# 1. OVERVIEW

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|---|---|
| **Subject area** | Final Degree Project |
| **Degree** | Bachelor's Degree in Data Science |
| **School/Faculty** | Faculty of Science, Engineering and Design |
| **Year** | 4º |
| **ECTS** | 12 |
| **Type** | TFG |
| **Language(s)** | Spanish |
| **Delivery Mode** | On campus |
| **Semester** | 7º and 8º |

# 2. INTRODUCTION

The Degree Dissertation is a compulsory assignment in which students produce an original academic essay to finish their degree. The aim of the dissertation is to reflect all the knowledge and skills acquired by the student in all the degree subjects.

This piece of work is individual (or in exceptional circumstances pending justification as a group) under the supervision of a project tutor who will guide and direct students as they complete it.

The project will be presented and explained orally in public before a university assessment tribunal.

# 3. SKILLS AND LEARNING OUTCOMES

**Basic skills (CB, by the acronym in Spanish):**

- CB1: Students have shown their knowledge and understanding of a study area originating from 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.
- CB2: Students can apply their knowledge to their work professionally and possess the necessary skills, usually demonstrated by forming and defending opinions, as well as resolving problems within their study area.
- CB3: Students must 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.
- CB4: Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- CB5: Students have developed the learning skills necessary to undertake further study in a much more independent manner.

**Cross-curricular skills (CT, by the acronym in Spanish):**

- CT1: Ethical values: ability to think and act in line with universal principles based on the value of a person, contributing to their development and involving commitment to certain social values.
- CT2: Independent learning: skills for choosing strategies to search, analyse, evaluate and manage information from different sources, as well as to independently learn and put into practice what has been learnt.

- CT4. Written/spoken communication: ability to communicate and gather information, ideas, opinions and viewpoints to understand and be able to act, spoken through words or gestures or written through words and/or graphic elements.
- CT5. Analysis and problem-solving: be able to critically assess information, break down complex situations, identify patterns and consider different alternatives, approaches and perspectives in order to find the best solutions and effective negotiations.
- CT6. Adapting to change: be able to accept, consider and integrate different perspectives, adapting your own approach as required by the situation at hand, and to work effectively in ambiguous situations.
- CT8. Entrepreneurial spirit: ability to take on and carry out activities that generate new opportunities, foresee problems or lead to improvements.
- CT9. Global mindset: Be able to show interest in and understand other customs and cultures, be aware of your own biases and work effectively as part of a global community.

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

- CE9. Ability to apply safety assessment criteria and methods and safety certification, as well as compliance with current legislation on personal data, privacy and the rights of the general public.
- CE11. Ability to apply computational learning techniques in order to design and implement applications and systems that use them, including those dedicated to the automatic extraction of information and knowledge from large volumes of data.
- CE17. Ability to organise, complete and defend a project in the field of data science.

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

- RA1. Produce an original piece of work which reflects the specific knowledge and skills learnt during the degree course. Students will produce an all-encompassing, multidisciplinary and in-depth project using the new methods, tools and abilities learnt on the course.
- RA2. Correctly apply the methods and tools for project management. This involves establishing objectives, identifying resources and project planning, among others.
- RA3. Perform an analysis of the context surrounding the project details and understand its relevance and scope for implementation.
- RA4. Analyse the financial implications, security measures and current legislation, as well as ethical relevance and social impact.
- RA5. Carry out an individual presentation and defence of the results obtained before a specialist audience.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

| Skills | Learning outcomes |
|---|---|
| CB1, CB2, CB5<br>CT1, CT2, CT5, CT6, CT8<br>CE11 | RA1. Produce an original piece of work which reflects the specific knowledge and skills learnt during the degree course. Students will produce an all-encompassing, multidisciplinary and in-depth project using the new methods, tools and abilities learnt on the course.<br>RA2. Correctly apply the methods and tools for project management. This involves establishing objectives, identifying resources and project planning, among others. |
| CB3, CB5<br>CT1, CT2, CT5, CT9<br>CE9 | RA3. Perform an analysis of the context surrounding the project details and understand its relevance and scope for implementation.<br>RA4. Analyse the financial implications, security measures and current legislation, as well as ethical relevance and social impact. |

| | |
|---|---|
| CB4, CB5<br>CT4<br>CE17 | RA5. Carry out an individual presentation and defence of the results obtained before a specialist audience. |

## 4. CONTENTS

Produce, present and defend the Degree Dissertation in the field of data science which synthesises and integrates all the skills acquired during the degree course.

A shared and additional factor in all projects will be the simultaneous development of the **Sustainable Development Goals (SDGs)** in keeping with the dissertation topic and the specific content of each. This gives students the opportunity to show initiative, either in research methods/approaches or professional experience). Some SDGs which can potentially be included in the degree dissertations are: 3) Health and well-being; 4) Quality education; 9) Industry, innovation and infrastructure; 11) Sustainable cities and communities; 12) Responsible production and consumption; and 13) Climate action.

## 5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Case study.
- Project-based learning.
- Field work (field trips, professional talks, work experience)

## 6. LEARNING ACTIVITIES

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

**On campus:**

| Regulatory matters | Number of hours |
|---|---|
| Case studies and field studies | 20 |
| Learning contract (definition of interests, needs and objectives) | 2 |
| Autonomous learning | 96 |
| Tutorials | 50 |
| Degree dissertation | 130 |
| Knowledge tests | 2 |
| **TOTAL** | **300** |

## 7. ASSESSMENT

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

**On campus:**

| Assessment system | Weighting |
|---|---|
| Project journals (integrated projects, degree dissertation) | 65% |
| Presentations and defence of projects (integrated projects, degree dissertation) | 35% |

Oral defence of the degree dissertation will be done individually, although in exceptional cases, it has been done as a group.

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

## 8. BIBLIOGRAPHY

The reference publication to accompany this subject area is:


- Briony J. Oates. "Researching information systems and computing", (2012). University of Teesside, Middlesborough, SAGE Publictions Inc.
- Blaxter, L., C. Hughes y M.Tight. "Cómo se hace una investigación", (2002), Gedisa
- García Sanz, M.P., y P. Martínez Clares (coords.) "Guía práctica para la realización de trabajos fin de grado y trabajos fin de máster" (2013), Murcia : Editum.
- Mirón Canelo, J.A...(et al.). "Guía para la elaboración de trabajos científicos: Grado, máster y postgrado". (2013)
- Garrido Aguilar, E.M. y M.T. Icart Isern (dirs). "Cómo elaborar y presentar un proyecto de investigación, una tesina y una tesis" (2012), Barcelona, Publicacions i Edicions Universitat de Barcelona.
- Sierra Bravo, R. "Tesis doctorales y trabajos de investigación científica: metodología de su elaboración y documentación" (2007), 5ªed., 5ª. reimp., Madrid, Paraninfo.