



Syllabus

Subject

Subject / Group	11007 - Scientific Presentation and Visualitation / 1
Degree	Master's in Physics of Complex Systems Master's in Advanced Physics and Applied Mathematics
Credits	3
Period	1st semester
Language of instruction	English

Professors

Lecturers	Office hours for students					
	Starting time	Finishing time	Day	Start date	End date	Office / Building
Sandro Meloni	16:00	18:00	Wednesday	16/10/2019	31/03/2020	Office 104 A / Edifici Instituts Universitaris de Recerca
José Javier Ramasco Sukia jramasco@ifisc.uib-csic.es	10:00	11:00	Monday	14/10/2019	31/05/2020	104 / Científico- Tecnico

Context

This class offers an introduction to data visualization and results presentation with a special focus on the applicability of this knowledge to the environment of work related to scientific research.

Requirements

Recommended

A basic knowledge of scientific programming is highly recommended to obtain the maximum benefit from this course.

Skills

Specific

- * E3: Capacity for analysis and visualization of numerical data and knowledge of interactive interfaces.



Syllabus

Generic

- * TG1: To be able to describe, both mathematically and physically, complex systems in different situations.
- * TG3: To write and describe rigorously the research process and present the conclusions to an expert audience.
- * TG4: To acquire the ability to ask questions, read and listen critically and participate actively in seminars and discussions.
- * TG5: To knowing to disseminate and present the concepts acquired at a non-expert.
- * TG6: To acquire high power computation skills and advanced numerical methods capabilities in applications to problems in the context of complex systems.

Basic

- * You may consult the basic competencies students will have to achieve by the end of the Master's degree at the following address: http://estudis.uib.cat/master/comp_basiques/

Content

Range of topics

1. Introduction to data visualization
 - 1.2. Data attributes and data types
 - 1.3. Interaction Principles
 - 1.4. Item reduction, aggregation of data
 - 1.5. Visualization tools
2. Result presentation
 - 2.1. Structure
 - 2.2. Characteristics of each section

Teaching methodology

In-class work activities (0.75 credits, 18.75 hours)

Modality	Name	Typ. Grp.	Description	Hours
Theory classes		Large group (G)	To understand the basic principles of data visualization and result presentation	9
Practical classes		Large group (G)	To gain practice with visualization tools and to present the results	9.75

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to

Syllabus

whether the subject work plan will be carried out through the schedule or through another way included in the Aula Digital platform.

Distance education tasks (2.25 credits, 56.25 hours)

Modality	Name	Description	Hours
Individual self-study		To prepare a presentation	56.25

Specific risks and protective measures

The learning activities of this course do not entail specific health or safety risks for the students and therefore no special protective measures are needed.

Student learning assessment

Frau en elements d'avaluació

In accordance with article 33 of Regulation of academic studies, "regardless of the disciplinary procedure that may be followed against the offending student, the demonstrably fraudulent performance of any of the evaluation elements included in the teaching guides of the subjects will lead, at the discretion of the teacher, a undervaluation in the qualification that may involve the qualification of "suspense 0" in the annual evaluation of the subject".

Theory classes

Modality	Theory classes
Technique	Papers and projects (non-retrievable)
Description	To understand the basic principles of data visualization and result presentation
Assessment criteria	Participation in class and quality of the work developed

Final grade percentage: 20%

Practical classes

Modality	Practical classes
Technique	Papers and projects (non-retrievable)
Description	To gain practice with visualization tools and to present the results
Assessment criteria	Participation in class and quality of the work developed

Final grade percentage: 30%



Syllabus

Individual self-study

Modality	Individual self-study
Technique	Papers and projects (non-retrievable)
Description	To prepare a presentation
Assessment criteria	Quality of the presented work

Final grade percentage: 50%

Resources, bibliography and additional documentation

Basic bibliography

- Information Visualization: Principles, Methods, and Practice, Tamara Munzner, to be published by AK Peters, with a draft available at <http://www.cs.ubc.ca/~tmm/courses/533-11/book/>

Complementary bibliography

- The Visual Display of Quantitative Information, Edward R. Tufte, Graphics Pr; 2nd edition (May 2001)

