

Bachelor Degree in Business Administration and Management and Business Transformation

Course: Data visualization techniques

Subject: Computer science

Credits: 6 ECTS

Program: Bachelor

Modality: On-Site

Year: Second

Semester: Second

Academic Year: 2026-2027

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2. Presentation

2.1 Description

The business world is experiencing a real revolution. The increasing availability of large amounts of information, the radical development of artificial intelligence and new data visualization technologies have marked a before and after in the way companies detect and develop business opportunities: identifying patterns of consumer behaviour, developing products and services from them and developing marketing strategies based on predictive models.

2.2 Relevant professional applications

In this subject we introduce you to the fundamental techniques of Machine Learning behind the Big Data revolution and we help you to implement them from real cases that you must work using one of the most popular statistical programming tools: A. At the end of the course you will work with a visualization tool to create your own dashboards.

3. Learning outcome of the degree

- RAT1 - The graduate will be able to recognize the tasks of the different functional areas within a company or organization, taking into account previous theoretical learning about business structures.
- RAT4 - The student will describe the techniques of management in the development of business organizations by means of different written tests.
- RAT6 - The graduate will be able to understand the different data analysis techniques used to assess the feasibility of a business project.
- RAT9 - The student will be able to provide clear and precise explanations of any knowledge/information, both orally and in writing, in Catalan, Spanish and a third language, particularly English.
- RAT10 - The student will be able to apply digital technologies (at the right time) in his/her field of expertise.
- RAT12 - The graduate will be able to develop both traditional and digital marketing and promotional projects in a business environment.
- RAT18 - The student will be able to provide innovative, creative and entrepreneurial solutions in professional situations.
- RAT19 - The student will be able to evaluate the sustainability and social impact of the proposals presented, with ethical, environmental and professional responsibility.

- RAT20 - The student will be able to apply the gender perspective in the professional tasks.
- RAT22 – After completing the degree, the student will be able to design work processes to achieve organizational efficiency.
- RAT23 – The graduate will be able to actively propose a plan for the implementation and support of information and communication systems for the digital transformation of the organization, according to a project based on a real business case.

4. Learning outcomes of the subjects

- RAM4 - The student will be able to practice the proper use of technology, information and software systems for a digital transformation.
- RAM5 - The student will be able to properly design web technology services and applications for integration into corporate information systems.
- RAM7 - The student will be able to correctly interpret management techniques and economic aspects related to the production of technological tools.
- RAM8 - The student will be able to properly use management techniques and technological tools for a digital transformation.

5. Contents

The increasing availability of large amounts of information, the radical development of artificial intelligence and the new technologies of data visualization have marked a before and after in the way in which companies detect and develop business opportunities, transform, adapt or expand their business, identifying patterns of consumer behaviour, developing products and services from them and developing marketing strategies based on predictive models. In particular, it will address issues such as:

- Introduction to R and PowerBI software
- Main data visualization tools
- Data Presentation: Dashboards and Data Visualization
- Interpretation of graphs and data for each department of the company
- Techniques of linking data and results between various departments in the company
- Application through examples and exercises of Corporate Social Responsibility to ensure a better sustainable community and continuity in awareness of its importance.

6. Methodology

Learning outcomes developed	Teaching methodology	Training activities
Knowledge	Master class	Teacher's presentations
	Instructional sessions	Student's presentations
	Tutoring	Meetings for the resolution of doubts
	Learning based on readings	Reading and analysis of documents
Skill	Learning based on projects	Problem solving
	Learning based on audio-visual	Audiovisual analysis
	Case-based learning	Search and processing of information. Problem solving
Competence	Project-based work	Reporting Submissions of reports or papers

7. Evaluation

Evaluation system	Weight
Continuous evaluation: exercises, problems, reporting, papers, case studies	40 %
Mid-term exam	20 %
Final exam	40 %

The regulations include the obligation of 75% attendance.

- Absences are divided into two categories: justified and unexcused. Excused absences are those that can be demonstrated with a proof. All other absences are considered unjustified absences.
- The supporting documents must be delivered within a maximum period of 7 days to the teaching staff and clearly include the student's personal data as well as the date and time in which the student did not attend to a class.

Continuous assessment

The final grade for the subject is calculated based on the weighted average of three evaluation blocks:

- a) Midterm exam, 20%
- b) Activities (participation, class tests, seminar cases and/or group projects), 40%
- c) Final exam, 40%

These three blocks will only be weighted if the final exam grade is equal to or greater than 4.0.

When the final exam grade is less than 4.0, blocks a) and b) will not be weighted and the final exam grade becomes the final grade for the subject.

If the student does not take the final exam, the final grade for the course is "No show."

In the event that the course final grade is a fail, but the final exam grade is less than 5.0, the student can recover the final exam with an additional test. With the result obtained, the final grade for the subject will be calculated according to the previous criteria.

Single Evaluation

The single evaluation consists of a single exam that is equivalent to 100% of the course grade. The exam, and therefore the subject, is passed with a grade of 5 out of 10 in this final test. In case of obtaining a grade lower than 5.0, the student has the right to a make-up exam.

To benefit from the single evaluation, it is necessary to send a written request to the coordination during the first 15 business days of the course.

8. Bibliography

8.1 Basic Bibliography

- Introduction to Mathematical Statistics, Global Edition, 8th Edition, Robert V. Hogg, Joseph McKean, Allen T. Craig, Late, 2021 |Pearson

8.2 Recommended bibliography

- Hogg,R.V., McKean, J., Craig A.T. (2021). Introduction to Mathematical Statistics, Global Edition, 8th Edition. Pearson.