

Subject:	RDIS - Resources for design and social innovation
Subject:	1 - Management and Communication Tools
Qualification:	Master in Artistic Teaching in Social Co-design applied to Public Sector Projects

Course:2025/2026**Semester:** First**Type:**Mandatory**ECTS credits:**3**Language:**Catalan**Hours distribution:**

Face-to-face teaching: 16 h

Independent learning: 45 h

Virtual teaching: 14 h

Hours: 75 hours

Hours:

Monday (4:00 PM - 8:00 PM)

In person

Wednesday (4:00 PM - 7:30 PM)

Virtual

Assignment Coordinator:

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Presentation of the subject

The subject “Resources for design and social innovation” provides us with different tools to manage the data obtained through different methods of co-creation and participation to address social issues and explore and facilitate new forms of collaboration. It provides the management of the social design process and shows us examples of how to visualize, sort, classify, optimize data, and identify key values in the development of design projects linked to the challenges we face as a society. The approach of the subject is practical and combines theoretical aspects with examples and case analysis.

Contents

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- I. Resource bases in innovation and social design.
- II. Processes and techniques.
- III. Practices and applications.
- IV. Examples of resources for design and social innovation.

1. Competencies of the subject

Subject / Subject		General Skills					
		CG1	CG2	CG3	CG4	CG5	CG6
EGC	Management and Communication Tools	X	X		X	X	X
RDIS	Resources for design and social innovation	X	X		X	X	X

Subject / Subject		Specific Skills									
		CE1	CE2	CE3	CE4	CE5	CE6	CE7	CE8	CE9	CE10
EGC	Management and Communication Tools		X	X		X		X			X
RDIS	Resources for design and social innovation		X	X		X		X			X

2. Learning outcomes of the subject.

Learning outcomes

LO1. Understand that the activities inherent in design structure a process that can have different formalities depending on the project, the work perspective and the people it is aimed at.

LO2. Understand information architecture and know how to place it in the design process centered on users and people.

LO4. Know and be able to apply methods, techniques and specific activities of information architecture.

LO6. Know and be able to use the main tools to manage and visualize data.

LO9. Develop research and information analysis skills and integration of complex information.

3. Training activities of the subject

Training activities		Hours	Presence
AF1	Theory.	7,5	50 %
AF2	Theoretical-practical activity.	2,5	50 %
AF3	Face-to-face group practice.	4	100 %

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AF4	Telematic group practice.	4	0 %
AF7	Independent work of the student.	45	0 %
AF8	Tutored work.	10	50 %
AF12	Presentation/exhibition	2	50 %

4. Teaching methodologies of the subject

Teaching Methodologies

MD1	Group work - collaborative learning.
MD2	Tutored individual work.
MD3	Tutored independent work.
MD4	Self-employed.
MD5	Practice of designing services based on real context.
MD8	Participatory lecture class.
MD9	Solving exercises and problems.
MD10	Problem/project-based learning.
MD11	Case study.

5. Evaluation systems

Evaluation criteria

- Ability to assimilate and transmit theoretical knowledge in writing and/or orally.
- Correct use of specific terminology.
- Student participation in the proposed activities.
- Interest in searching for information related to the proposed activities.

Evaluation instruments

- Carrying out all the proposed activities.
- Assessment of knowledge acquired through theoretical work and/or knowledge tests.
- Assessment of student participation in class activities.

Evaluation system		Weighting
1.	Jobs	50 %
2.	Practical exercises	50 %

6. Content blocks

I. Resource bases in innovation and social design.		
Docent/s:	Antoni Fonseca	
Hours distribution:	Face-to-face teaching: 0 h	Independent learning: 10 h
	Virtual teaching: 7 hours	Total: 17 h
Timing:	Week 9 and 10	Sessions: s2v, s4v
Contents:		
1. Data collection methods. - Introduction to the importance of data and why data has become the new oil. - Data available online through data repositories or APIs. - How to create your own data with your own IoT sensors. 2. Data organization and development. - Data available online through APIs or data repositories. - How to create your data with IoT sensors. 3. Results analysis. - Visualize simple data to understand the data. - Analysis of data biases. - Statistical analysis of data: mean, average, median, error, percentile. 4. Value identification and filtering. - Introduction to <i>Google Sheet</i> to clean and filter data with spreadsheets.		
Resources:		
In-person sessions: - Computer and Internet connection Virtual sessions: - Computer and Internet connection Self-employed: - Computer and Internet connection - Specific software: Microsoft and Google environment		
Specific bibliography:		
- Barcelona open dates https://opendata-ajuntament.barcelona.cat/data/es/dataset - Respository de datasets: https://www.kaggle.com/datasets?fileType=csv		
Reference bibliography and other resources:		
- <i>Information is Beautiful</i> by David McCandless		

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- McCandless, David (2022). *Beautiful News: Positive Trends, Uplifting Stats, Creative Solutions*
- Thorp, J. (2021) *Living in Data: A Citizen's Guide to a Better Information Future*.
- (2022) *The Age of Data – Embracing Algorithms in Art & Design*. Editor: Niggli Verlag.

