1. OVERVIEW

Subject area	Databases
Degree	Bachelor's Degree in Business Analytics
School/Faculty	Social Sciences and *(sic)*
Year	2nd
ECTS	6
Type	Compulsory
Language(s)	Spanish/English
Delivery Mode	On campus
Semester	1st
Year	2024-25
Coordinating professor	Miguel Serrano

2. INTRODUCTION

The new degree in Business Analytics is aimed at training professionals who can apply in-depth knowledge of data processing to business management. For that reason, students must be introduced to the world of data support.

The lowest level stratum is formed by databases (covered in the subject area Databases) which are the computer storage medium. From this point of view, students will need to know the different database models, as well as the distinctive features, advantages and disadvantages of each one.

Once this objective has been achieved, students will focus on relational databases, on which they must be able to perform basic operations (insert, erase and modify) and, in particular, prepare the appropriate searches to obtain the necessary information.

Data Structures, Data Engineering and The Data Cycle are subjects that will be studied later in this degree and will delve deeper into this topic along with other more specific topics related to information management from any technology and/or extension.

3. SKILLS AND LEARNING OUTCOMES

Basic skills (CB, by its acronym in Spanish):

- CB1 - Students have shown their knowledge and understanding of a study area that builds on general secondary school education, and are usually at the level where, with the support of more advanced textbooks, they may also demonstrate awareness of the latest developments in their field of study.
- CB3 - Students have the ability to gather and interpret relevant data (usually within their study area) to form opinions which include reflecting on relevant social, scientific or ethical matters.

Specific skills (CE, by the acronym in Spanish):

- CE20 - Ability to develop a study plan of business variables and indicators.

- CE22 - Ability to select and apply the most appropriate analytical tools to each situation of the company.
- CE28 - Ability to understand and know the “data cycle”: data acquisition and creation, construction of information, analysis and visualisation.
- CE29 - Ability to ask the right questions, in relation to the expected knowledge objective, so that they can be translated into appropriate queries that must then be formulated on the data storage system.
- CE31 - Ability to manage uncertainty due to constantly changing information sources.
- CE33 - Ability to handle computer tools for statistical treatment and other tools such as simulators with ease and technical solvency.

Learning outcomes (RA, by the acronym in Spanish):

- RA1: Design a database.
- RA2: Generate queries for accessing and/or modifying a database.
- RA3: Develop an application for querying and/or modifying a database.
- RA4: Acquire knowledge of a commercial database management system.

The following table shows how the skills developed in the subject area relate to the intended learning outcomes:

Skills	Learning outcomes (RA, by the acronym in Spanish)
CB1, CB3, CE20	RA1: Design a database.
CB1, CE22, CE29	RA2: Generate queries for accessing and/or modifying a database.
CB1, CB3, CE20, CE28,	RA3: Develop an application for querying and/or modifying a database.
CE29, CE31	RA4: Acquire knowledge of a commercial database management system.

4. CONTENTS

Unit 1: Foundations of databases

- Information and databases
- Databases (DB) and languages
- DB architecture and characteristics
- Life cycle

Unit 2: Types of databases. DB classification and historical evolution

- Current trends in data management

Unit 3: Data model definition

- DB analysis: ER model.
- DB design: Relational model.

Unit 4: Database design

- ER diagrams
- Moving onto tables: Basic normalisation

Unit 5: SQL. Data manipulation

• Introduction to SQL. Simple queries
- SQL. Advanced queries
- Inserting, modifying and erasing data.

Unit 6: SQL. Definition of data

- Creating tables: types of data, integrity constraints
- Modifying and removing tables
- Indices and views
- JDBC

Unit 7: Database security management

- Legislation: Data protection

Security levels, benefits, user control

5. TEACHING-LEARNING METHODS

The types of teaching-learning methods are as follows:

- Lecture / web conference
- Case studies
- Workshop-based learning
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6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On campus:

Learning activity	Number of hours
Tutorials	10
Lectures	19
Asynchronous lectures	11
Case studies	30

Independent working	45
Workshops and/or laboratory work	35
TOTAL	**150**

7. ASSESSMENT

The assessment systems, plus their weighting in the final grade for the subject area, are as follows:

Assessment system	Weighting
On-campus knowledge test	50%
Oral presentations. Written reports	25%
Case study/problem scenario	20%
Performance observation	5%

On the Virtual Campus, when you open the subject area, you can see all the details of your assessable tasks and the deadlines and assessment procedures for each task.

7.1. Ordinary exam period

To pass the subject area in the ordinary exam period you must obtain a grade higher than or equal to 5.0 out of 10.0 in the final grade (weighted average) for the subject area.

In any case, it is necessary that you obtain a grade higher than or equal to 4.0 in the final exam, so that it can be averaged with the rest of the tasks.

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7.2. Extraordinary exam period (resits)

To pass the subject area in the ordinary exam period you must obtain a grade higher than or equal to 5.0 out of 10.0 in the final grade (weighted average) for the subject area.

In any case, it is necessary that you obtain a grade higher than or equal to 4.0 in the final exam, so that it can be averaged with the rest of the tasks.

Tasks not passed in the ordinary exam period, or those not delivered, must now be delivered after having received the relevant corrections to them by the teacher.

8. TIMELINE

The timeline with delivery dates of assessable tasks in the subject area is indicated in this section:

Assessable tasks	Date

The timeline may be subject to modifications for logistical reasons. Students will be informed of any changes in due time and course.

9. BIBLIOGRAPHY

The recommended bibliography is indicated below:

Connolly, T. M., & Begg, C. E. (2005). Sistemas de Bases de Datos. Un enfoque práctico para diseño, implementación y gestión. Pearson.
Silberschazt, Korth, & Sudarshan. (2006). Fundamentos de Diseño de Bases de Datos. 5º edición. McGraw-Hill
Ramakrishnan, R., & Gehrke, J. (2003). Sistemas de Gestión de Bases de Datos. McGraw-Hill.

10. EDUCATIONAL GUIDANCE, DIVERSITY AND INCLUSION UNIT

From the Educational Guidance and Diversity Unit we offer support to our students throughout thei university life to help them reach their academic achievements. Other main actions are the student inclusions with specific educational needs, universal accessibility on the different campuses of the university and equal opportunities.

From this unit we offer to our students:

1. Accompaniment and follow-up by means of counselling and personalized plans for students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made in terms of methodology and assessment for those students with specific educational needs, pursuing an equal opportunities for all students.
3. We offer students different extracurricular resources to develop different competences that will encourage their personal and professional development.
4. Vocational guidance through the provision of tools and counselling to students with vocational doubts or who believe they have made a mistake in their choice of degree.

Students in need of educational support can write to us at:
orientacioneducativa@universidadeuropea.es

11. STUDENT SATISFACTION SURVEYS

Your opinion matters!

Universidad Europea encourages you to complete our satisfaction surveys to identify strengths and areas for improvement for staff, the degree and the learning process.

These surveys will be available in the surveys area of your virtual campus or by email.

Your opinion is essential to improve the quality of the degree.

Many thanks for taking part.