

Academic Year: ( 2023 / 2024 )

Review date: 15-07-2023

Department assigned to the subject: Social Sciences Department

Coordinating teacher: TORRE FERNANDEZ, MARGARITA

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 2

**REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)**

Data Programming (19138)  
Statistics and Data Science I (19140)  
Statistics and Data Science II (19141)  
Survey Research Methodology I (19137)

**OBJECTIVES**

- Ability to analyze survey data.
- Ability to solve frequent problems in survey analysis, such as dealing with missing cases.
- Ability to work with aggregate, multilevel and longitudinal data.

**DESCRIPTION OF CONTENTS: PROGRAMME**

1. Survey Data Analysis
  - 1.1. Operationalization and data cleaning
  - 1.2. Cross-sectional data analysis
  - 1.3. Panel data analysis
  - 1.4. Multilevel analysis
2. The use of survey data in forecasting
  - 2.1. Predicting versus explaining
  - 2.2. Performance evaluación
3. Dealing with missing data
  - 3.1. Complete case analysis
  - 3.2. Mean/median substitution
  - 3.3. Multiple imputation
4. Data reporting
5. Work examples

**LEARNING ACTIVITIES AND METHODOLOGY**

Training Activities:

- Theoretical-practical classes
- Group work
- Individual student work
- Partial and final examinations

Teaching Methods:

- Presentations in the professor's lecture room with computer and audiovisual support, in which the main concepts of the subject are developed and a bibliography is provided to complement the students' learning.
- Critical reading of texts recommended by the subject professor: Press articles, reports, manuals and/or academic articles, either for later discussion in class, or to expand and consolidate knowledge of the subject.
- Resolution of practical cases, problems, etc. raised by the professor, either individually or in a group.

- Presentation and discussion in class, under the moderation of the professor, of topics related to the content of the subject, as well as practical case studies.
- Developing pieces of work and reports, individually or in group.

#### ASSESSMENT SYSTEM

- Participation in the class (10%)
- Individual or group work done during the course (40%)\*
- Final exam (50%)\*

\*With a minimum grade of 5 points over 10 in each assignment.

In the extraordinary call, the evaluation system will be as follows:

1) Exam: 100%

<b>% end-of-term-examination:</b>	50
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	50

#### BASIC BIBLIOGRAPHY

- Alisson, Paul Missing Data, Sage Publications, 2001
- Brown, J. D. Using Surveys in Language Programs, Cambridge University Press, 2001
- Gelman, A.; Hill, J.; Vehtari, A. Regression and other stories, Cambridge University Press, 2020
- Luke, D.A. Multilevel Modeling, Sage Publications, 2019
- Wickham, H. & Grolemund, G. R for Data Science, O'Reilly Media, Inc, 2016

#### ADDITIONAL BIBLIOGRAPHY

- Allison, P. Fixed Effects Regression Models, Sage Publications, 2009
- Finch, W. H.; Bolin, J. E. & Kelley, K. Multilevel Modeling Using R, Crc Press, 2019
- Long, J. S. SAGE publications Regression models for categorical and limited dependent variables, Sage Publications, 1997
- Stevens, J.S. Applied Multivariate Statistics for the Social Sciences, Routledge, 2009

#### BASIC ELECTRONIC RESOURCES

- Wickham, H., & Grolemund, G. R for Data Science: <https://r4ds.had.co.nz/>