

## 1. BASIC INFORMATION

Course	Masters Disertation
Degree program	Masters in Big Data Analytics
School	Escuela de Arquitectura, Ingeniería y Diseño
Year	1
ECTS	6
Credit type	Compulsory
Language(s)	English
Delivery mode	Face-to-face / Online
Semester	2
Academic year	2025-2026
Coordinating professor	Oscar Marban Gallego

## 2. PRESENTATION

The **Master's Thesis (TFM)** is a compulsory course within the **Master's Degree in Big Data Analytics**. It carries a total weight of **6 ECTS credits**, equivalent to **150 hours of student work**.

This course is designed to help students apply the knowledge acquired throughout the program and focus it on technical, theoretical-experimental, or research-oriented projects.

## 3. LEARNING OUTCOMES

### Knowledge

CON02. Explain how Big Data architectures and techniques are applied to the analysis of static and dynamic, structured and unstructured data.

CON04. Understand the fundamentals of distributed processing and storage of large volumes of data.

CON-OPT-01. Understand bibliographic and computational resources, as well as the methodological and structural approaches of a research project in Big Data.

### Skills

HAB01. Apply the knowledge acquired about distributed/cloud systems in the development and implementation of data analysis systems.

HAB02. Apply the technical fundamentals of high-performance distributed systems, including their development environments and both SQL and NoSQL databases.

HAB05. Design a data extraction, transformation, and loading (ETL) process using parallel processing and scalable resources.

HAB08. Critically and meticulously evaluate the results obtained through the use of big data analysis techniques.

#### Competences

CP10. Prepare, present, and defend a professional or research project in the field of big data analysis, individually and publicly, before an academic panel, as a synthesis of the competencies acquired throughout the program.

## 4. CONTENT

The course is organized into learning units, which are further divided into topics:

- **Infographics and Visual Analytics**
- **Visualization Metaphors and Understanding Complex Models**
- **Visual Exploration and Reasoning**
- **Visual Data Mining**
- **Visualization Technologies**
- **Human-Machine Interaction Modes and Interfaces**

## 5. TEACHING-LEARNING METHODOLOGIES

The following types of teaching-learning methodologies will be applied:

- MD3: Problem-Based Learning (PBL)

## 6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

#### Campus-based mode:

Learning activity	Number of hours
Development of TFM	138
Tutorships of TFM	20
Public Disertation TFM	2
<b>TOTAL</b>	<b>150</b>

#### Virtual mode:

Learning activity	Number of hours
Development of TFM	138

Tutorships of TFM	20
Public Disertation TFM	2
<b>TOTAL</b>	<b>150</b>

## 7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

### Campus-based mode:

Assessment system	Weight
SE7: Written report of TFM	50%
SE8: Public Disertation of TFM	50%

### Virtual mode:

Assessment system	Weight
SE7: Written report of TFM	50%
SE8: Public Disertation of TFM	50%

When you access the course on the *Campus Virtual*, you'll find a description of the assessment activities you have to complete, as well as the delivery deadline and assessment procedure for each one.

### 7.1. First exam period

To pass the course in the first exam period, you must obtain a final course grade of at least 5 out of 10 (weighted average).

In any case, you will need to obtain a grade of 4.0 in the final exam in order for it to count towards the final grade along with all the grades corresponding to the other activities.

### 7.2. Second exam period

To pass the course in the second exam period, you must obtain a final grade of at least 5 out of 10 (weighted average).

In any case, you will need to obtain a grade of at 4.0 in the final exam in order for it to count towards the final grade along with all the grades corresponding to the other activities.

The student must deliver the activities not successfully completed in the first exam period after having received the corresponding corrections from the professor, or those that were not delivered in the first place.

## 8. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

Assessable activities	Deadline
Report	September / October 2026
Public Dissertation	September / October 2026

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any changes as and when appropriate.

## 9. BIBLIOGRAPHY

The literature review is part of the student's independent work. The project supervisor may guide the student in this search.

## 10. EDUCATIONAL GUIDANCE, DIVERSITY AND INCLUSION UNIT

From the Educational Guidance, Diversity and Inclusion Unit we offer support to our students throughout their university life to help them reach their academic achievements. Other main actions are the students' 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 mean 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 opportunity 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](mailto:orientacioneducativa@universidadeuropea.es)

## **11. ONLINE SURVEYS**

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section on virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation.