Universitat Autònoma de Barcelona

2023/2024

Big Data and Data Visualisation

Code: 106675
ECTS Credits: 6

Degree	Type	Year	Semester
2503868 Communication in Organisations	OT	4	1

Contact

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Teaching groups languages

You can check it through this link. To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Prerequisites

Basic knowledge of statistics. Design rudiments. Knowledge of English for practices, readings and viewings.

Objectives and Contextualisation

Understand the importance of big data with examples. Acquire data visualization analysis criteria. Being able to establish narratives with creative, attractive and truthful graphics.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Act within one's own area of knowledge, evaluating sex/gender-based inequalities.
- Adapt the communication generated by the organisation itself to the language of the traditional and digital Media.
- Analyse communication in the organisation and draw up a communication plan that includes internal, external and crisis communication.
- Apply specific research methodologies to formulate hypotheses, validate and verify ideas and concepts and interpret data on communication in organisations.
- Devise, plan and execute communication projects about the organisation on all types of media and for both internal and external audiences.
- Display the ability to lead, negotiate and work in a team.
- Establish communication objectives, and design and apply optimal strategies for communication between organisations and their employees, clients and users, and society in general.

- Introduce changes in the methods and processes of the field of knowledge to provide innovative responses to the needs and demands of society.
- Manage time efficiently and plan for short-, medium- and long-term tasks.
- Search for, select and rank any type of source and document that is useful for creating messages.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Value the formal and aesthetic (written, graphic, audiovisual and digital) aspects of information, and of ICT techniques used in depicting information through infographic and documentary systems in organisations' own media (websites).
- Work in compliance with professional codes of conduct.

Learning Outcomes

1. Accept disagreement and show no disrespect to other persons, groups or institutions for reasons of race, gender, disability, etc.
2. Adapt to information production processes and the professional routines of the organisation in relation to big data and data visualisation.
3. Apply big data and data visualisation to a communication plan that includes the internal and external information of the organisation.
4. Apply big data to the analysis of specific cases for Planning the internal and external communication of organisations.
5. Apply knowledge of research mechanisms to produce sound academic work, presenting and accounting for the results obtained.
6. Apply the deontological code of the profession when carrying out the tasks of the course subject.
7. Communicate using language that is not sexist or discriminatory.
8. Demonstrate ethical awareness in the application and management of big data and data visualisation to improve the activities of the organisation in its geographical area of operation.
9. Establish communication objectives using big data.
10. Explain the explicit or implicit code of practice of one's own area of knowledge.
11. Find what is substantial and relevant in documents within the subject.
12. Generate creative ideas in the workplace.
13. Plan and execute academic projects in the field of big data.
14. Prepare communications actions for internal and external audiences using big data and data visualisation.
15. Present a summary of the studies made, orally and in writing.
16. Produce all types of messages and documents to be included in the organisations media for internal and external audiences using big data and data visualisation.
17. Produce communications projects of different kinds using big data tacking into account the characteristics of the organisation.
18. Propose new methods or well-founded alternative solutions.
19. Propose projects and actions that incorporate the gender perspective.
20. Propose viable projects and actions to boost social, economic and environmental benefits.
21. Share experiences with the group as a path to learning, in order to work subsequently in multidisciplinary groups.
22. Submit high-quality coursework on time, which requires attention to both individual and group work.
23. Weigh up the impact of any long- or short-term difficulty, harm or discrimination that could be caused to certain persons or groups by the actions or projects.
24. Work independently , on the basis of the knowledge acquired, to resolve the exercises set and interpret the data.

Content

Course content includes:

- Data, Big Data, Big Big Data.
- History, sources, types, tools.
- Perception of data, color and visual attention.
- Narrative, art and data analysis.
- Practices, resources and projects.

Methodology

Content presentation classes, seminars with specific cases and practical projects will be held.

The calendar will be available on the first day of class. Students will find all information on the Virtual Campus: the description of the activities, teaching materials, and any necessary information for the proper follow-up of the subject.

This subject does not provide the single assessment system.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Classes	30	1.2	1, 2, 6, 21, 7, 9, 10, 18, 19, 20
Type: Supervised			
Seminars	15	0.6	1, 5, 21, 7, 8, 15, 12, 13, 22, 24, 11
Tutorials	12	0.48	9, 10, 15, 13, 22, 19, 24
Type: Autonomous			
Projects, viewings and readings	81	3.24	5, 21, 8, 9, 15, 13, 22, 24

Assessment

Evaluation activities description:
• Exam (30%)
• Seminars (20%)
• Practical exercises (50%)

It is mandatory to pass the exam and the practical exercises to pass the subject.

Students will be entitled to the revaluation of the subject. They should present a minimum of activities that equals two-thirds of the total grading. To have access to revaluation, the previous grades should be 3.5. The activities that are excluded from the revaluation process are seminars.

In the event that the student performs any irregularity that may lead to a significant variation of an evaluation act, this evaluation act will be graded with 0, regardless of the disciplinary process that could be instructed. In the event, that several irregularities occur in the evaluation acts of the same subject, the final grade for this subject will be 0.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Practical jobs	50%	3	0.12	1, 2, 5, 4, 3, 21, 7, 15, 12, 13, 14, 22, 18, 19, 20, 24
Seminars	20%	7	0.28	5, 21, 7, 8, 17, 16, 9, 15, 22, 18, 24
Test	30%	2	0.08	5, 6, 7, 10, 15, 11, 23

Bibliography

Throughout the course other resources will be added to this bibliography.

CAIRO, Alberto. (2011). *El arte funcional: infografía y visualización de información*. Alamut.

KNAFLIC, Cole Nussbaumer (2015). *Storytelling with Data: A Data Visualization Guide for Business Professionals*. John Wiley & Sons.

ONTIVEROS, Emilio, LÓPEZ SABATER, Verónica, ed. *Economía de los datos.* Madrid: Fundación Telefónica; Barcelona: Ariel, D.L. 2018. [Consulta 11-05-2019].

https://www.fundaciontelefonica.com/arte_cultura/publicaciones-listado/pagina-itempublicaciones/itempubli/624/

TORRES I VIÑALS, Jordi (2012). *Del cloud computing al big data: visión introductoria para jóvenes emprendedores*. Barcelona: UOC. [Consulta 24-07-2019].
https://campusvirtual.ull.es/ocw/mod/resource/view.php?id=6168&forceview=1

TUFTE, Edward R. (2001) 2nd ed. *The visual display of quantitative information*. Graphics Press

Software

In this subject, students are free to use the software that best suits their needs and technical capabilities. In the cases in which the work with a specific software is proposed, it will be with free software, which will be presented in the teaching sessions.