

## DEGREE IN INDUSTRIAL DESIGN ENGINEERING

### TEACHING PLAN OF SUBJECT DATA ANALYSIS AND VISUALIZATION

ACADEMIC YEAR: 2025- 26  
YEAR: 3RD  
CHARACTER: Optional  
SEMESTER: 6th  
ECTS: 6  
TEACHING HOURS: 45  
HOURS OF SELF-EMPLOYMENT: 105  
TOTAL HOURS: 150  
LANGUAGE/S: English  
CODE: 17062

TEACHING TEAM: Xavier Riudor [xriudor@elisava.net](mailto:xriudor@elisava.net) / Massimo Menichinelli [mmenichinelli@elisava.net](mailto:mmenichinelli@elisava.net)

#### **PRESENTATION SUBJECT / OBJECTIVES**

The Data Analysis and Visualization elective is part of the Product and Data Management program. This course has three main objectives: to introduce students to data visualization, to provide narrative structures with basic data for infographic design, and to provide tools for proper data visualization and representation. This Product and Data Manager training profile must be able to understand data and find the optimal representation to convey their ideas to all types of interlocutors, whether they are specialists in the field or not.

During the course, students will work on emerging methodologies to manage and analyze user data, context, needs, and rights.

#### **SUSTAINABLE DEVELOPMENT GOALS (SDGS)**

This subject does not specifically incorporate any SDG.

#### **CONTENTS**

##### **Block-I:**

- Introduction to Data Analysis and Visualization
- Session on data analysis and visualization and the most advanced visualization tools, with a particular focus on customized visualizations.
- Session on data analysis and visualization with a particular focus on creating comprehensive visualization applications for users.

##### **Block-II:**

- Session on data analysis and visualization and the most advanced visualization tools, with a particular focus on time series.
- Session on data analysis and visualization and the most advanced visualization tools, with a particular focus on networks and graphs.
- Session on data analysis and visualization and the most advanced visualization tools, with a particular focus on maps.

#### **TEACHING METHODOLOGIES**

- Work sessions with the whole class group with the teacher (PA)

#### **COMPETENCES**

- G2 - Configure new realities to interpret the historical, social, cultural, economic and technological context.
- G3 - Integrate formal sensitivity as a fundamental part of the project process. CB4 - The student can transmit information, ideas, problems and solutions to both specialized and non-specialized audiences
- T2 - Project the values of entrepreneurship and innovation in the exercise of the academic and professional personal trajectory through contact with different realities of practice and motivation towards professional development.
- T4 - Demonstrate skills for professional practice in multidisciplinary and complex environments, in coordination with networked work teams, whether in person or virtually, through the use of ICTs in computing and information technology.

- T6 - Use different forms of communication, both oral, written, and audiovisual, in one's own language and in foreign languages, with a high degree of accuracy in use, form, and content.
- E3 - Use computing and programming to apply them in different phases of industrial design engineering.
- E11 - Identify emerging technologies that can add value to the project.

### LEARNING OUTCOMES

- Communicate knowledge, methodology, ideas, problems, and solutions to all types of audiences (specialized or not) clearly and precisely.
- Design interventions that address the needs of the field in a multidisciplinary manner.
- Use audiovisual language and its various resources to express and present content linked to specific knowledge in the field.
- Apply data in different phases of industrial design engineering.

### TRAINING ACTIVITIES

Each subject will present at the beginning of the course its WORK PLAN where the didactic activities per week / session / autonomous work are recorded.

### EVALUATION

#### EVALUATION SYSTEMS

The evaluation of the subject will be based on a continuous monitoring of the student's academic work throughout the course.

EVALUATION SYSTEM	FINAL WEIGHTING
P5-Completion of required work or projects	100

#### EVALUATION CRITERIA

The final grade of the subject will be the weighted average of the grades of the evaluable activities according to the following table

EVALUABLE ACTIVITY	WEIGHT	RECOVERABLE (up to 50%)	EVALUATION SYSTEM
Activity-1 Application in the project	100%	YES*	P-5

Students will have the option of re-examining themselves for recoverable tests. The recovery tests will be carried out in the period of the semester destined to this function, not being able to recover more than 50% of the subject.

\* In the event that the Recoverable Evaluable Activities exceed 50%, the student may choose, up to a limit of 50%.

The unjustified non-presentation of any evaluable activity implies a grade of 0, even if the activity has been qualified as Recoverable.

The Recoverable Activities can only be subject to recovery when they have been delivered by the student on the indicated date and with a grade equal to or greater than 3.

If you renounce access to the recovery test, the grade achieved in the first instance will be maintained.

In case of presenting to recovery, the note obtained will be the last, even if it is less than the first.

Plagiarism or copying someone else's work is penalized in all universities and, according to the Rules of Coexistence of the University of Vic-Central University of Catalonia, they constitute serious or very serious offenses. That is why during the course of this subject any indication of plagiarism or misappropriation of other people's texts or ideas ([What is considered plagiarism?](#)) as well as the improper or undeclared use of Artificial Intelligence in an activity, will result automatically in failure of the subject and/or other disciplinary measures ([Norms of Coexistence of the University of Vic-Central University of Catalonia](#)).

For any questions or queries, see the ([Academic Regulations for the Degree of the Elisava Faculty of Design and Engineering UVic-UCC](#)).

### BIBLIOGRAPHY AND TEACHING RESOURCES

- Cairo, A. 2016. *The truthful art: Data, charts, and maps for communication*. New Riders.
- D'ignazio, C., & Klein, L. F. 2020. *Data feminism*. MIT press.
- Lupi, G., & Posavec, S. 2016. *Dear data*. Chronicle books.
- Williams, S. 2022. *Data action: Using data for public good*. MIT Press.
- Yau, N. 2011. *Visualize this: the FlowingData guide to design, visualization, and statistics*. John Wiley & Sons.

The teaching staff will provide a specific bibliography at the beginning of the subject, if applicable.