



## Teaching Guide

| Teaching Guide      |                                                                                                                                          |        |                                         |           |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------|-----------|
| Identifying Data    |                                                                                                                                          |        |                                         | 2017/18   |
| Subject (*)         | Data Warehousing                                                                                                                         |        | Code                                    | 614G01043 |
| Study programme     | Grao en Enxeñaría Informática                                                                                                            |        |                                         |           |
| Descriptors         |                                                                                                                                          |        |                                         |           |
| Cycle               | Period                                                                                                                                   | Year   | Type                                    | Credits   |
| Graduate            | 2nd four-month period                                                                                                                    | Third  | Obligatoria                             | 6         |
| Language            | SpanishGalician                                                                                                                          |        |                                         |           |
| Teaching method     | Face-to-face                                                                                                                             |        |                                         |           |
| Prerequisites       |                                                                                                                                          |        |                                         |           |
| Department          | Computación                                                                                                                              |        |                                         |           |
| Coordinador         | Gonzalez Ares, Luis Andres                                                                                                               | E-mail | luis.ares@udc.es                        |           |
| Lecturers           | Gonzalez Ares, Luis Andres<br>Ladra González, Susana                                                                                     | E-mail | luis.ares@udc.es<br>susana.ladra@udc.es |           |
| Web                 | moodle.udc.es                                                                                                                            |        |                                         |           |
| General description | As "Data Warehousing" we understand everything related to the database of the analytic environment and the course focuses on this matter |        |                                         |           |

## Study programme competences

| Code | Study programme competences                                                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A46  | Capacidade de integrar solucións de tecnoloxías da información e as comunicacións e procesos empresariais para satisfacer as necesidades de información das organizacións, permitíndolles alcanzar os seus obxectivos de forma efectiva e eficiente, e dándolles así vantaxes competitivas. |
| B3   | Capacidade de análise e síntese                                                                                                                                                                                                                                                             |
| B5   | Habilidades de xestión da información                                                                                                                                                                                                                                                       |
| 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.                                                                                                             |
| C7   | Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.                                                                                                                                                                                                            |
| C8   | Valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade.                                                                                                                                               |

## Learning outcomes

| Learning outcomes                                                                                                                                                                                                                                                                                                                           | Study programme competences |          |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|----------------|
| Coñecer os conceptos de bases de datos necesarios para afrontar o proceso ETL, entender o proceso analítico e diferencial do operacional, coñecer a arquitectura dun almacén de datos e saber efectuar o deseño e a explotación do mesmo, coa orientación á toma de decisións e incluíndo a utilización de ferramentas de minería de datos. | A46                         | B3<br>B5 | C3<br>C7<br>C8 |

## Contents

| Topic                          | Sub-topic |
|--------------------------------|-----------|
| Conceptos de Bases de Datos    |           |
| Introduction to Data Warehouse |           |
| Design of Data Warehouse       |           |
| Data Mining                    |           |

## Planning

| Methodologies / tests | Competencies       | Ordinary class hours | Student?s personal work hours | Total hours |
|-----------------------|--------------------|----------------------|-------------------------------|-------------|
| Laboratory practice   | A46 B3 B5 C3 C7 C8 | 14                   | 21                            | 35          |



|                                 |                    |    |    |    |
|---------------------------------|--------------------|----|----|----|
| Problem solving                 | A46 B3 B5 C3 C7 C8 | 7  | 14 | 21 |
| Workbook                        | A46 B3 B5 C7 C8    | 0  | 14 | 14 |
| Mixed objective/subjective test | A46 B3 B5 C3 C7 C8 | 3  | 0  | 3  |
| Supervised projects             | A46 B3 B5 C3 C7 C8 | 0  | 14 | 14 |
| Guest lecture / keynote speech  | A46 B3 B5 C7 C8    | 21 | 42 | 63 |
| Personalized attention          |                    | 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                                                                                                                                                                                                                                                                                        |
| Laboratory practice             | Son clases nas que se desenvolven as competencias procedimentais relacionadas cos contidos da asignatura. Nelas realizaranse probas e exercicios cuxo obxectivo é madurar os conceptos das clases teóricas, e introduciranse novos conceptos de carácter práctico que acompañaranse de exercicios. |
| Problem solving                 | Clases nas que se discutirán as estrategias de solución de diversos problemas propostos.                                                                                                                                                                                                           |
| Workbook                        | Se propondrá a lectura de diversos traballos que complementen e axuden a entender os conceptos plantexados.                                                                                                                                                                                        |
| Mixed objective/subjective test | Examen da asignatura que combina conceptos teóricos, prácticos e problemas.                                                                                                                                                                                                                        |
| Supervised projects             | Trabajos realizados baixo a orientación do profesorado, cuxo obxetivos é que os estudantes asuman a responsabilidade do seu propio aprendizaxe e que aprenden "cómo hacer".                                                                                                                        |
| Guest lecture / keynote speech  | Clases teóricas nas que se expoñen os contidos fundamentais da materia, que poden acompañarse da proposta e a resolución de exemplos.                                                                                                                                                              |

