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Academic Year: ( 2022 / 2023 )

Review date: 18-05-2022

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Department assigned to the subject: Social Sciences Department

Coordinating teacher: TORRE FERNANDEZ, MARGARITA

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 1

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

Introduction to Programming with R (19151)

Basic Statistics (19152)

## OBJECTIVES

Core Competences:

- Having and understanding the knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- Students know how to apply their acquired knowledge and problem-solving skills in new or unfamiliar settings within broader (or multidisciplinary) contexts related to their field of study.
- Students are able to integrate knowledge and to face the complexity of making judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.
- Students know how to communicate their conclusions and the knowledge and ultimate reasons behind them to specialised and non-specialised audiences in a clear and unambiguous way.
- Students have the learning skills that will enable them to continue studying in a way that will be largely self-directed or autonomous.

General Competences:

- Ability to understand and analyze the main global social theories and how they are changing with the application of computational tools.
- Ability to identify, define and formulate social science problems and solve them using computational techniques. This includes the ability to assess all the factors involved, not only technical but also legal.
- Ability to compile and analyze existing knowledge in the different areas of computational social sciences, and to propose possible solutions to the problems raised.
- Ability to apply theoretical and methodological knowledge of computational social sciences to the analysis and resolution of specific cases and empirical problems.
- Ability to address issues raised under new or unfamiliar environments, within the context of computational social sciences.
- Ability to plan and carry out research in the field of computational social sciences in an autonomous way.
- Ability to communicate and present, in a clear, precise and rigorous manner, concepts and results related to computational social science activities to both specialized and non-specialized audiences.

Specific Competences:

- Ability to understand and analyze the main theoretical-methodological approaches of computational social sciences, their potentials and limitations, and to apply them to the analysis of specific social problems.
- Ability to lead and supervise interdisciplinary teams in the field of computational social sciences.

Learning Outcomes:

- Ability to deal with all the stages in survey design.
- 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.
- Knowledge of sampling methods.

## DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction on Survey Research
2. Surveys and the Research Process
3. Measurement
  - Conceptualizing Ideas and operationalizing questions
  - Pre-Testing Questions
  - Measurement error
  - Validation and reliability
4. Modes of Data Collection
  - Face-to-face
  - Telephone / Mobile
  - Web / Online panels / SMS / Others
  - Mixed methods
5. Sampling and Populations
  - 5.1. Introduction to sampling theory
    - Validity
    - Error
  - 5.2. Types of samples
    - Probabilistic
    - Non-probabilistic
    - Hidden-populations
    - Graph
  - 5.3. Post-sampling adjustments
    - Variance estimation
    - Weighing
    - Non-response

## LEARNING ACTIVITIES AND METHODOLOGY

### Training Activities:

- Theoretical-practical classes
- Laboratory practical sessions
- 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 (15%)
- Individual or group work done during the course (45%)
- Final exam (40%)

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

#### BASIC BIBLIOGRAPHY

- Dillman, Don A., Jolene D. Smyth, and Leah Melani Christian Hoboken Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method, Hoboken, New Jersey., 2014
- Groves, Robert M., Floyd J. Fowler Jr, Mick P. Couper, James M. Lepkowski, Eleanor Singer, and Roger Tourangeau Survey Methodology, 2nd ed. Wiley, 2009
- Valliant, Richard, Jill A. Dever, and Frauke Kreuter Practical Tools for Designing and Weighting Survey Samples, Springer (2nd edition), 2018

#### ADDITIONAL BIBLIOGRAPHY

- Bradburn, Norman M., Seymour Sudman, and Brian Wansink Asking Questions: The Definitive Guide to Questionnaire Design -- For Market Research, Political Polls, and Social and Health Questionnaires, San Francisco, Calif., 2004
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- Fowler, Floyd J. Survey Research Methods, Los Angeles, Calif., 2013
- Lohr, Sharon L. Sampling: Design and Analysis, Boca Raton, 2021
- Saris, W.E. Design, Evaluation, and Analysis of Questionnaires for Survey Research, 2nd Edition. , Willey, 2014
- Saris, W.E. Design, Evaluation, and Analysis of Questionnaires for Survey Research, 2nd Edition. , Wiley, 2014