Audiovisuals:

- Rosling, Hans (2006). The best statistics you'll ever see. TED. Retrieved from: <https://www.youtube.com/watch?v=hVimVzgtD6w&t=1038s>
- Chalabi, Mona (2017). 3 ways to spot a bad statistic. TED. Recuperat de: <https://www.youtube.com/watch?v=Zwwanld4T1w&t=519s>
- Miebach, Nathalie (2011). Art Made of Storms. TED. Retrieved from: <https://www.youtube.com/watch?v=MbhNaj88uL4&t=124s>

II. Processes and techniques.

Docent/s:	Antoni Fonseca	
Hours distribution:	Face-to-face teaching: 0 h	Independent learning: 12'5 hrs
	Virtual teaching: 7 hours	Total: 19.5h
Timing:	Week 11 and 12	Sessions: s6v, s8v
Contents:		
1. Management and planning - Types of relational databases and non-relational data 2. Detection resources - Digital data acquisition systems - Data scraping 3. Data capture and formats - Data formats with XML, CSV, JSON		
Resources:		
In-person sessions: - Computer and Internet connection Virtual sessions: - Computer and Internet connection - Specific software Self-employed: - Computer and Internet connection - Specific software		

Specific bibliography:
- Information is Beautiful by David McCandless - McCandless, David (2022). Beautiful News: Positive Trends, Uplifting Stats, Creative Solutions
Reference bibliography and other resources:
- Living in Data: A Citizen's Guide to a Better Information Future by Jer Thorp. 2021, ISBN: 978-0374189907. - The Age of Data – Embracing Algorithms in Art & Design. Editor: Niggli Verlag. 2022, ISBN: 978-3721210156

III. Practices and applications.		
Docent/s:	Marga Martín	
Hours distribution:	Face-to-face teaching: 12 h (Marga Martín)	Self-study: 17.5h
	Virtual teaching: 0 h	Total: 29.5h
Timing:	Weeks 9, 10 and 11	Sessions: s1p, s3p, s5p
Contents:		
1. Introduction to data visualization: - What is data visualization? - Types of diagrams and graphs and when to use them. 2. Design and creation of diagrams and graphs. - Exploratory data analysis. - Data visualization tools.		
Resources:		
In-person sessions: - Computer and Internet connection - Specific software Virtual sessions: - Computer and Internet connection - Specific software Self-employed: - Computer and Internet connection - Specific software		
Specific bibliography:		

Non-Catalan versions of this document are translated using Google Translate, which automatically translates the published text. The translation is not reviewed and may contain errors.

- McCandless, D. (2009). Information is Beautiful. Collins.
- Wong, D. M. (2013). The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts, and Figures. W. W. Norton & Company.

Reference bibliography and other resources:

- McCandless, D. (2022). Beautiful News. HarperCollins.
- McCandless, D. (2014). Knowledge Is Beautiful: Impossible Ideas, Invisible Patterns, Hidden Connections-Visualized.
- McCandless, D. (s/d). Information Is Beautiful. Recuperat de:
<https://informationisbeautiful.net/>

Audiovisuals:

- McCandless, David (2010). The beauty of data visualization. TED. Retrieved from:
<https://www.youtube.com/watch?v=pLqjQ55tz-U>

IV. Examples of resources for design and social innovation.

Docent/s:	Marga Martín	
Hours distribution:	Face-to-face teaching: 4 hours	Self-study: 5h
	Virtual teaching: 0 h	Total: 9h
Timing:	Week 12	Sessions: s7p
Contents:		
1. Analysis of socially committed and participatory design projects and the public sector 2. Evaluation and communication: - Evaluation of the effectiveness of visualizations. - Presentation and communication of findings.		
Resources:		
In-person sessions: - Computer and Internet connection - Specific software Virtual sessions: - Computer and Internet connection - Specific software Self-employed: - Computer and Internet connection - Specific software		
Specific bibliography:		

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- McCandless, D. (2009). Information is Beautiful. Collins.
- Wong, D. M. (2013). The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts, and Figures. W. W. Norton & Company.

