



Universitat de Lleida

GUÍA DOCENTE

STORYTELLING WITH DATA

Coordinación: VILAPRIÑO TERRE, ESTER

Año académico 2020-21

Información general de la asignatura

Denominación	STORYTELLING WITH DATA			
Código	14709			
Semestre de impartición	1R Q(SEMESTRE) EVALUACIÓN CONTINUADA			
Carácter	Grado/Máster	Curso	Carácter	Modalidad
	Máster Universitario en Investigación Biomédica	1	OPTATIVA	Presencial
Número de créditos de la asignatura (ECTS)	4			
Tipo de actividad, créditos y grupos	Tipo de actividad	PRAULA	TEORIA	
	Número de créditos	2.5	1.5	
	Número de grupos	1	1	
Coordinación	VILAPRIÑO TERRE, ESTER			
Departamento/s	CIENCIAS MÉDICAS BÁSICAS			
Información importante sobre tratamiento de datos	Consulte este enlace para obtener más información.			

Profesor/a (es/as)	Dirección electrónica\nprofesor/a (es/as)	Créditos impartidos por el profesorado	Horario de tutoría/lugar
SORRIBAS TELLO, ALBERT	albert.sorribas@udl.cat	1	
VAQUEIRO DE CASTRO ALVES, RUI CARLOS	rui.alves@udl.cat	1	
VILAPRIÑO TERRE, ESTER	ester.vilaprinyo@udl.cat	2	

Objetivos académicos de la asignatura

Learning results:

- You will learn about basic data analysis and prediction techniques: dimensionality reduction, linear and logistic regression model, clusters, dendograms, neural networks and SVM.
- You will know the main data analysis and representation packages in R (ggplot2, lattice, leaflet and shiny) and Python (seaborn, pandas and numpy)
- You will know how to use them in a way adapted to your data and problem.
- You will be able to generate the right visualizations to communicate your results clearly and accurately.
- You will understand the importance of group work and cooperation among researchers.
- You will be able to formulate work objectives, plan the work, carry out the experiments, present the results obtained and draw conclusions.

Contenidos fundamentales de la asignatura

1. **Story trends from data:** Linear Regression and Correlations.
2. **From complex data to a simpler story:** Principal Component Analysis and Factor Analysis.
3. **Group building from data:** Clusters and Dendograms.
4. **Group assignment from data:** Logistic Regression, Neural Networks, and Support Vector Machine.
5. **Story telling tools I.** A sip of R: Tydiverse, Ggplot2, Plotly, Shiny, and Leaflet.
6. **Story telling tools II.** A sip of Phyton: Seaborn, Pandas, and Numpy.

Ejes metodológicos de la asignatura

- Active class sessions based on data analysis and student participation.
- Introduction of statistical and technical tools by lecturers.
- Intensive use of computer programs (R and Phyton).
- Students should bring their own computer for class activities (this facilitates further work at home)
- Autonomous work by students

Plan de desarrollo de la asignatura

- The course will be developed in 20 sessions of 2 hours each. No distinction is made among practical and theoretical work.
- Depending of the situation with respect the SARS-COV-2 pandemic, some of the activites would be developed virtually.
- A specific schedule will be added in the contens section of the virtual campus as soon as we know the conditions for the next lecturing period.

Sistema de evaluación

- 20% Oral presentation of work
- 15% Class participation in discussions and data analysis
- 65% Assignments (article analysis, projects, data analysis)

Bibliografía y recursos de información

Web links, articles, data collections, etc. will be provided during the course and made available at the virtual campus.