| Teaching Guide | | | | |
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| Identifying Data | | | | 2020/21 |
| 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<br>Cortiñas Álvarez, Alejandro | E-mail | guillermo.debernardo@udc.es<br>alejandro.cortinas@udc.es | |
| Web | | | | |
| General description | The objectives of this subject are:<br><br>- To know the basic concepts of the architecture of information systems, the conceptual models to define these architectures, and the languages to represent them<br><br>- To know how to model the architecture of an information system using design patterns<br><br>- To know how to integrate information systems by means of different software techniques<br><br>- To know modern technological solutions to develop information systems | | | |
| Contingency plan | 1. Modifications to the contents<br><br>2. Methodologies<br>*Teaching methodologies that are maintained<br><br>*Teaching methodologies that are modified<br><br>3. Mechanisms for personalized attention to students<br><br>4. Modifications in the evaluation<br><br>*Evaluation observations:<br><br>5. Modifications to the bibliography or webgraphy | | | |

| 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 |

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

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

| Planning | | | | |
|---|---|---|---|---|
| Methodologies / tests | Competencies / Results | Teaching hours (in-person & virtual) | Student?s personal work hours | Total hours |
| Guest lecture / keynote speech | B1 | 14 | 0 | 14 |
| Collaborative learning | A47 A48 A49 B1 B3 C3 C6 | 14 | 0 | 14 |
| Case study | A47 A48 A49 B1 B3 C3 C6 | 14 | 0 | 14 |
| Supervised projects | A47 A48 A49 B1 B2 B3 B4 C3 C6 | 0 | 90 | 90 |
| Mixed objective/subjective test | A47 A48 A49 B3 C6 | 0 | 14 | 14 |
| 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. |
| Mixed objective/subjective test | Development of one individual written test where there will be both open questions and questions with brief answers |

| Personalized attention | |
|---|---|
| Methodologies | Description |
| Supervised projects<br>Collaborative learning<br>Case study | After proposing a problem, the professor will debate with the students the possible solutions and typical errors until a satisfactory solution is reached.<br><br>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. |

| Assessment | | | |
|---|---|---|---|
| Methodologies | Competencies / Results | Description | **Qualification** |
| Mixed objective/subjective test | A47 A48 A49 B3 C6 | Individual written test on theoretical and practical contents | 40 |
| Supervised projects | A47 A48 A49 B1 B2 B3 B4 C3 C6 | The quality of the supervised projects will be assesed | 50 |
| Case study | A47 A48 A49 B1 B3 C3 C6 | Seguimiento continuado dos exercicios e casos de diseño propostos durante as clases | 10 |

| Assessment comments |
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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.

| Sources of information | |
|---|---|
| Basic | - Fowler, M (2002). Patterns of enterprise application architecture. Addison-Wesley Longman Publishing Co., Inc<br>- Hohpe, G., & Woolf, B (2004). Enterprise integration patterns: Designing, building, and deploying messaging solutions. Addison-Wesley Professional<br>- Microsoft Patterns & Practices Team (2009). Microsoft Application Architecture Guide (Patterns & Practices). http://msdn.microsoft.com/en-us/library/ff650706.aspx<br>Os profesores poderán proporcionar nas clases bibliografía específica e webgrafía para cada un dos temas e actividades a desenvolver. |
| Complementary | |

| Recommendations |
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| Subjects that it is recommended to have taken before |
| Information Systems Analysis and Development/614G01041<br>Business Process Management/614G01042 |
| Subjects that are recommended to be taken simultaneously |
| Data Integration/614G01072 |
| Subjects that continue the syllabus |
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| Other comments |
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**(*)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.**