

Information visualization

Academic Year: (2019 / 2020)

Review date: 01-05-2019

Department assigned to the subject: Department of Library Science and Documentation

Coordinating teacher: OLMEDA GOMEZ, CARLOS

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 0

STUDENTS ARE EXPECTED TO HAVE COMPLETED

There are no specific course prerequisites for this course

COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

Knowledge

1. Understand basic information and data visualization terminology and the fundamental principles of perception
2. Understand and create basic charts and plots
3. Design and implement interactive, multivariate, text, networks, temporal and data geolocation visualizations, using information visualization tools
4. Given a visualization, identify the actions the vis allows and the targets of those actions

Skills

1. Select relevant data to create dashboards
2. Use of techniques to create graphs
3. Data view from a practical perspective
4. Produce effective visualizations of quantitative data

DESCRIPTION OF CONTENTS: PROGRAMME

1. Infovis overview
2. Data
3. Temporal data visualization
4. Topic visualization
5. Trees and graphs, hierarchical data
6. Geospatial data, maps
7. Information visualization

LEARNING ACTIVITIES AND METHODOLOGY

TRAINING ACTIVITIES OF THE CURRICULUM RELATED TO SUBJECTS

AF1 Individual work for the study of theoretical and practical materials developed and contributed by the teacher

AF2 Individual work for problem solving and case studies

AF3 Theoretical-practical classes

AF4 Tutorials

AF5 Active participation in forums in the educational platform

Code Activity	Total hours	Onsite Hours	% Onsite
AF1	125(45)	0	0
AF2	80(32)	0	0
AF3	12(3)	12(3)	100
AF4	10(2)	0	0
AF5	124(0)	0	0
AF6	5(2)	0	0
AF7	4(1)	0	0
TOTAL SUBJ.(COURSE)	360(90)	12(3)	3,3

LA 1. Individual work for the study of theoretical and practical materials developed and contributed by the teacher

- LA 2. Individual work for problem solving and case studies
- LA 3. Video-tutorials
- LA 4. Active participation in forums enabled by the teacher in the virtual educational platform
- LA 5. Conducting self-evaluation tests to review content

TEACHING METHODOLOGIES

- M 1. Explanations of the teacher with support of computer and audiovisual media, in which the main concepts of the subjects are developed
- M 2. Critical reading of texts recommended by the professor of the subject
- M 3. Resolution of practical cases and problems raised by the teacher in an individual way
- M 4. Reading of theoretical and practical teaching materials

TUTORIALS

The schedules of the tutorials, adjusted to the provisions of the University, It will be able to be consulted in the own space of the subject in the platform of teaching and learning (Aula Global). It will include two modes: One to attend face-to-face and the other for online handle. Furthermore students can request and arrange with the teacher tutorials online or offline outside of these schedules.

ASSESSMENT SYSTEM

Continuous assessment (80%):

Resolution of 2 practical exercises = 80% of the final grades

Individual Exercise 1º: 40% Exploratory data analysis

Individual Exercise 2º: 40% Create a dashboard

End-of-term-examination (20%). Questionnaire about topics and readings of the course

End-of term-examination will be in face-to-face mode, at Carlos III University and must overcome it in order to pass the course.

Extraordinary call.

To overcome the subject in the extraordinary call, the student must pass the following tests:

- Two practical tasks to be delivered in advance that will be worth a maximum of 80% of the final grade of the subject.
- A final exam . Questionnaire about topics and readings of the course, that will be a maximum of 20% of the final grade of the subject, at Carlos III University (face-to-face) and must overcome it in order to pass the course. The percentage of the maximum grade that the student can reach in the extraordinary call is 100%.

% end-of-term-examination:	20
% of continuous assessment (assignments, laboratory, practicals...):	80

BASIC BIBLIOGRAPHY

- Cairo, A El arte funcional, Alamut, 2011
- Costa. J La esquemática: visualizar la información., Barcelona: Paidos, 1998
- Spence, R Information visualization, Springer, 2014
- Tufte, E. R The visual display of quantitative information. 2nd edition, Cheshire: Graphics Press, 2007
- Tufte, E. R Visual Explanations, Graphic Press, 1997
- Tufte, E. R. Envisioning Information, Cheshire: Graphic Press, 1990

ADDITIONAL BIBLIOGRAPHY

- Arnheim, Rudolf El pensamiento visual, Barcelona: Paidos, 1986