conceptual models to define these architectures, and the languages to represent them</li> <li>- To know how to model the architecture of an information system using design patterns</li> <li>- To know how to integrate information systems by means of different software techniques</li> <li>- To know modern technological solutions to develop information systems</li> </ul>				

## Study programme competences / results

Code	Study programme competences / results
A47	Capacidade para determinar os requisitos dos sistemas de información e comunicación dunha organización de acordo cos aspectos de seguridade e cumprimento da normativa e a lexislación vixente.
A48	Capacidade para participar activamente na especificación, deseño, implementación e mantemento dos sistemas de información e comunicación.
A49	Capacidade para comprender e aplicar os principios e as prácticas das organizacións, de forma que poidan exercer como enlace entre as comunidades técnica e de xestión dunha organización, e participar activamente na formación dos usuarios.
B1	Capacidade de resolución de problemas
B2	Traballo en equipo
B3	Capacidade de análise e síntese
B4	Capacidade para organizar e planificar
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.
C6	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.

## Learning outcomes

Learning outcomes	Study programme competences / results		
To know the basic concepts of the architecture of information systems	A47	B1	C3
	A48	B2	C6
	A49	B3	
		B4	



To know the conceptual models to define the architecture of information systems	A47 A48 A49	B1 B2 B3 B4	C3 C6
To know the languages to represent the architecture of information systems	A47 A48 A49	B1 B2 B3 B4	C3 C6
To know how to model the architecture of an information system using design patterns	A47 A48 A49	B1 B2 B3 B4	C3 C6
To know how to integrate information systems by means of different software techniques	A47 A48 A49	B1 B2 B3 B4	C3 C6
To know how to create an information system using a service-oriented architecture	A47 A48 A49	B1 B2 B3 B4	C3 C6
To know modern technological solutions to develop information systems	A47 A48 A49	B1 B2 B3 B4	C3 C6

Contents	
Topic	Sub-topic
Conceptos básicos	Definición de arquitectura de sistemas de información Modelos conceptuais para arquitecturas de sistemas de información Linguaxes para arquitecturas de sistemas de información
Modelado de arquitecturas de sistemas de información	Patróns de deseño Integración de sistemas Arquitecturas orientadas a servizos
Solucións tecnolóxicas	Xestión da infraestrutura Librerías de desenvolvemento

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student's personal work hours	Total hours
Guest lecture / keynote speech	A47 A48 A49 B1	8	0	8
Collaborative learning	A47 A48 A49 B1 B2 B3 B4 C3 C6	3	0	3
Case study	A47 A48 A49 B1 B2 B3 B4 C3 C6	10	20	30
Supervised projects	A47 A48 A49 B1 B2 B3 B4 C3 C6	18	72	90
Oral presentation	B2 B3 B4 C3 C6	3	6	9
Practical test:	B1 B3 B4 C3 C6	0	6	6
Personalized attention		4	0	4

(\*)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	Lectures that will present theoretical contents in combination with practical exercises.
Collaborative learning	Resolution by teams of students of problems of reduced size related to the contents of the subject.
Case study	Presentation to the students of real cases that have to be resolved using the knowledge acquired in the subject.
Supervised projects	Development by each student of projects in which they put in practice what was learnt in the subject.
Oral presentation	Intervención inherente aos procesos de ensino-aprendizaxe baseada na exposición verbal a través da que o alumnado e profesorado interactúan dun modo ordenado, propoñendo cuestións, facendo aclaracións e expoñendo temas, traballos, conceptos, feitos ou principios de forma dinámica.
Practical test:	Proba na que se busca que o alumno desenvolva total ou parcialmente algunha práctica que previamente tivese feito durante as clases prácticas. A proba práctica pode incluír previamente a resolución dunha pregunta/problema que teña como resultado a aplicación práctica dunha determinada técnica ou práctica aprendida.

## Personalized attention

Methodologies	Description
Supervised projects Case study	<p>After proposing a problem, the professor will debate with the students the possible solutions and typical errors until a satisfactory solution is reached.</p> <p>In the laboratory practices, there will be a personalized attention to each student because there will be less than 20 people working in small groups, directly on a concrete application, in each computer and the professor will be able to attend punctual doubts to each student or group.</p>

## Assessment

Methodologies	Competencies / Results	Description	Qualification
Supervised projects	A47 A48 A49 B1 B2 B3 B4 C3 C6	The quality of the supervised projects will be assessed	60
Case study	A47 A48 A49 B1 B2 B3 B4 C3 C6	O alumnado, por grupos, realizará unha análise detallada dun caso real. Durante as clases farase un seguimento do traballo realizado por cada grupo, podendo orientar así o seu desenvolvemento. Ao remate do traballo entregarase un informe. Avaliarase tanto a calidade da memoria como o traballo realizado nas reunións de seguimento.	40
Oral presentation	B2 B3 B4 C3 C6	Ó finalizar o estudo do caso real, cada grupo realizará unha exposición oral apoiada en transparencias. Esta presentación ponderará a cualificación do estudo de casos.	0
Practical test:	B1 B3 B4 C3 C6	Os traballos tutelados rematarán cunha defensa individual na que o/a alumno/a terá que responder preguntas sobre o mesmo, ou implementar pequenos cambios ou funcionalidades sobre o mesmo código base. As defensas individuais ponderarán a cualificación do traballo.	0

## Assessment comments

<p>To pass you must obtain the following minimum qualifications:  Mixed test: 3 points out of 6 Supervised projects: 2 points out of 4  To be qualified as "did not attend" is to not submit the mixed test. The criteria for the second opportunity are the same as for the first opportunity.</p>
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## Sources of information



<b>Basic</b>	<ul style="list-style-type: none"><li>- Fowler, M (2002). Patterns of enterprise application architecture. Addison-Wesley Longman Publishing Co., Inc</li><li>- Hohpe, G., &amp; Woolf, B (2004). Enterprise integration patterns: Designing, building, and deploying messaging solutions. Addison-Wesley Professional</li><li>- Microsoft Patterns &amp; Practices Team (2009). Microsoft Application Architecture Guide (Patterns &amp; Practices). <a href="http://msdn.microsoft.com/en-us/library/ff650706.aspx">http://msdn.microsoft.com/en-us/library/ff650706.aspx</a></li></ul> <p>Os profesores poderán proporcionar nas clases bibliografía específica e webgrafía para cada un dos temas e actividades a desenvolver.</p>
<b>Complementary</b>	

## Recommendations

### Subjects that it is recommended to have taken before

Information Systems Analysis and Development/614G01041

Business Process Management/614G01042

### Subjects that are recommended to be taken simultaneously

Data Integration/614G01072

### 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.