

Academic Year: (2021 / 2022)

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Department assigned to the subject: Library and Information Sciences Department

Coordinating teacher: OLMEDA GOMEZ, CARLOS

Type: Compulsory ECTS Credits : 6.0

Year : 4 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

There are no specific course prerequisites for this course.

OBJECTIVES

At the end of the course, students are expected to understand, explain, and manipulate basic types of data, analyze them using basic visualization techniques, and create and communicate visualizations of data. They are also expected to be able to assess and improve the effectiveness of data visualizations based on the principles of human perception, design, data types, and visualization techniques.

For this, the following competences to be acquired by students during the development of the subject are established:
Basic and general:

CB4 - That students can transmit information, ideas, problems and solutions to a specialized and non-specialized audience.

CG1 - Know and apply the fundamental principles and techniques for information management in the digital medium.

Transverse:

CT4 - Be able to dedicate themselves to autonomous learning for life, allowing them to adapt to new situations.

Specific:

CE8 - Understand the main techniques and methods of information visualization.

LEARNING OUTCOMES**TITLE GENERAL**

RA1. Having acquired advanced knowledge and demonstrated an understanding of the theoretical and practical aspects and of the working methodology in the area of information management and digital content with a depth that reaches the forefront of knowledge.

RA2. Apply the acquired knowledge, the understanding of these and their capacities to the resolution of complex and / or specialized problems in the professional field.

RA3. Have the ability to collect and interpret data and information on which to base their conclusions, including, when necessary and pertinent, reflection on matters of a social, scientific or ethical nature within the scope of their field of study.

RA4. Being able to cope in complex situations or that require the development of new solutions both in the academic, professional and professional fields within their field of study.

RA5. Know how to communicate to all kinds of audiences (specialized or not) clearly and precisely, knowledge, methodologies, ideas, problems and solutions in the field of their field of study.

SPECIFIC SUBJECTS

- Based on a previously defined design and data set, carry out the technological implementation of a visualization that meets the design requirements.
- Be able to combine the different techniques studied for the design of original visualizations
- Present data using appropriate graphic and visual communication methods, applying visual design principles in static and dynamic graphics.
- Acquire skills for visual data analysis and set up data narratives.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Quantitative communication.
 - 1.1 Fundamentals of visualization.
 - 1.2 The value of visualization.
2. Design of graphics, components and solutions.
 - 2.1 Properties of data.
 - 2.2 Scales, axes, coordinates, colour.
3. Visual encoding design.
 - 3.1 Data representation.
 - 432 Principles of design.
4. Visual analysis.
 - 5.1 Visualization tools.
 - 5.2 Workflows.
5. Data communication.
 - 6.1 Context and attention.
 - 6.2 Narratives.

LEARNING ACTIVITIES AND METHODOLOGY

TRAINING ACTIVITIES OF CURRICULUM CONCERNING STUDIES

THEORETICAL-PRACTICAL CLASSES. It will present the knowledge that students must acquire. They will receive the class notes and will have basic reference texts to facilitate the monitoring of classes and the development of subsequent work. Exercises and practical problems will be solved by the student and workshops will be held to acquire the necessary skills.

TUTORIES. Individualized assistance (individual tutorials) or in groups (collective tutorials) to the students by the professor.

INDIVIDUAL OR GROUP WORK OF THE STUDENT.

TEACHING METHODOLOGIES

THEORY CLASS (3 ECTS). Exhibitions in the teacher's class with computer and audiovisual media support, in which the main concepts of the subject and the materials and bibliography are provided to complement the learning of the students.

PRACTICES (3 ECTS). Use of programs, toolkits, and software as service databases, to create and manage static and dynamic data visualizations.

TUTORIES. Individualized assistance (individual tutorials) or in groups (collective tutorials) to the students by the professor. Face-to-face or virtual mode (Google meet).

ASSESSMENT SYSTEM

% end-of-term-examination/test:	40
% of continuous assessment (assignments, laboratory, practicals...):	60

Throughout the course, students are assessed on their understanding of the reading material, development of practical skills and cumulative learning in the form of formal examinations, completion of exercises, development of a mini project and written summaries of articles or book chapters, applying the concepts explained in the theory sessions. Students are required to hand in completed visualisations, solved exercise books, mini reports including extracted data, final report + presentation, written summaries for review and grading by the teacher.

Continuous assessment tasks: exercises (20%), mini project (20%), written summaries (20%): 60% of the final grade. Objective final exam test, questionnaire type: 40% of the final grade.

It is necessary to pass the final exam in order to be eligible for continuous assessment. The final grade is summative.

The extraordinary call will be governed by the provisions of the Regulations approved by the Governing

% end-of-term-examination/test:	40
% of continuous assessment (assignments, laboratory, practicals...):	60

Council on May 31, 2011, or by the regulation that replaces it.

BASIC BIBLIOGRAPHY

- Cairo, Alberto. El arte funcional. Infografía y visualización de información, Alamut, 2011
- Tufte, Edward R. The visual display of quantitative information, Graphics Press, 2007