Reference bibliography and other resources:

- McCandless, D. (2022). Beautiful News. HarperCollins.
- McCandless, D. (2014). Knowledge Is Beautiful: Impossible Ideas, Invisible Patterns, Hidden Connections-Visualized.
- Domestic Data Streamers. (2024, 18 septiembre). Domestic Data Streamers.
<https://www.domesticstreamers.com/>
- About. (February 11, 2021). 300,000 km/s.<https://300000kms.net/about/>

7. Timing

Timing:				
Set.	Session	Hours	Contents	Lecturer
9	S1v	4h	Resource bases in innovation and social design I	T. Fonseca
	S2v	3.5h	Introduction to data visualization	M. Martín
10	S3p	4h	Design and creation of diagrams and graphs 1	M. Martín
	S4v	3.5h	Resource bases in innovation and social design II	T. Fonseca
11	S6v	4h	Processes and techniques I Processes and techniques II	T. Fonseca
12	S7p	4h	Design and creation of diagrams and graphs 2	M. Martín
	S8v	3.5h	Evaluation and Communication	M. Martín

8. Training activities

Activity:	Data analysis		
Training activity:	AF1, AF2, AF3, AF7		
Weighting:	25%	Duration:17,5 h	1 week
Skills:	CG2, CG4, CG5	CE10	
DAY:	RA1, RA2, RA4		
Description:			
Develop a data analysis project from obtaining to visualizing and filtering the data.			
Introduction to data collection:			
- Write a short essay on why data has become the “new oil” and the importance of this data in today's world. - Identify three online databases or APIs that provide data on a topic you are interested in. Download the data and document the process. - Propose an application in the field of design in relation to the nature of the data studied.			
Data preparation and analysis:			
- It uses data downloaded from online repositories or APIs and performs an initial data cleanup to remove any irrelevant or incorrect data. - Perform exploratory analysis of the data you have collected and prepared. This should include simple data visualizations to help you understand the data. - Identify and analyze any biases that may be present in your data. How might these biases affect your analyses?			
Data navigation and filtering:			
- Import your data into Google Sheets. - Use Google Sheets features to clean and filter your data. Document the process and any decisions you make along the way.			
Work phases:			
Phase 1. Case analysis. Introduction to data collection.			
Phase 2. Data preparation.			
Phase 3. Navigation and filtering.			
Phase 4. Final report and sharing.			
Item to be presented:			
1. Delivery of a joint document (PDF). 2. A report that documents the entire process, from data acquisition to analysis and			

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filtering, including all codes, visualizations, and decisions made at each step. The report should be well organized and easy to follow.

Evaluation criteria:

- Ability to assimilate and transmit theoretical knowledge in writing and/or orally.
- Student participation in the proposed activities.

Activity:	Data planning and management		
Training activity:	AF1, AF4, AF8, AF7, AF12		
Weighting:	25%	Duration:19 h	1 week
Skills:	CG1, CG2, CG4, CG6	CE7, CE10	
DAY:	RA6, RA9		
Description:			
Develop a project that encompasses database management and planning, resource detection and data capture in different formats			
Management and planning:			
- Write a comparative essay on relational and non-relational databases. What are the advantages and disadvantages of each? In what situations would it be more appropriate to use each type? - Design a schema for a relational and a non-relational database that could be used to store data on a topic of your choice.			
Detection resources:			
- Identify a digital data collection system that could be used to collect data on the chosen topic. Describe how this system works and what types of data it can collect. - Perform a data scraping exercise on a web page related to your topic. Document the process and the data you obtain.			
Data capture and formats:			
- Convert the data you've collected to XML, CSV, and JSON formats. Make sure the data is well-structured and easily readable in each format.			
Work phases:			
Phase 1. Case analysis. Management.			
Phase 2. Data detection.			
Phase 3. Data and formats.			

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Phase 4. Final report and sharing.
Item to be presented:
Delivery of a joint document (PDF). A report that documents the entire process, from database management and planning to resource discovery and data capture. The report should include all the codes, schemas, and decisions made at each step. It should be well-organized and easy to follow.
Evaluation criteria:
- Ability to assimilate and transmit theoretical knowledge in writing and/or orally. - Student participation in the proposed activities.

Activity:	Introduction to data visualization		
Training activity:	AF1, AF3, AF4, AF12		
Weighting:	10%	Duration: 6,5 h	2 weeks
Skills:	CG2, CG6	CE5, CE7, CE10	
DAY:	RA1, RA6		
Description:			
Introduction to data visualization: - Exposition of the basic concepts of data visualization. - Group search for examples of diagrams and graphs. - Group analysis of the various examples of diagrams found. - Sharing the conclusions of each group.			
Work phases:			
Phase 1. Information search Phase 2. Case analysis Phase 3. Sharing			
Item to be presented:			
Delivery of a joint document (PDF) with the selected examples, the analysis carried out in group and the conclusions you have reached. The document must be the same for all group members.			
Evaluation criteria:			

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- Ability to assimilate and transmit theoretical knowledge in writing and/or orally.
- Student participation in the proposed activities.