| Personalized attention                 |                                                                                                                                                                                                                     |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methodologies                          | Description                                                                                                                                                                                                         |
| Laboratory practice<br>Problem solving | Tanto nas prácticas de laboratorio como na solución de problemas o profesor aportará solucións e/ou atenderá as dúbidas e as preguntas que se orixinen. Unha atención máis personalizada desenvólvese nas tutorías. |

| Assessment                      |                    |                                                                                                                                                                                                                                                                                                                                                                                      |               |
|---------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Methodologies                   | Competencies       | Description                                                                                                                                                                                                                                                                                                                                                                          | Qualification |
| Laboratory practice             | A46 B3 B5 C3 C7 C8 | The maximum grade of the essays, tests and exercises will be of 4 points out of the total 10 points of the course. The assessment will be a continuous assessment so the grade of the tests of this section counts as much for the first as for the second opportunity. In the second opportunity the student will have the chance of repeating 2 points as a maximum for this part. | 30            |
| Mixed objective/subjective test | A46 B3 B5 C3 C7 C8 | The maximum grade will be of 4 points out of the total 10 points of the course. The test consists of an examination that will include theoretical concepts and the practical assimilation of the course. The student will have the chance of repeating this test in the second opportunity.                                                                                          | 45            |
| Supervised projects             | A46 B3 B5 C3 C7 C8 | The results of the essays, which will have a fixed deadline published with enough time in advance, will be assessed. These essays will not be repeated in the second opportunity.                                                                                                                                                                                                    | 25            |

| Assessment comments |
|---------------------|
|---------------------|



## NON PRESENTADO:

Na primeira oportunidade terá calificación de NON PRESENTADO o estudante que non realice a proba mixta.

Na segunda oportunidade pódese recuperar só a proba mixta, só os traballos tutelados ou ambas as dúas partes, de maneira que as notas desta oportunidade substitúen sempre as da primeira. Terá calificación de NON PRESENTADO o estudante que non recupere nin a proba mixta nin os traballos tutelados.

## DISPENSA ACADÉMICA:

Aqueles estudantes con matrícula a tempo parcial e dispensa académica que lles exima da asistencia ás clases deberán contactar cos docentes para buscar unha alternativa á avaliación das prácticas de laboratorio.

## OPORTUNIDADE ADIANTADA:

A avaliación na oportunidade adiantada consistirá unicamente nunha proba escrita que computará o 100% da cualificación.

### Sources of information

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Basic</b>         | <ul style="list-style-type: none"> <li>- Kimball, R.; Ross, M (2013). The Data Warehouse Toolkit, 3rd edition. Wiley</li> <li>- Kimball, R.; Ross, M.; Thornthwaite, W.; Mundy, J.; Becker, B. (2008). The Data Warehouse Lifecycle Toolkit, 2nd edition. John Wiley and Sons</li> <li>- Inmon, W. H. (2002). Building the Data Warehouse, 3rd edition. Wiley</li> <li>- Sharda, R. Delen, D.; Turban, E. (2014). Business Intelligence: A managerial perspective on analytics. Prentice Hall</li> <li>- Tan, P.; Steinbach, M.; Kumar, V. (2006). Introduction to Data Mining . Addison-Wesley</li> <li>- Williams, G. (2011). Data Mining with Rattle and R. Springer</li> </ul> |
| <b>Complementary</b> | <ul style="list-style-type: none"> <li>- Inmon, W. H.; Strauss, D.; Neushloss, G. (2008). The Architecture for the Next Generation of Data Warehousing . Morgan Kaufman</li> <li>- Golfarelli, M.; Rizzi, S. (2009). Data Warehouse Design: Modern Principles and Methodologies . McGraw-Hill</li> <li>- Mazón López, N.; Pardillo Vela, J.; Trujillo Mondejar, J. C. (2011). Diseño y explotación de almacenes de datos . Editorial Club Universitario</li> <li>- Elmasri, R.; Navathe, S. (2011). Fundamentals of Database Systems. Addison-Wesley</li> <li>- García-Molina, H.; Ullman, J.; Widom, J. (2009). Database System. The complete book.. Prentice Hall</li> </ul>     |

### Recommendations

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

Databases/614G01013

#### 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.