Activity:	Diagram creation, evaluation and communication		
Training activity:	AF1, AF7, AF8		
Weighting:	40%	Duration: 32 h	3 weeks
Skills:	CG1, CG2, CG4, CG5, CG6	CE3, CE5, CE7, CE10	
DAY:	RA1, RA2, RA6		
Description:			
Data visualization: - Make several diagrams from a dataset you have worked on that allow us to draw conclusions such as: variations over time in data, relationship between different variables, etc. - Justify your reasons for choosing this type of diagram, explaining the hypothesis you wanted to explore and defining the conclusions you can reach from each of the selected visualizations. Evaluation and communication: - Make a comparative analysis of the diagrams made with those you made with Google Sheet, assessing in which cases and for which audience the use of one or the other would be more appropriate.			
Work phases:			
Phase 1. Analysis of the <i>dataset</i> And selection of variables to represent and diagram typology Phase 2. Creation of the diagram with one of the tools presented. Phase 3. Draw conclusions from the representation of the data. Phase 4. Evaluation of the suitability of the different types of data representation.			
Item to be presented:			
Delivery of a document (PDF) with: description of the process followed for data selection and diagram type, visualizations performed and conclusions drawn.			
Evaluation criteria:			
- Ability to assimilate and transmit theoretical knowledge in writing and/or orally. - Student participation in the proposed activities.			

9. General evaluation criteria

The general evaluation criteria that are common to all teaching guides for subjects 1, 2 and 3 of the master's degree are established, without prejudice to the evaluation criteria defined for each evaluation activity:

- Subject grade: A weighted average of the grades obtained in each of the training activities will be made in accordance with the percentages described in the subject's teaching guide.
- No delivery will be accepted outside the established deadline.
- In the event of a delivery or assessment activity coinciding with a force majeure event, students may submit an activity after the deadline following the calendar determined by the subject's teaching staff. Force majeure events are understood to mean: serious illness or temporary incapacity (hospitalization) of the student or a first-degree relative, coinciding with an official language level or driving license exam, inexcusable duties before the administration or death of a first- or second-degree relative. It must be justified by presenting the original accreditation with a stamp.
- The evaluation process is based on the student's personal work and presupposes the authenticity of the authorship and the originality of the exercises carried out. Any act of copying and/or plagiarism and irregular use of Artificial Intelligence (AI) will result in the immediate and irrevocable suspension of the assessable activity.

10. General recovery criteria

The general recovery criteria that are common to all teaching guides for subjects 1, 2 and 3 of the master's degree are established:

- Subject recovery: in case of not passing, the training activity or activities of the subject may be recovered in an extraordinary call in June, according to the calendar.

11. Use of Generative Artificial Intelligence (GAI)

The IAG can be used as a support tool in certain research tasks, provided that its use is authorized by the teaching staff. Some examples of permitted use are: summarizing texts, making translations, identifying starting points for an investigation, organizing sources, analyzing data or reviewing the style of one's own text. In these cases, it is essential to cite its use according to what is established in the subject. *Introduction to digital resources, free and open source software*. Students are responsible for the content of the work they submit, including that generated with the help of the

IAG.

However, it is not allowed to use the IAG to write or directly prepare any activity or evaluation work. This improper use violates the training objectives of the subject, since it makes it difficult to acquire key skills such as critical thinking, the ability to analyze or formulate one's own ideas. In the event of any suspicion of inappropriate use, alternative evaluation tests may be applied to verify authorship, and if confirmed, the work may be suspended.

12.Educational care within the framework of an inclusive education system

This Teaching Guide takes into account educational care within the framework of an inclusive educational system that includes two reference frames that support it:

- MISU: Universal Measures and Supports to promote personal and social development in equity and equality.
- DUA: Universal Learning Design, which allows flexible learning situations to be created based on a design that detects and minimizes the barriers of the context, from the beginning, and that considers variability.

However, to ensure freedom of thought and opportunities in relation to the gender perspective, a co-educational dynamic is carried out that avoids the predisposition of differential treatment, role attributions or assumptions of abilities determined by gender.

The MISU and DUA will be applied to all ESDAPC students. Those students in need of additional measures and support will be included through an Individualized Support Plan.